Mathematics Curriculum

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GRADE K • MODULE 1

Numbers to 10

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Module 1: Numbers to 10
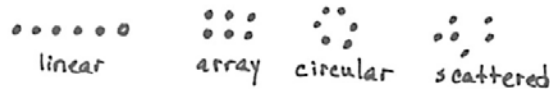
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Grade K • Module 1

Numbers to 10

OVERVIEW

The first day of Kindergarten is long anticipated by parents and young students. Students expect school to be a dynamic and safe place to learn, an objective that is realized immediately by their involvement in purposeful and meaningful action.

In Topics A and B, classification activities allow students to analyze and observe their world and articulate their observations. Reasoning and dialogue begin immediately. "These balloons are exactly the same." "These are the same but a different size." As Topic B closes, students recognize cardinalities as yet one more lens for classification (**K.MD.3**). "I put a pencil, a book, and an eraser, three things, in the backpack for school." "I put five toys in the closet to keep at home." From the moment students enter school, they practice the counting sequence so that when counting a set of objects, their attention can be on matching one count to one object, rather than on retrieving the number words (**K.CC.4a**).

In Topics C, D, E, and F, students order, count (**K.CC.1**), and write (**K.CC.3**) up to ten objects to answer *how many* questions from linear, to array, to circular, and finally to scattered configurations wherein they must devise a path through the objects as they count. Students use their understanding of numbers and matching numbers with objects to answer *how many* questions about a variety of objects, pictures, and drawings (**K.CC.5**).

They learn that the last number name said tells the number of objects counted (**K.CC.4b**). Daily, they engage in mathematical dialogue. They might compare their seven objects to a friend's. For example, "My cotton balls are bigger than your cubes, but when we count them, we both have seven!"

Very basic expressions and equations are introduced early in order to ensure students' familiarity with numbers throughout the entire year so that they exit fluent in sums and differences to 5 (**K.OA.5**). Decomposition is modeled with small numbers with materials and drawings and as addition equations. Students see that both the expression 2 + 1 (Topic C) and the equation 3 = 2 + 1 (Topic D) describe a stick of three cubes decomposed into two parts (**K.OA.3**). Emphasis is not placed on the expressions and equations or using them in isolation from the concrete and pictorial—they are simply included to show another representation of decompositions alongside counters and drawings.

In Topics G and H, students use their understanding of relationships between numbers to recognize that each successive number name refers to a quantity that is one greater and that the number before is one less (**K.CC.4c**). This important insight leads students to use the Level 2 strategy of counting on rather than counting all, later in the year and on into Grade 1.

In this module, daily fluency activities with concentration and emphasis on counting (**K.CC.4ab**, **K.CC.5**) are integrated throughout the concept development: "I counted six beans in a row. I counted six beans in a circle and then squished them together and counted again. There were still six!" "I can make my six beans into rows, and there are no extras." Students complete units of five using the fingers of their left hand and 5-groups. The numbers 6, 7, 8, and 9 are introduced relative to the number 5: "Five fingers and _____ more." Students also explore numbers 5 to 9 in relation to 10, or two complete fives: "Nine is missing one to be ten or two fives." (**K.OA.4**)

As students begin to master writing numbers to 10, they practice with paper and pencil. This is a critical daily fluency that may work well to close lessons, since management of young students is generally harder toward the end of math time. The paper and pencil work is calming, though energized.

Notes on Pacing for Differentiation

If pacing is a challenge, consider the following modifications. Consider consolidating Lessons 1 and 2 if students are competent in recognizing and discussing subtle differences in the attributes of objects.

Lessons 12, 13, 15, 18, 20, 22, 24, and 26 include numeral formation along with counting and cardinality concepts. In prioritizing a focus within each lesson (e.g., if reducing the instructional time for numeral writing), take care not to inadvertently omit the teaching of math concepts within the same lesson (e.g., cardinality, conservation, and counting in varied configurations).

Distribution of Instructional Minutes
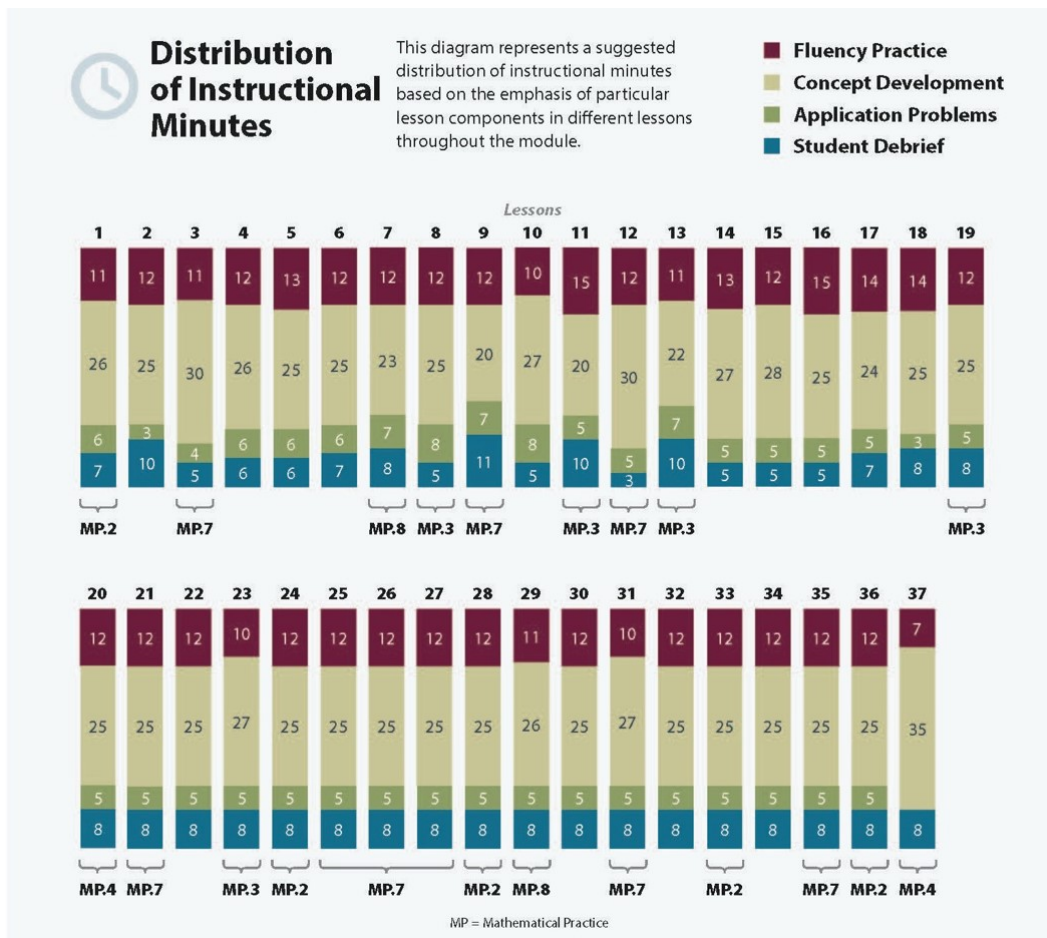
Focus Grade Level Standards[1]

Know number names and the count sequence.[2]

K.CC.3   Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

Count to tell the number of objects.[3]

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.

  a.   When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

  b.   Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

  c.   Understand that each successive number name refers to a quantity that is one larger.

K.CC.5   Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.[4]

K.OA.3   Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

Classify objects and count the number of objects in each category.

K.MD.3   Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)

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[1] In this module work is limited to within 10.

[2] The balance of this cluster is addressed in Module 5.

[3] K.CC.4d is addressed in Module 6.

[4] The balance of this cluster is addressed in Module 4.

Foundational Standards

PK.CC.1   Count to 20.

PK.CC.2   Represent a number of objects with a written numeral 0–5 (with 0 representing a count of no objects).

PK.CC.3   Understand the relationship between numbers and quantities to 10; connect counting to cardinality.

       a.   When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

       b.   Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

       c.   Understand that each successive number name refers to a quantity that is one larger.

PK.CC.4   Count to answer "how many?" questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects.

PK.CC.6   Identify "first" and "last" related to order or position.

Focus Standards for Mathematical Practice

MP.2   **Reason abstractly and quantitatively.** Students represent quantities with numerals.

MP.3   **Construct viable arguments and critique the reasoning of others.** Students reason about each other's ways of counting fingers or a scattered set of objects. They reason about counting fingers by comparing the fingers counted and about scattered objects by comparing counting paths through a set of up to 10 scattered objects.

MP.4   **Model with mathematics.** Students model decompositions of three objects as math drawings and addition equations.

MP.7   **Look for and make use of structure.** Students use the 5-group to reason about numbers within 10.

MP.8   **Look for and express regularity in repeated reasoning.** Students build a number stair to reason about 1 more and 1 less than each number within 10.

Overview of Module Topics and Lesson Objectives

Standards	Topics and Objectives		Days
K.MD.3	A	**Attributes of Two Related Objects**	3
		Lesson 1: Analyze to find two objects that are *exactly the same* or *not exactly the same.*	
		Lesson 2: Analyze to find two similar objects—*these are the same but….*	
		Lesson 3: Classify to find two objects that share a visual pattern, color, and use.	
K.CC.4a **K.CC.4b** **K.MD.3**	B	**Classify to Make Categories and Count**	3
		Lesson 4: Classify items into two pre-determined categories.	
		Lesson 5: Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.	
		Lesson 6: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.	
K.CC.4a **K.CC.4b** **K.CC.5** **K.OA.3** K.MD.3	C	**Numbers to 5 in Different Configurations, Math Drawings, and Expressions**	5
		Lesson 7: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.	
		Lesson 8: Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.	
		Lesson 9: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners.*	
		Lesson 10: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.	
		Lesson 11: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.	

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| Standards		Topics and Objectives	Days
K.CC.3 **K.CC.4a** **K.CC.4b** **K.CC.5**	D	**The Concept of Zero and Working with Numbers 0–5**	5
		Lesson 12: Understand the meaning of zero. Write the numeral 0.	
		Lesson 13: Order and write numerals 0–3 to answer *how many* questions.	
		Lesson 14: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.	
		Lesson 15: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.	
		Lesson 16: Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.	
		Mid-Module Assessment: Topics A–D (Interview style assessment: 3 days)	3
K.CC.3 **K.CC.4a** **K.CC.4b** **K.CC.5** K.MD.3	E	**Working with Numbers 6–8 in Different Configurations**	6
		Lesson 17: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.	
		Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.	
		Lesson 19: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.	
		Lesson 20: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different than mine?"	
		Lesson 21: Compare counts of 8. Match with numeral 8.	
		Lesson 22: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scattered set, and compare paths with a partner.	
K.CC.3 **K.CC.4a** **K.CC.4b** **K.CC.5**	F	**Working with Numbers 9–10 in Different Configurations**	6
		Lesson 23: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.	
		Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.	

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Standards		Topics and Objectives	Days
		Lessons 25–26: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.	
		Lesson 27: Count 10 objects, and move between all configurations.	
		Lesson 28: Act out *result unknown* story problems without equations.	
K.CC.4a **K.CC.4b** **K.CC.4c** K.CC.2 K.CC.5	G	*One More* with Numbers 0–10 Lesson 29: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number. Lesson 30: Make math stairs from 1 to 10 in cooperative groups. Lesson 31: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers. Lesson 32: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.	4
K.CC.4a **K.CC.4b** **K.CC.4c** K.CC.5	H	*One Less* with Numbers 0–10 Lesson 33: Order quantities from 10 to 1, and match numerals. Lesson 34: Count down from 10 to 1, and state 1 less than a given number. Lesson 35: Arrange number towers in order from 10 to 1, and describe the pattern. Lesson 36: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers. Lesson 37: Culminating task *Decide how to classify the objects in your bag into two groups. Count the number of objects in each group. Represent the greater number in various ways. Next, remove the card from your pack that shows the number of objects in the smaller group. Put your remaining cards in order from smallest to greatest. Your friends will have to figure out what card is missing when they visit your station!*	5
		End-of-Module Assessment: Topics E–H (Interview style assessment: 3 days)	3
Total Number of Instructional Days			**43**

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Terminology

New or Recently Introduced Terms

- Exactly the same, not exactly the same, and the same, but… (ways to analyze objects to match or sort)
- Match (group items that are the same or that have the same given attribute)
- Sort (group objects according to a particular attribute)
- How many? (with reference to counting quantities or sets)
- Hidden partners (embedded numbers)
- Counting path (with reference to order of count)
- Number story (stories with *add to* or *take from* situations)
- Zero (understand the meaning of, write, and recognize)
- Number sentence (3 = 2 + 1)
- 5-group (pictured right)
- Rows and columns (linear configuration types)
- Number path
- 1 more (e.g., 4. 1 more is 5.)
- 1 less (e.g., 4. 1 less is 3.)
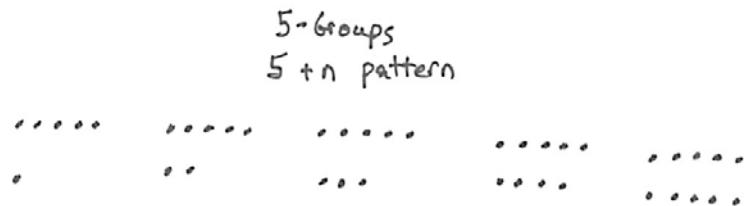
Suggested Tools and Representations

- Rulers for use as a straightedge
- Five dot mat
- Five-frame and ten-frame cards
- Number path
- Left hand mat
- Two hands mat
- 5-group cards
- Rekenrek (Slavonic abacus having beads with a color change at the five)
- Concrete materials in individual bags for counting and sorting (white beans painted red on one side, bags of twigs, dried leaves, dry pasta, pennies, plates, forks, spoons, cups, etc.)
- Commercial concrete materials (linking cubes in tens, non-linking cubes, square-inch tiles, etc.)
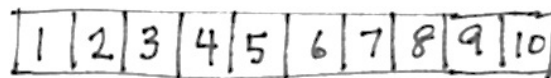
Number Path
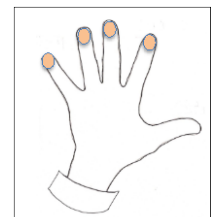
Left Hand Mat

20-Bead Rekenrek
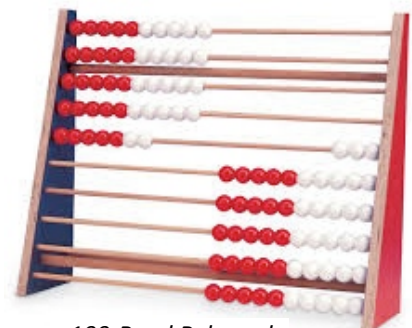
100-Bead Rekenrek

Suggested Methods of Instructional Delivery

Personal White Boards

Materials Needed for Personal White Boards

1 heavy duty, clear sheet protector
1 piece of stiff red tag board 11" × 8 ¼"
1 piece of stiff white tag board 11" × 8 ¼"
1 3" × 3" piece of dark synthetic cloth for an eraser (e.g., felt)
1 low odor blue dry erase marker, fine point

Directions for Creating Personal White Boards

Cut the white and red tag to specifications. Slide into the sheet protector. Store the eraser on the red side. Store markers in a separate container to avoid stretching the sheet protector.

Frequently Asked Questions About Personal White Boards

Why is one side red and one white?

- The white side of the board is the "paper." Students generally write on it, and if working individually, turn the board over to signal to the teacher they have completed their work. The teacher then says, "Show me your boards," when most of the class is ready.

What are some of the benefits of a personal white board?

- The teacher can respond quickly to gaps in student understandings and skills. "Let's do some of these on our personal white boards until we have more mastery."
- Students can erase quickly so that they do not have to suffer the evidence of their mistake.
- They are motivating. Students love both the drill and thrill capability and the chance to do story problems with an engaging medium.
- Checking work gives the teacher instant feedback about student understanding.

What is the benefit of this personal white board over a commercially purchased dry erase board?

- It is much less expensive.
- Templates such as place value charts, number bond mats, hundreds boards, and number lines can be stored between the two pieces of tag board for easy access and reuse.
- Worksheets, story problems, and other problem sets can be done without marking the paper so that students can work on the problems independently at another time.
- Strips with story problems, number lines, and arrays can be inserted and still have a full piece of paper on which to write.
- The red versus white side distinction clarifies expectations. When working collaboratively, there is no need to use the red. When working independently, the students know how to keep their work private.
- The tag board can be removed if necessary to project the work.

Homework

Homework at the K–1 level is not a convention in all schools. In this curriculum, homework is an opportunity for additional practice of the content from the day's lesson. The teacher is encouraged, with the support of parents, administrators, and colleagues, to discern the appropriate use of homework for his students. Fluency exercises can also be considered as an alternative homework assignment.

Scaffolds[5]

The scaffolds integrated into *A Story of Units* give alternatives for how students access information as well as express and demonstrate their learning. Strategically placed margin notes are provided within each lesson elaborating on the use of specific scaffolds at applicable times. They address many needs presented by English language learners, students with disabilities, students performing above grade level, and students performing below grade level. Many of the suggestions are organized by Universal Design for Learning (UDL) principles and are applicable to more than one population. To read more about the approach to differentiated instruction in *A Story of Units,* please refer to "How to Implement *A Story of Units*."

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[5]Students with disabilities may require Braille, large print, audio, or special digital files. Please visit the website www.p12.nysed.gov/specialed/aim for specific information on how to obtain student materials that satisfy the National Instructional Materials Accessibility Standard (NIMAS) format.

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Preparing to Teach a Module

Preparation of lessons will be more effective and efficient if there has been an adequate analysis of the module first. Each module in *A Story of Units* can be compared to a chapter in a book. How is the module moving the plot, the mathematics, forward? What new learning is taking place? How are the topics and objectives building on one another? The following is a suggested process for preparing to teach a module.

Step 1: Get a preview of the plot.

    A: Read the Table of Contents. At a high level, what is the plot of the module? How does the story develop across the topics?

    B: Preview the module's Exit Tickets[6] to see the trajectory of the module's mathematics and the nature of the work students are expected to be able to do.

    Note: When studying a PDF file, enter "Exit Ticket" into the search feature to navigate from one Exit Ticket to the next.
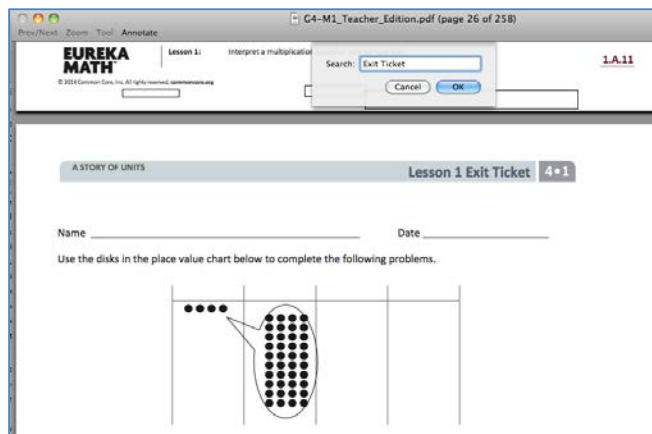
Step 2: Dig into the details.

    A: Dig into a careful reading of the Module Overview. While reading the narrative, *liberally* reference the lessons and Topic Overviews to clarify the meaning of the text—the lessons demonstrate the strategies, show how to use the models, clarify vocabulary, and build understanding of concepts. Consider searching the video gallery on *Eureka Math*'s website to watch demonstrations of the use of models and other teaching techniques.

    B: Having thoroughly investigated the Module Overview, read through the chart entitled Overview of Module Topics and Lesson Objectives to further discern the plot of the module. How do the topics flow and tell a coherent story? How do the objectives move from simple to complex?

Step 3: Summarize the story.

    Complete the Mid- and End-of-Module Assessments. Use the strategies and models presented in the module to explain the thinking involved. Again, liberally reference the work done in the lessons to see how students who are learning with the curriculum might respond.

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[6]A more in-depth preview can be done by searching the Problem Sets rather than the Exit Tickets. Furthermore, this same process can be used to preview the coherence or flow of any component of the curriculum, such as Fluency Practice or Application Problems.

Preparing to Teach a Lesson

A three-step process is suggested to prepare a lesson. It is understood that at times teachers may need to make adjustments (customizations) to lessons to fit the time constraints and unique needs of their students. The recommended planning process is outlined below. Note: The ladder of Step 2 is a metaphor for the teaching sequence. The sequence can be seen not only at the macro level in the role that this lesson plays in the overall story, but also at the lesson level, where each rung in the ladder represents the next step in understanding or the next skill needed to reach the objective. To reach the objective, or the top of the ladder, all students must be able to access the first rung and each successive rung.

Step 1: Discern the plot.

   A: Briefly review the module's Table of Contents, recalling the overall story of the module and analyzing the role of this lesson in the module.

   B: Read the Topic Overview related to the lesson, and then review the Problem Set and Exit Ticket of each lesson in the topic.

   C: Review the assessment following the topic, keeping in mind that assessments can be found midway through the module and at the end of the module.

Step 2: Find the ladder.

   A: Complete the lesson's Problem Set.

   B: Analyze and write notes on the new complexities of each problem as well as the sequences and progressions throughout problems (e.g., pictorial to abstract, smaller to larger numbers, single- to multi-step problems). The new complexities are the rungs of the ladder.

   C: Anticipate where students might struggle, and write a note about the potential cause of the struggle.

   D: Answer the Student Debrief questions, always anticipating how students will respond.
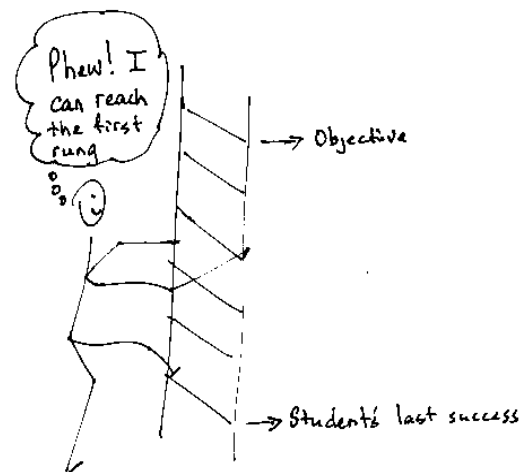
Step 3: Hone the lesson.

   At times, the lesson and Problem Set are appropriate for all students and the day's schedule. At others, they may need customizing. If the decision is to customize based on either the needs of students or scheduling constraints, a suggestion is to decide upon and designate "Must Do" and "Could Do" problems.

   A: Select "Must Do" problems from the Problem Set that meet the objective and provide a coherent experience for students; reference the ladder. The expectation is that the majority of the class will complete the "Must Do" problems within the allocated time. While choosing the "Must Do" problems, keep in mind the need for a balance of calculations, various word problem types[7], and work at both the pictorial and abstract levels.

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[7]See the Progression Documents "K, Counting and Cardinality" (pp. 9) and "K–5, Operations and Algebraic Thinking" (pp. 23).

B: "Must Do" problems might also include remedial work as necessary for the whole class, a small group, or individual students. Depending on anticipated difficulties, those problems might take different forms as shown in the chart below.

Anticipated Difficulty	"Must Do" Remedial Problem Suggestion
The first problem of the Problem Set is too challenging.	Write a short sequence of problems on the board that provides a ladder to Problem 1. Direct the class or small group to complete those first problems to empower them to begin the Problem Set. Consider labeling these problems "Zero Problems" since they are done prior to Problem 1.
There is too big of a jump in complexity between two problems.	Provide a problem or set of problems that creates a bridge between the two problems. Label them with the number of the problem they follow. For example, if the challenging jump is between Problems 2 and 3, consider labeling the bridging problems "Extra 2s."
Students lack fluency or foundational skills necessary for the lesson.	Before beginning the Problem Set, do a quick, engaging fluency exercise, such as a Rapid White Board Exchange, "Thrilling Drill," or Sprint. Before beginning any fluency activity for the first time, assess that students are poised for success with the easiest problem in the set.
More work is needed at the concrete or pictorial level.	Provide manipulatives or the opportunity to draw solution strategies. Especially in Kindergarten, at times the Problem Set or pencil and paper aspect might be completely excluded, allowing students to simply work with materials.
More work is needed at the abstract level.	Hone the Problem Set to reduce the amount of drawing as appropriate for certain students or the whole class.

C: "Could Do" problems are for students who work with greater fluency and understanding and can, therefore, complete more work within a given time frame. Adjust the Exit Ticket and Homework to reflect the "Must Do" problems or to address scheduling constraints.

D: At times, a particularly tricky problem might be designated as a "Challenge!" problem. This can be motivating, especially for advanced students. Consider creating the opportunity for students to share their "Challenge!" solutions with the class at a weekly session or on video.

E: Consider how to best use the vignettes of the Concept Development section of the lesson. Read through the vignettes, and highlight selected parts to be included in the delivery of instruction so that students can be independently successful on the assigned task.

F: Pay close attention to the questions chosen for the Student Debrief. Regularly ask students, "What was the lesson's learning goal today?" Help them articulate the goal.

Assessment Summary

Assessment Type	Administered	Format	Standards Addressed
Mid-Module Assessment Task	After Topic D	Interview with Rubric	(Numbers 1–5) K.CC.3 K.CC.4ab K.CC.5 K.OA.3 K.MD.3
End-of-Module Assessment Task	After Topic H	Interview with Rubric	(Numbers 0–10) K.CC.3 K.CC.4abc K.CC.5
Culminating Task	Lesson 37	*Decide how to classify the objects in your bag into two groups. Count the number of objects in each group. Represent the greater number in various ways. Next, remove the 5-group card from your pack that shows the number of objects in the smaller group. Put your remaining cards in order from smallest to greatest. Your friends will have to figure out what card is missing when they visit your station!*	K.CC.3 K.CC.4abc K.CC.5 K.MD.3

Mathematics Curriculum

Topic A
Attributes of Two Related Objects

K.MD.3

Focus Standard:	K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)
Instructional Days:	3	
Coherence -Links from:	GPK–M1	Counting to 5
	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

The first day of Kindergarten is long anticipated by parents and young students. In Lesson 1, students reason about matching pairs of objects. Some of the pairs are exactly the same, and some are similar but differ by color, size, position, etc. In Lesson 2, this concept is deepened by asking students to identify attributes of matching pairs that either make them exactly the same, or similar but different because they differ in color or position. Lesson 3 culminates the topic by guiding students to reason about pairing two objects according to their visual pattern, color, or use (**K.MD.3**).

A Teaching Sequence Toward Mastery of Attributes of Two Related Objects
Objective 1: Analyze to find two objects that are *exactly the same* or *not exactly the same*. (Lesson 1)
Objective 2: Analyze to find two similar objects—*these are the same but…* (Lesson 2)
Objective 3: Classify to find two objects that share a visual pattern, color, and use. (Lesson 3)

Lesson 1

Objective: Analyze to find two objects that are *exactly the same* or *not exactly the same*.

Suggested Lesson Structure

- ▪ Fluency Practice   (11 minutes)
- ▪ Application Problem   (6 minutes)
- ▪ Concept Development   (26 minutes)
- ▪ Student Debrief   (7 minutes)
- **Total Time**   **(50 minutes)**

> **NOTES ON FLUENCY PRACTICE:**
>
> Think of fluency as having three goals:
>
> 1. Maintenance (staying sharp on previously learned skills).
> 2. Preparation (targeted practice for the current lesson).
> 3. Anticipation (skills that ensure that students are ready for the in-depth work of upcoming lessons). Example of anticipatory fluency: Students must be secure in counting to 5 long before they can be expected to decompose 5.
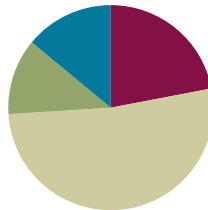
Fluency Practice (11 minutes)

- ▪ Counting Beans and Fingers to 3 **K.CC.4a**   (5 minutes)
- ▪ Show Me Beans **K.CC.4a**   (3 minutes)
- ▪ Counting with the Number Glove to 3 **K.CC.5**   (3 minutes)

Counting Beans and Fingers to 3 (5 minutes)

Materials: (S) Left hand mat (Fluency Template), bag of beans or small counters

Note: This fluency activity was selected in anticipation of future lessons. Although they not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Any time a new manipulative is introduced, provide children an opportunity to freely explore (play) with it for a few moments before asking them to do anything constructive with it. Students at this age are very excited to use new materials. Allowing them to satisfy their curiosity ensures that you have their full attention when it is time to complete the academic task.

    T: Take 1 bean out of your bag, and put it on your mat. Count how many beans are on your mat.

    S: 1.

    T: Take another bean out of your bag, and put it on your mat. Count how many beans are on your mat now.

    S: 1, 2.

    T: Yes. Take another bean out of your bag, and put it on your mat. Count how many beans are on your mat now.

    S: 1, 2, 3.

Lesson 1: Analyze to find two objects that are *exactly the same* or *not exactly the same*.

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T: Yes. Let's touch and count them one at a time like this: 1, 2, 3.

S: 1, 2, 3 (touch each bean).

T: Move 1 bean to the pinky fingernail. How many fingers have a bean?

S: 1.

T: How many fingernails are under the bean?

S: 1.

T: Is that exactly the same number?

S: Yes!
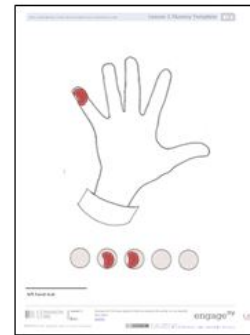
Continue to 3 in this manner. Give time for students to touch and count, but take notice of which students must recount each time.

Show Me Beans (3 minutes)

Materials: (S) Left hand mat (Fluency Template), bag of beans or small counters

Note: This fluency activity was selected in anticipation of future lessons. Although they are not working with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

T: You're getting very good at counting beans and fingers. Now, we'll play a game called Show Me Beans. I'll say a number, and you put that many beans on the fingernails. Remember to start on the pinky, and don't skip any fingers! Ready? Show me 1.

S: (Place 1 bean on the pinky finger.)

T: Quick… Show me 2.

S: (Place another bean on the ring finger.)

T: Show me 1.

MP.2

S: (Remove a bean from the ring finger.)

T: Show me 2.

S: (Place another bean on the ring finger.)

T: Show me 3.

S: (Place another bean on the middle finger.)

Continue changing the number by 1 within 5 as students demonstrate mastery, taking note of which students need to recount.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Since this activity is taught early in the year, the vocabulary might present challenges for some students. Using a 5-frame with a small icon in each corner might aid in focusing students. For example, a frame could have a tree, car, ball, or a triangle in the corner.

★	♥	♣	✳	▲

Counting with the Number Glove to 3 (3 minutes)

Materials: (T) Right-hand glove with the numbers written on the
                    fingertips from 1 on the pinky finger to 5 on the thumb
                    (looks like left hand from students' perspective)
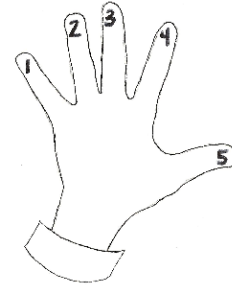
Note: This fluency activity was selected in anticipation of future
lessons. Although they are not working with numbers in this lesson,
students need to develop fluency for upcoming lessons in which
they work with numbers in depth.

*Number Glove Viewed from the
Students' Perspective.*

- T: Watch my number glove and count with me. Ready? (Begin
        with a closed fist, and then show the pinky finger, followed
        by the ring finger, and then the middle finger.)
- S: 1, 2, 3.
- T: Stay here at 3. Let's count back down to 1. Ready? (Put down the middle finger and then
        the ring finger.)
- S: 3, 2, 1.

Continue counting up and down a few more times.

- T: You're ready for something harder! This time we'll count up and down, like a wave. Watch
        my glove, and you'll know just what to do.
- S: 1, 2, 3, 2, 1, 2, 1, 2, 1, 2, 3, 2, 3, 2, 3…

Listen for hesitation as students count, rather than counting along with them.

Application Problem (6 minutes)

Materials: (T) Blue sock

Hold up a blue sock.

- T: Please draw a picture of this sock.

Note: In the Debrief, students look at all the socks drawn. There might be some that are *exactly the same* (or
very, very close), and there are many that are *not exactly the same.* Using the socks that they drew as part of
the Debrief helps to engage all students.

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Lesson 1:   Analyze to find two objects that are *exactly the same* or *not exactly the
              same.*

engage^ny

Concept Development (26 minutes)

Materials: (T) Pairs of socks (or any other pairs of items available) in a variety of patterns, colors, sizes, and lengths in a laundry bag

Call students to the rug. Display the socks, and allow students to look, touch, and talk about them.

T: I just came back from the laundromat, and now I have to match up all of these pairs of socks. Look at these two. (Hold up two blue socks.) These two are **exactly the same** because they are both…? (Signal to elicit the response.)

S: Blue!

T: So, they are both exactly the same color.

T: (Hold up a red knee sock and a red ankle sock.) What color are these two socks?

S: Red.

T: These two are both red, but they are **not exactly the same**. One is big, and the other one is…? (Signal.)

S: Small!

T: So, they are not exactly the same.

T: (Hold up two socks that are similar.) Who can explain why these are not exactly the same?

S: They both have kitties on them, but the kitties on this one are orange, and the kitties on that one are black.

Continue to talk about the attributes of the different socks, guiding students to use the new terms *exactly the same* and *not exactly the same*. Allow for varied interpretations and ambiguity. Encourage students to justify their reasoning. A student might offer a clever analysis, e.g., the two socks of a pair are not exactly the same because one is worn on the left foot and the other on the right.

T: Let's play the Exactly the Same Game. When I call you, pick up one sock. (Call students until everyone has a sock.)

T: When the music begins, I want you to slowly and calmly walk around the room until you find a sock that is exactly the same as yours. When you find the sock, link arms with the person who has it like this (demonstrate) and say, "Our socks are exactly the same!" See if you can get together before the music stops! (Start the music. Stop. Check. Clarify.)

T: Very good. Let's play again. (Have students trade so they each get a new sock.)

Lesson 1:   Analyze to find two objects that are *exactly the same* or *not exactly the same*.

engage^ny   20

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students.

Have students draw a line connecting similar objects using a ruler. Demonstrate the use of a ruler as a straightedge. Walk around the room to support those students who need help with the ruler.

Student Debrief (7 minutes)

Lesson Objective: Analyze to find two objects that are *exactly the same* or *not exactly the same*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Are your shoes **exactly the same**?
- Does the left shoe look exactly the same as the right?
- Let's look at our pictures of the sock. Is this picture the same as that one?
- Why are our pictures **not exactly the same**?
- How can you tell if two things are exactly the same or not exactly the same?

> **NOTES ON MULTIPLE MEANS OF EXPRESSION:**
>
> Open the Student Debrief with *turn and talk* to your neighbor: Allow students to try out their ideas with a partner first before speaking to the whole class.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Homework

Homework at the K–1 level is not a convention in all schools. In this curriculum, homework is an opportunity for additional practice of the content from the day's lesson. The teacher is encouraged, with the support of parents, administrators, and colleagues, to discern the appropriate use of homework for his or her students. Fluency exercises can also be considered as an alternative homework assignment.

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Lesson 1: Analyze to find two objects that are *exactly the same* or *not exactly the same*.

engage^ny 21

Name _____   Date _____

Find animals that are exactly the same. Then, find animals that look like each other but are not exactly the same. Use a ruler to draw a line connecting the animals.

EUREKA MATH™   **Lesson 1:**   Analyze to find two objects that are *exactly the same* or *not exactly the same*.   engage^ny   22

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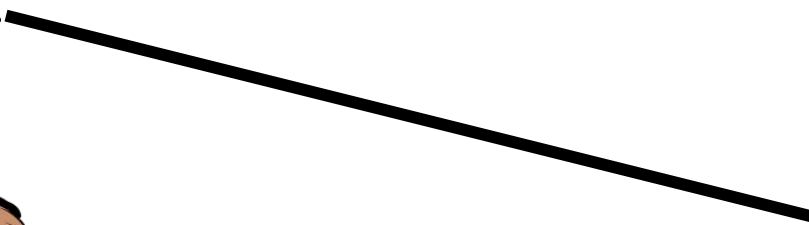
Name _____   Date _____

Tell a partner why these are exactly the same or not exactly the same.

EUREKA MATH™   **Lesson 1:**   Analyze to find two objects that are *exactly the same* or *not exactly the same*.   engage^ny   **23**

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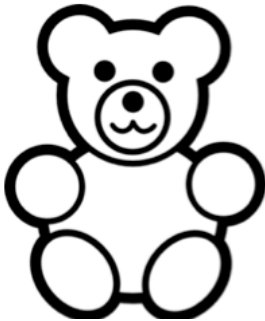
Name _____   Date _____

Color the things that are the same. Color them so that they look like each other.

left hand mat

EUREKA MATH™

Lesson 1:   Analyze to find two objects that are *exactly the same* or *not exactly the same*.

engage^ny

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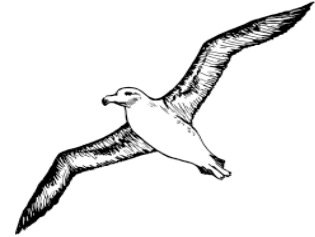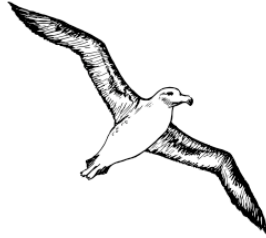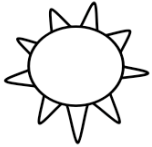
Lesson 2

Objective: Analyze to find two similar objects—*these are the same but…*

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (3 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (10 minutes)
- **Total Time**   **(50 minutes)**
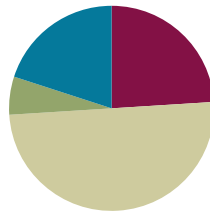
Fluency Practice (12 minutes)

- ▪ Hands Number Line to 3   **K.CC.4a**   (5 minutes)
- ▪ Show Me Fingers to 3   **K.CC.5**   (2 minutes)
- ▪ Finger Flashes to 3   **K.CC.5**   (2 minutes)
- ▪ Rekenrek to 3   **K.CC.5**   (3 minutes)

Hands Number Line to 3 (5 minutes)

Materials: (S) Left hand mat (Lesson 1 Fluency Template), bag of beans or small counters

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

- T: How many hands do you see on your mat?
- S: 1.
- T: How many real hands do you have?
- S: 2.
- T: Put 1 of your real hands down on the mat so that it matches the picture of the hand on your mat exactly. Make sure to line up all of your fingers.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Enlarge a copy of the left hand mat, and hang it in the room where students can see it and reflect on how they have used it. Make a few copies so that children can use them at a center where they can practice counting.
>
> For learners who like to touch and feel, or for students with fine motor challenges, consider finding inexpensive gloves and letting students put the beans on the gloves.

T: Take 1 bean out of your bag, and put it on the pinky fingernail on your mat. How many fingers have a bean?

S: 1.

T: Which finger is it?

S: Pinky.

T: Show me your real pinky finger. This is the finger we'll start counting with. (Demonstrate.)

S: 1. (Hold up the pinky finger of the left hand, palm facing away from students.)

T: Put another bean on the very next finger. How many fingers have beans on them now?

S: 2.

MP.5

T: Show me which fingers have beans. Use your mat to help you. (Circulate and support.) Let's count on fingers from 1 to 2. Ready?

S: 1 (hold up the pinky finger of the left hand), 2 (hold up pinky and ring finger, palm out).

T: Put another bean on the very next finger. How many fingers have beans on them now?

S: 3.

T: Show me which fingers have beans. Use your mat to help you. (Circulate and support.) Let's count on fingers from 1 to 3. Ready?

S: 1 (hold up the pinky finger of the left hand), 2 (hold up pinky and ring finger, palm out), 3 (hold up pinky, ring finger, and middle finger, palm out).

T: Very good! See if you can do it without looking at the mat. Close it up (show closed fist). Ready?

S: 1, 2, 3 (show fingers).

T: Stay here at 3. Now, count back down to 1. Ready?

S: 3, 2, 1.

Continue practicing so that students get more comfortable with this way of finger counting.

Show Me Fingers to 3 (2 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

T: Let's play Show Me Fingers. I'll say a number, and you show me that many fingers, the same way as before. Remember to start on the pinky, and don't skip any fingers! Ready? Show me 1.

S: (Hold up the pinky finger.)

T: Quick… show me 2.

S: (Hold up the pinky finger and the ring finger.)

A possible sequence is 1, 2, 1, 2, 3, 2, 3, 2, 3, 2, 1. As students approach mastery, say numbers randomly.

Finger Flashes to 3 (2 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

> T: This time, I'll show you my fingers, and you say how many you see. Ready?

Use a similar sequence as before. Realize that the teacher needs to show the reverse, starting with the pinky finger of the right hand. It is important that students see the number line progressing from left to right from one finger to the next.

Student View

Rekenrek to 3 (3 minutes)

Materials: (T) 20-bead Rekenrek

20-Bead Rekenrek

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

> T: Let's practice counting with the Rekenrek. (Show students the 20-bead Rekenrek with the side panel attached.) Say how many you see. (Slide the red beads students are counting completely to one side.)

A suggested sequence is counting up, counting down, then in short sequences: 1, 2, 1, 2, 3, 2, 3, etc.

Application Problem (3 minutes)

Jeremy has 3 marbles. Draw his marbles.

Note: Students can debrief this problem by comparing their drawing to that of their partner. The sooner they see that there are different ways to draw solutions, the better. Ask, "How are our drawings exactly the same? How are our drawings not exactly the same?"

Concept Development (25 minutes)

Materials: (T) Pairs of similar items that are different in one aspect (e.g., two tennis balls, one white and one yellow; two identical cups, one with a straw and one empty; two squares, one turned to be a kite and one parallel to the floor; two identical pencil boxes, each labeled with a different student's name; two identical pencils, one new and one used) (S) Two of the same flowers (or leaves, twigs, etc.)

T: What am I holding?

S: Balls. → 2 things. → 2 balls. → A yellow ball and a white ball. → 2 tennis balls.

T: Are they exactly the same, or are they almost the same?

S: They are almost the same.

T: They are **the same but**…

S: One is yellow, and one is white. → They are the same, but they are different colors.
     → One is fuzzier than the other one.

T: So many good ideas! Repeat one of them after me.
     They are the same, but one is yellow, and one is white.

S: They are the same, but one is yellow, and one is white.

T: What am I holding now?

S: Pencils. → 2 things. → 2 pencils. → A short pencil and a long pencil.

T: They are the same but…

S: One is shorter, and one is longer. → They are the same, but one is sharpened, and one is not sharpened.
     → One is new, and one is not.

T: Repeat one of your ideas after me. They are the same, but one is shorter, and one is longer.

S: They are the same, but one is shorter, and one is longer.

T: What am I holding now?

S: Cups. → 2 things. → 2 cups. → 2 plastic cups.

T: Are they exactly the same, or are they not exactly the same?

S: They are exactly the same.

> **NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:**
>
> Have students bring an object to add to the materials from the lesson (e.g., balls, cups, pencils). Set up an area where children can explore those items and reflect back on the lesson.
>
> After a day or two, consider adding some other items (e.g., colored styrofoam egg cartons, large and small books, colored buttons). Children can apply their learning about *exactly the same but…* to the new pieces.
>
> To further extend this activity, consider making some colored geometric shapes (or attribute blocks) in varied sizes so students can tell how they are *exactly the same but different.*

Repeat the process with other pairs. Then, have students talk to their partners using their words, "These are the same, but this one is _____, and this one is _____." Once they have finished with one pair of items, have them try with another.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (10 minutes)

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What were your favorite objects?
- Who can make a sentence about the cats using *they are* **the same but**…? (Repeat with each of the animals.)
- How could we change one of the cats to make it exactly the same as the other? (Repeat with each of the animals.)

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Cut out the eight pictures on the Problem Set, and let students who have coordination challenges match them by pairing.

Name _____   Date _____

Use your ruler to draw a line between two objects that match.
Use your words. "These are the same, but this one is _____, and this one is _____."

Name _____   Date _____

Use your ruler to draw a line between two objects that match.
Use your words. "These are the same, but this one is _____, and this
one is _____."
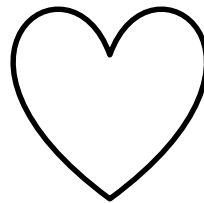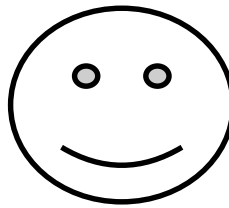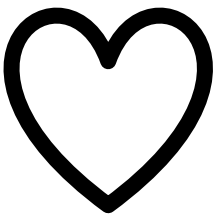
Name _____   Date _____

Draw a line between two objects that match. Use your words. "These are the same, but this one is _____, and this one is _____."
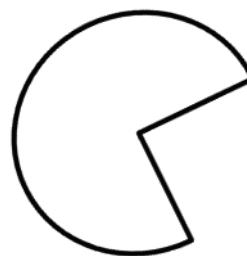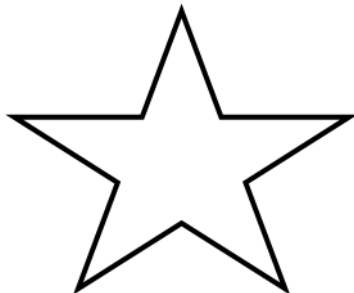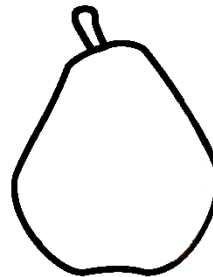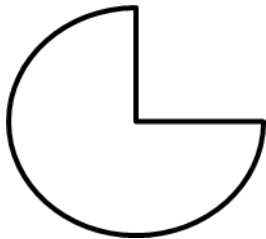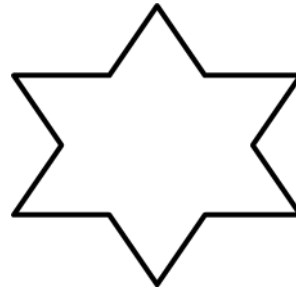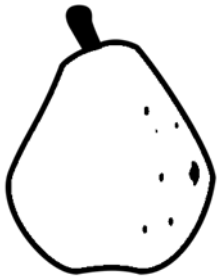
Lesson 3

Objective: Classify to find two objects that share a visual pattern, color, and use.

Suggested Lesson Structure

■ Fluency Practice   (11 minutes)
■ Application Problem   (4 minutes)
■ Concept Development   (30 minutes)
■ Student Debrief   (5 minutes)
   Total Time   **(50 minutes)**
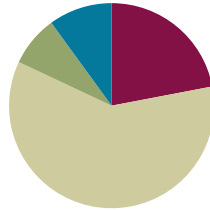
Fluency Practice (11 minutes)

▪ Counting Beans and Fingers to 5 **K.CC.4a**   (5 minutes)
▪ Show Me Beans to 5 **K.CC.4a**   (3 minutes)
▪ Counting with the Number Glove to 5 **K.CC.5**   (3 minutes)

Counting Beans and Fingers to 5 (5 minutes)

Materials: (S) Left hand mat (Lesson 1 Fluency Template), bag of beans or small counters

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

Conduct the activity as outlined in Lesson 1.

Continue to 5, moving from pinky finger to thumb. Give time for students to touch and count, but take notice of which students must recount each time another bean is added.

Show Me Beans to 5 (3 minutes)

Materials: (S) Left hand mat (Lesson 1 Fluency Template), bag of beans or small counters

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

Conduct the activity as outlined in Lesson 1.

Continue the wave sequence to 5 and then randomly as students demonstrate mastery. Take notice of which students need to recount.

EUREKA MATH™   **Lesson 3:**   Classify to find two objects that share a visual pattern, color, and use.   engage^ny   34

Counting with the Number Glove to 5 (3 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Although they do not work with numbers in this lesson, students need to develop fluency for upcoming lessons in which they work with numbers in depth.

Conduct the activity as outlined in Lesson 1.

A recommended sequence is 1, 2, 3, 2, 3, 4, 3, 4, 5, 4… Listen for hesitation as students count, rather than counting along with them. Return to sequences within 3 if they have difficulty, and then build up to 5.

Application Problem (4 minutes)

Draw two circles that are the same but a different color.

Note: Linking drawing and math is important to instill in students from the beginning of their formal math learning. By drawing circles, they are representing their understanding and learning how drawing can be a tool to aid in that understanding.

Concept Development (30 minutes)

Part 1

Materials: (S) Sets of plates, cups, bowls, etc., in a variety of patterns; bin or basket; stuffed animals

Plastic dinnerware sets can be purchased, or the teacher can create her own from disposable products with a variety of colors and patterns drawn with permanent marker. Although time-consuming, a teacher-created set allows for greater control of the complexities of the concepts and yield richer discussion. For example, this plate has blue stripes, and this bowl has red stripes. Even though they are different colors, they match because the pattern is the same.

Invite students to the rug to sit in a circle. Have them pass the objects around and talk about them. Guide them to discuss and compare attributes of each. Collect the items after discussion.

MP.7

> T: Let's have a teddy bear tea party! This is Teddy's plate. (Place a plate in front of the stuffed animal.) What do we see on Teddy's plate?
>
> S: Stripes.
>
> T: Yes, what color are the stripes?
>
> S: Blue.
>
> T: Good. Teddy wants a cup that has the same striped pattern. Let's find a cup that **matches** Teddy's plate.
>
> S: The one with red stripes!

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> Children who are visually impaired or who tend to be more kinesthetic learners may benefit from sets that have texture. For example, glue the rim of the cup, and then dip it in sand. The plate could be glued around the edges and sprinkled with sand. Another option is to glue rickrack around a cup and a plate to give it texture.

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Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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T: Yes! Are they the same color?

S: No.

T: How are they a match?

S: They both have stripes.

MP.7 Continue with other patterns and colors until students are able to consistently identify a match. Consider showing a few non-examples, and have students determine why the objects do not match.

Distribute a bin and stuffed animals to each group or table. Have them set the table so that each stuffed animal (not each table) has a matching set of dinnerware. Place the items back into the bin, and rotate so that students can practice with several different sets. Circulate and foster dialogue about the attributes of the objects.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Continue to stress the importance of clear, concise language from students. Let students share their answers with a partner first and then share with the class. Watch for students who have expressive language issues, or are English language learners, and help them along.

Part 2

Materials: (S) Bags of objects or pictures of objects that are used together

T: How are these used together? (Hold up a plate and a fork from the previous activity.)

S: To eat with.

T: Yes. Let's say it in a sentence like this: "I use a fork and plate for eating." Ready?

S: I use a fork and plate for eating.

T: Raise your hand when you can say the sentence about these two items. (Show a paper and pencil.) Ready?

S: I use a pencil and paper for writing.

T: Very good. When you go back to your seat, you'll get a bag. First, make a match. Then, tell how they are used together. Remember to say the whole sentence, just like we practiced.

Circulate to ensure that students are using the sentence frame to describe each match. Rotate bags of objects among tables or groups so that students have the opportunity to see a variety of items.

Problem Set (7 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

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Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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Student Debrief (5 minutes)

Lesson Objective: Classify to find two objects that share a visual pattern, color, and use.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What are some ways that we made a **match** today?
- How can you tell if two items **match**?
- Can you think of things at home that are used together?
- What are some things at home that are not used together?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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Name _____ Date _____

Draw a line between the objects that have the same pattern. Talk with a neighbor about the objects that match.

Lesson 3: Classify to find two objects that share a visual pattern, color, and use.

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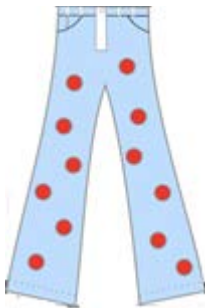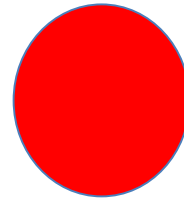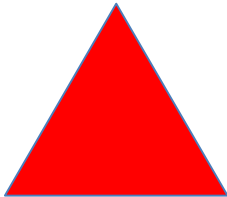
Circle the object that would be used together with the object on the left.
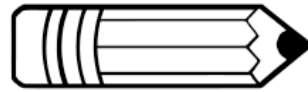
Name _____   Date _____

Draw a connecting line between shapes with the same pattern.

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Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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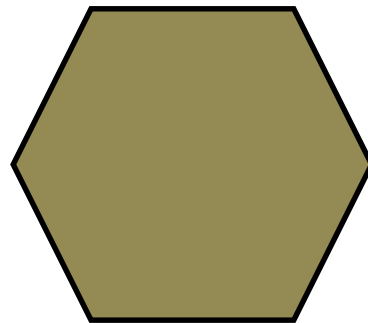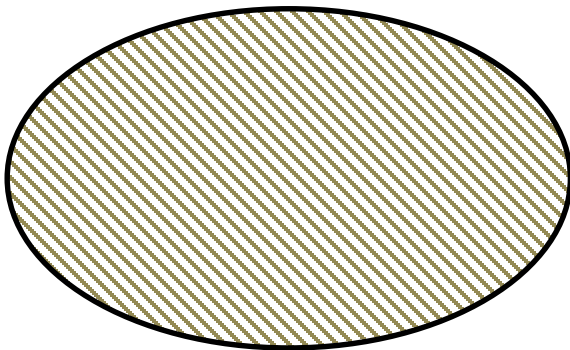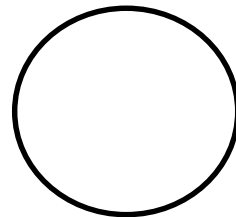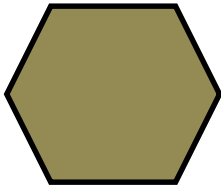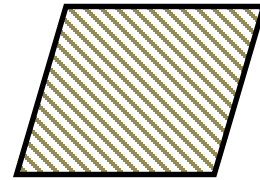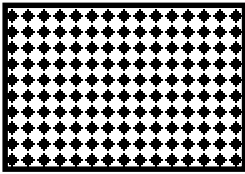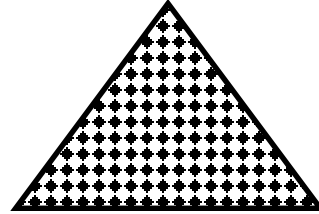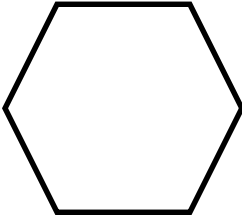
Circle the things that are used together. Explain your choice.

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Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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Name _____   Date _____

Draw something that you would use with each. Tell why.
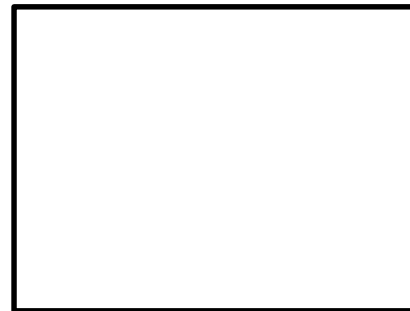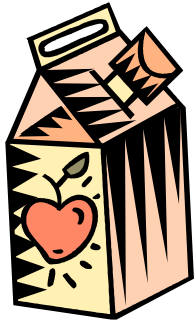
Make a picture of 2 things you use together. Tell why.

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Lesson 3:   Classify to find two objects that share a visual pattern, color, and use.

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Topic B
Classify to Make Categories and Count

K.CC.4ab, K.MD.3

Focus Standards:	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.MD.3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)
Instructional Days:	3	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

In Topic A, students critically consider objects, focusing on their attributes and use. Topic B has students using this knowledge to classify groups of objects into two given categories (**K.MD.3**). In Lesson 5, they classify objects into three pre-defined categories, count the objects in each category, and understand that the last number said when counting the objects in each category indicates the total (**K.CC.4b**). Students sort by count in Lesson 6, determining which sets are twos, which are threes, and which are fours (**K.MD.3**). For example, "There are two birds, and there are two flowers. There are three squirrels, three clouds, and three children. There are four wheels on the car and four trees."

A Teaching Sequence Toward Mastery of Classify to Make Categories and Count

Objective 1: Classify items into two pre-determined categories.
(Lesson 4)

Objective 2: Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.
(Lesson 5)

Objective 3: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.
(Lesson 6)

Lesson 4

Objective: Classify items into two pre-determined categories.

Suggested Lesson Structure

- ■ Fluency Practice　　　　(12 minutes)
- ■ Application Problem　　　(6 minutes)
- ■ Concept Development　　(26 minutes)
- ■ Student Debrief　　　　(6 minutes)
- **Total Time**　　　　　　　**(50 minutes)**
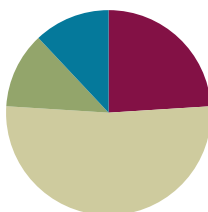
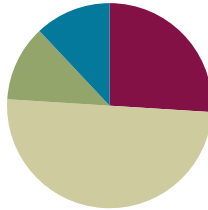### Fluency Practice (12 minutes)

- ▪ Hands Number Line to 5 **K.CC.4a**　　(5 minutes)
- ▪ Show Me Fingers to 5 **K.CC.5**　　(2 minutes)
- ▪ Finger Flashes to 5 **K.CC.5**　　(2 minutes)
- ▪ Rekenrek to 5 **K.CC.5**　　(3 minutes)

Hands Number Line to 5 (5 minutes)

Materials:　(S) Left hand mat (Lesson 1 Fluency Template), bag of beans or small counters

Conduct the activity as outlined in Lesson 2.

Continue the process to 5. Then, guide students to recognize the group of 5 on one hand. Ask questions such as, "Are you showing me all of your fingers on one hand? How many is that? So then, how many fingers do you have on the other hand?"

Show Me Fingers to 5 (2 minutes)

Conduct the activity as outlined in Lesson 2.

A possible sequence is 1, 2, 3, 2, 3, 4, 3, 4, 5, 4, 3. As students approach mastery, say numbers randomly. Focus especially on 5. The goal is to have students just open one hand to show 5 without having to count.

Finger Flashes to 5 (2 minutes)

Conduct the activity as outlined in Lesson 2.

Concentrate heavily on 5. Use a similar sequence, but interject 5 frequently and repetitiously. Students will be delighted at their ability to instantly recognize the group of 5.

Again, be conscious of the students' viewing perspective. Begin with the pinky finger of the right hand, and end with the thumb at 5 so that students see the number line progressing from left to right.

Rekenrek to 5 (3 minutes)

Conduct the activity as outlined in Lesson 2.

A suggested sequence is counting up, counting down, and then in short sequences: 1, 2, 3, 2, 3, 4, 3, 4, 5, 4, 3, etc.

Application Problem (6 minutes)

Color these pictures so that they are exactly the same. Tell a friend how you know that they are exactly the same.

Note: Copy two of the same pictures (bears, flowers, cups, etc.) side by side on one piece of paper. Instruct students to color each picture so they look exactly like each other.

Concept Development (26 minutes)

Materials: (T) Assortment of classroom toys with a wide range of attributes and obvious differences to facilitate sorting, two plastic trays

> T: Watch how I **sort** these toys into two groups—big and small. (Place one big toy on one tray and one small toy on the other.) Point to the tray that has the big toy.
> S: (Point.)
> T: Yes. Now, point to the tray that has the small toy.
> S: (Point.)

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide students who catch on quickly with a collection of objects to sort. Have the other students in the class try to guess how the objects were sorted.

T: Do you see any other toys that belong in the small toys group?

S: (Place a small toy on the tray.)

T: How can you tell that it belongs on that tray?

S: Because it is small, like the rest of the toys in that group.

Continue until remaining toys have been sorted. Also, show a few non-examples, and discuss why they do not belong.

Next, sort the same toys into two groups, one with soft toys and one with hard toys. See if the students can figure out the attribute with a partner.

T: (Remove all of the toys from the trays, and display them in the center of the rug.) Can you think of other ways we could sort these toys?

Sort again according to students' suggestions.

T: Now, let's play a game where we sort *ourselves*! If your shoes have laces, please stand near the window. If your shoes do not have laces, please stand near the door. Everyone, point to the laces group.

S: (Point.)

T: Now, point to the no-laces group.

S: (Point.)

T: Come back to your seats. This time, I will sort you into two groups another way. (Call students to come and stand in a teacher-selected group without telling them how they have been grouped.) What is the same about all of the students in this group?

S: They are all wearing blue uniform shirts.

T: That's right, and this group?

S: White shirts.

T: What are some other ways we could sort ourselves?

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students glue pictures to show where to keep each item.

**NOTES ON
MULTIPLE MEANS
OF REPRESENTATION:**

Make a chart of this Problem Set, and have students think of what they put into their book bag or trunk.

Some responses might be a lunch, snack, game, or baseball mitt.

Write the words or draw pictures to illustrate their answers. Leave the chart up for a few days in case they think of other ideas to add.

Student Debrief (6 minutes)

Lesson Objective: Classify items into two pre-determined categories.

Have students bring their Problem Sets to the carpet and discuss with a partner how they decided to sort the pictures.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- ▪ What is the new math word we used today?
- ▪ What does it mean to **sort** into groups?
- ▪ Can you think of other times when it is important to sort things? (Elicit real-life examples from home or school.)
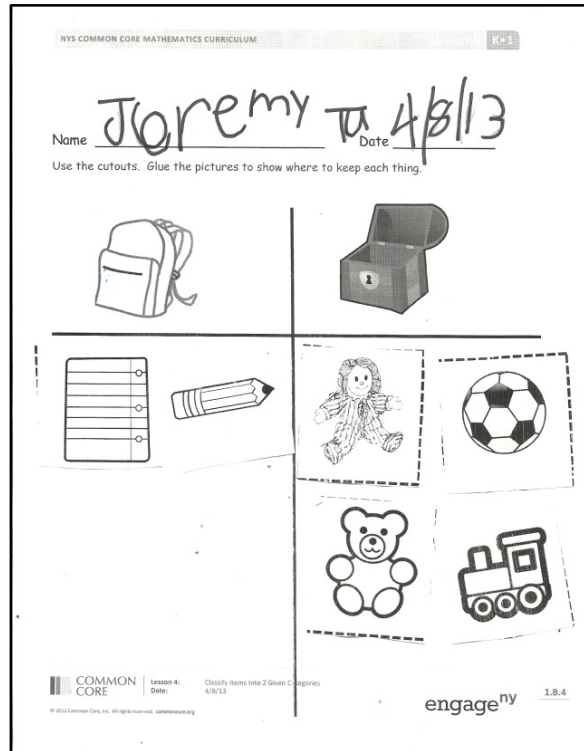
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____   Date _____

Use the cutouts. Glue the pictures to show where to keep each thing.

Lesson 4:   Classify items into two pre-determined categories.   engage^ny

Name _____   Date _____

Cutouts for the Problem Set
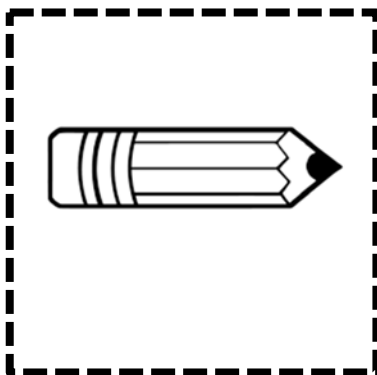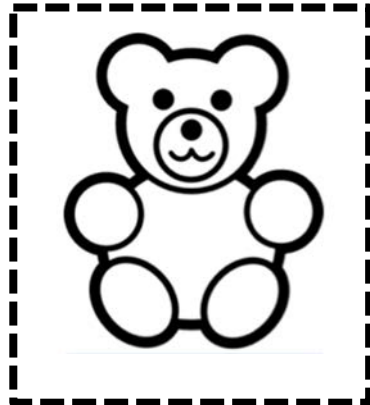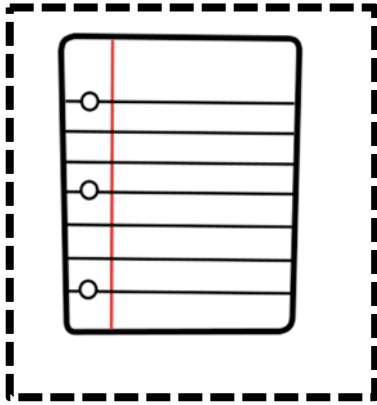
Name _____   Date _____

Circle the animals that belong to one group, and underline the animals that belong to the other group.

What is the same about the animals in each group? (Discuss with a friend.)

Name _____   Date _____

Circle the things that belong to one group, and underline the things that belong to the other group. Tell an adult why the items in each group belong together.
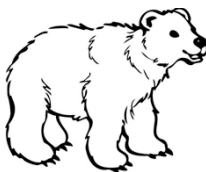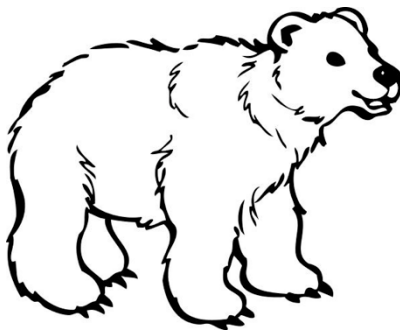
Lesson 5

Objective: Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

Suggested Lesson Structure

■ Fluency Practice	(13 minutes)	
■ Application Problem	(6 minutes)	
■ Concept Development	(25 minutes)	
■ Student Debrief	(6 minutes)	
Total Time	**(50 minutes)**	

Fluency Practice (13 minutes)

- Green Light, Red Light **K.CC.2**   (3 minutes)
- Pop Up Number **K.CC.4a**   (5 minutes)
- Birthday Candles **K.CC.4a**   (5 minutes)

Green Light, Red Light (3 minutes)

On the board, draw a green dot and write 1 underneath it, and then draw a red dot and write 3 underneath it. Explain to students that they should start and stop counting using the number indicated by the color code.

T: Look at your numbers (point to the number 1 written below the green dot and 3 below the red dot). Think! Ready? Green light!

S: 1, 2, 3.

T: Very good! (Erase numbers 1 and 3, and write the new numbers.) Here are the new numbers (green is 1, red is 5). Look. Think! Ready? Green light!

S: 1, 2, 3, 4, 5.

A recommended sequence is (2, 3); (2, 3, 4); (3, 4); (3, 4, 5); (3, 2, 1); (5, 4, 3, 2, 1); (5, 4); (5, 4, 3); (4, 3); (4, 3, 2).

Pop Up Number (5 minutes)

T: Come and sit in a circle on the rug. We're going to play Pop Up Number! The Pop Up Number is 3. What is the number?

S: 3.

T: We'll count around the circle to 5. If you say the Pop Up Number, you have to…

S: Pop up! (Stand up.)

T: Let's begin. 1.

S: 2.

S: 3. (Stands up.)

S: 4.

S: 5.

The next student begins again at 1. Continue until several or all students are standing. For variation, try counting down from 5.

Birthday Candles (5 minutes)

Materials: (S) 1 die, birthday cake (Lesson 5 Fluency Template), crayons

Note: At the end of each person's turn, the number of candles on the cake should match the die. The second player does not add the total rolled to the first player's candles but simply adjusts the candles to match his roll. Circulate to see which students must recount each time and which ones simply take off or put on more candles to represent the new number.

Assign partners, and remind students to take turns. If needed, model how to play the game with one student beforehand.

MP.5

1.   Roll the die.
2.   Touch and count the dots.
3.   Put that many "candles" (crayons) on the birthday cake.
4.   Without removing the crayons, the next person rolls the die and then adjusts the "candles" to match the roll.

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> To differentiate, cover the 6-dot side of the die with a small piece of mailing label. Leave it blank to indicate 0, or draw a different number of dots. Similarly, provide a pair of dice for students who are ready to work with larger numbers.

Application Problem (6 minutes)

With a partner, talk about how we could sort the class into two groups. For example, students who are wearing pants and students who are wearing shorts.

Note: Share a few partner discussions with the whole class. Use the Application Problem to continue to link the previous day's lesson with today's lesson.

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Lesson 5:   Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

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Concept Development (25 minutes)

Materials: (T) Large pictures for the board depicting the sun, raindrops, and snowflakes; smaller pictures in an opaque bag or envelope depicting items corresponding to each of the weather types

Materials Note: Sunny-weather items could be sunglasses, sun hats, sandals, bathing suit, popsicles, or beach buckets and shovels. Rainy-weather items might include umbrellas, raincoats, boots, rain hats, puddles, or soup. Hats, scarves, boots, snow shovels, mittens, skis, or hot cocoa could be used for winter-weather items. To stimulate discussion, consider including some ambiguous items such as popcorn, books, or ice cream. There should be at least five of each type, but the numbers in each category need not be equal.

T: Do you remember some of the ways you sorted items yesterday?

S: By their size. → By their shape. → By their color.

T: Today, we are going to do another sorting activity, but this time we are going to look for three different groups to sort things into. What do you see on the board?

S: The sun. → Some raindrops! → I see a snowflake.

T: What are some things you like to do on sunny days? (Allow a brief time for students to share ideas.)

T: We're going to play a game called Where Do I Belong? I will call one of you up to choose a picture from this bag while the rest of us whisper-count together to 10. (The counting keeps the lesson moving along and speeds the students' decision times.) You decide if your picture belongs with the sun, the rain, or the snow. After you tell us why you made that choice, we will put it on the board underneath its weather type.

S: (Take turns choosing pictures from the teacher's bag and categorizing them.)

T: (Assist the students in placing the pictures in the appropriate column underneath the weather symbols on the board. Continue until all of the pictures have been used.)

T: Great job! I wonder how many sunny pictures we found? Let's count them. (Number each picture as it is counted.) How many sunny pictures?

S: 5.

T: What number did I write beside the last picture?

S: 5.

Repeat with the rainy and snowy categories. As an extension, students might talk about which category had the most pictures. Lead them to notice that the last number they counted in each category corresponds to the largest written numeral in that category.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Students who would benefit from an extension of this lesson could play the role of teacher. The new teacher puts pictures in the appropriate column, but one is incorrect.
>
> The teacher asks how many are in the column, and then asks if the pictures are correct. "Do you agree with me?" Have children explain their reasoning.

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Lesson 5:   Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

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Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

On this Problem Set students draw a line with a ruler to show where each thing belongs. For homework, provide glue sticks and safety scissors for those students who might not have these items at home.

Student Debrief (6 minutes)

Lesson Objective: Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you decide where to put your picture?
- Why didn't it fit into one of the other groups?
- Are there some things at home that you would have put into one of the weather groups?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.


NOTES ON INFORMAL ASSESSMENT OPPORTUNITY:

- This Exit Ticket would provide an excellent opportunity for an informal assessment.
- Circulate to interview students for a quick snapshot of individual student's reasoning. Responses may vary, as there is more than one correct response in each row.
- Consider using this Exit Ticket to open tomorrow's lesson.

Name _____   Date _____

Draw a line with your ruler to show where each thing belongs.
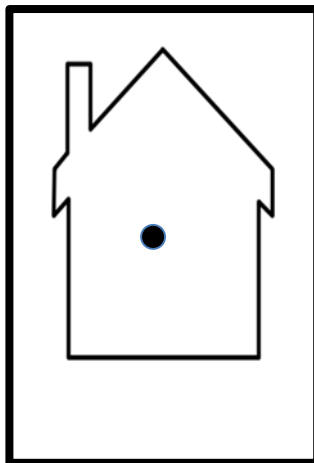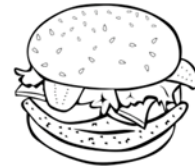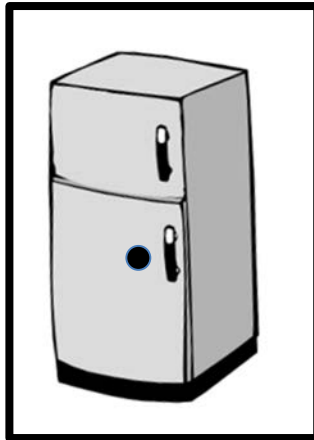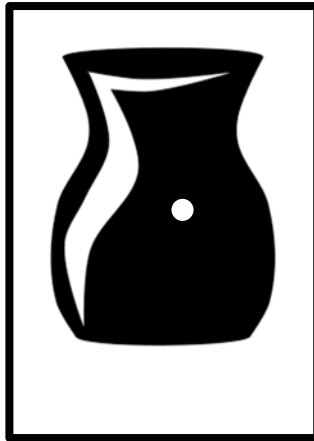
Name _____   Date _____

Cross out what doesn't belong. How many are left?

Cross out what doesn't belong. How many are left?

Cross out what doesn't belong. How many are left?
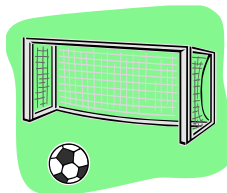
Name _____   Date _____

Cut and glue where each belongs. Write how many.

Lesson 5:   Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

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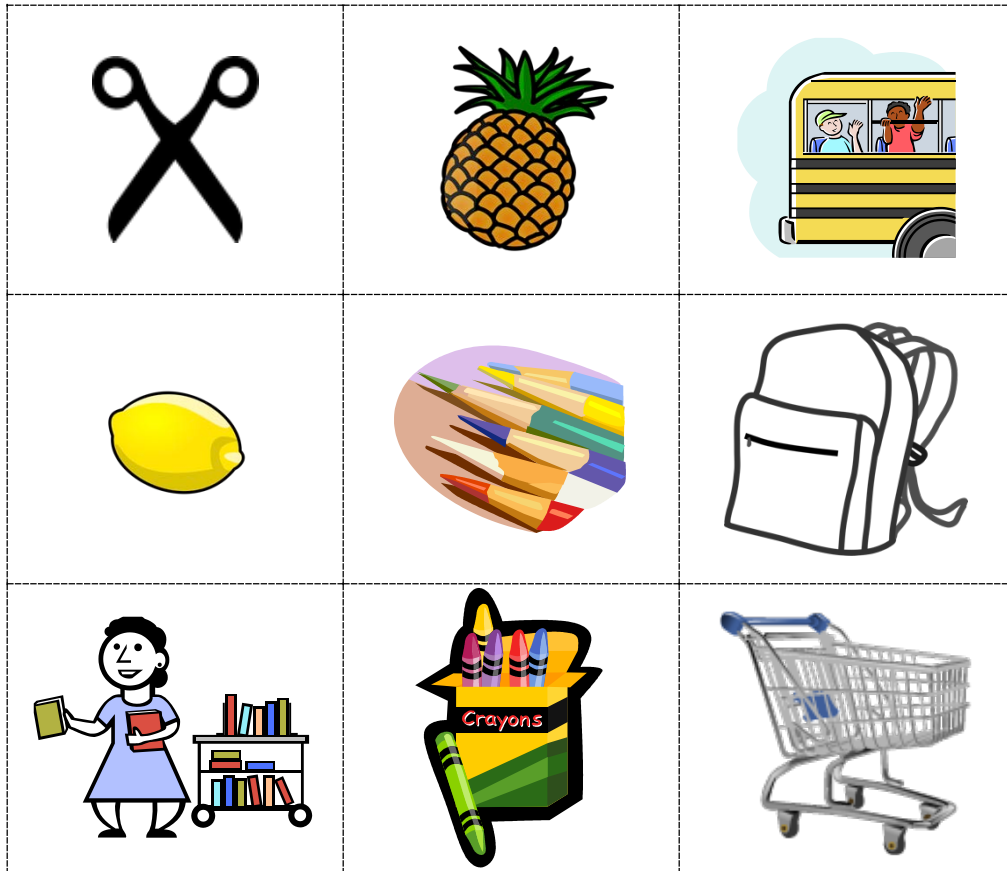
Library

Number: _____

School

Number: _____

Grocery Store

Number: _____

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Lesson 5: Classify items into three categories, determine the count in each, and reason about how the last number named determines the total.

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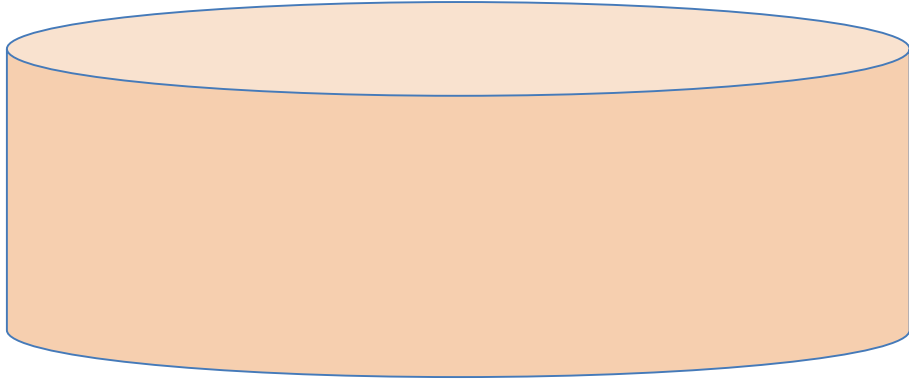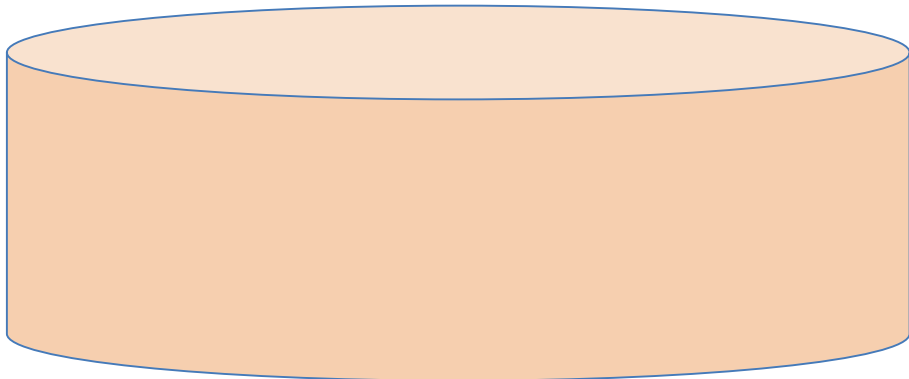
The Birthday Cake

The Birthday Cake

birthday cake

Lesson 6

Objective: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (6 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (7 minutes)
 Total Time   **(50 minutes)**
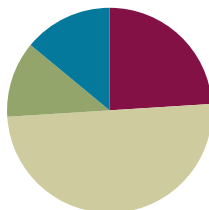
Fluency Practice (12 minutes)

▪ Show Me Another Way **K.CC.4a**   (4 minutes)
▪ Happy Counting Within 5 **K.CC.2**   (3 minutes)
▪ Counting Around the Circle to 5 **K.CC.4a**   (5 minutes)

Show Me Another Way (4 minutes)

T: Remember how you learned to count on your fingers? (Provide a brief demonstration from previous lessons' finger-counting exercises as needed.) That's called counting the Math Way. First, I'll ask you to show me fingers the Math Way. Then, I'll ask you to show me the number another way. Show me 2.

S: (Hold up the pinky and ring fingers of the left hand.)

T: Now, show me another way to make 2.

S: (Responses vary.)

T: How we can be sure that we're still showing 2?

S: Count.

Have students try all of the different combinations. It may be necessary to indicate to students that they may use both hands to show the number. Continue the process to 5.

Happy Counting Within 5 (3 minutes)

T: Let's play Happy Counting! When I hold my hand like this (point two fingers up), I want you to count up. If I put my hand like this (point two fingers down), I want you to count down. If I do this (close fist), that means stop, but try hard to remember the last number you said. Ready? (Point fingers up.)

S/T: 1, 2, 3, 4, 5. (Close fist; point fingers up.) 4, 3, 2, 1. (Close fist; point fingers up.) 2, 3. (Close fist; point fingers down.) 2, 1. (Close fist; point fingers up.) 2, 3, 4, 5, ….

Counting Around the Circle to 5 (5 minutes)

T: Come and stand on the edges of the rug. We're going to play a fast counting game. We'll count around the circle. Each person says the next two numbers. So, if I say 1, 2, what would you say?

S: 3, 4.

T: Right. Now, here's a change. The next person only says 5, and since we're only counting to 5, they will also sit down. Should you be sad if you have to sit?

S: No.

T: By the end of the game everyone will be sitting down anyway. It's part of the fun! So, let's get started.

S: 1, 2.

S: 3, 4.

S: 5. (Sits down.)

S: 1, 2.

S: 3, 4.

S: 5. (Sits down.)

Continue playing until all students are sitting down. A variation is to count down, and have the students sit when they say 1.

Application Problem (6 minutes)

Draw one thing that you would wear in the summer. Draw one thing that you would wear in the winter. Tell a friend how you chose those items.

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Lesson 6: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.

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Concept Development (25 minutes)

Materials: (T) 3 sheets of chart paper positioned in a row on the bottom of the wall decorated to look like treasure chests—one labeled with a large 2, one with a large 3, and one with large 4; several bundled sets of classroom objects in groups of 2, 3, and 4 stored in a large opaque bag

Suggested items: a bundle of 3 pencils, a baggie of 2 erasers, a tower of 4 linking cubes, etc. The teacher may want to add outliers such as a tower of 5 linking cubes or something in a quantity of 1 to stimulate discussion and encourage precision.

T: We are going on a treasure hunt! I have a lot of treasures in my bag. When we find the treasures, we are going to sort them into groups. The numbers of our groups are on our treasure chest posters. What numbers do you see on the treasure chests?

S: 2, 3, 4.

T: (Call on a volunteer.) Mary, would you please come up to choose a treasure from our bag?

S: (Selects one set of objects from the bag, and displays it to the class.)

T: What treasure chest should we put this into?

S: 3.

T: How did you decide?

S: I counted 3 pencils in the group.

T: Thumbs up if you agree with Mary! (Check for understanding.) Please put it on the floor under our 3 treasure chest. (Repeat with other volunteers with remaining sets.)

T: How many sets of things did we find to put into our 2 treasure chest?

S: (Count the sets in the 2 category.)

T: What is special about the last number you said when you were counting the sets?

S: It tells the number of sets!

T: (Repeat counting exercise with 3 and 4 categories.)

T: Did we have any sets that didn't fit into one of our treasure chests?

S: Yes, the big linking cube tower.

T: Why?

S: Because there were too many cubes.

T: You are good treasure hunters! Let's do some more counting on our Problem Set.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

After selecting the treasure, the student could choose the next volunteer and then guide the class discussion about categorizing the next set.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Have each student draw a treasure chest, write a number on it, and draw something that would belong inside.

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Lesson 6:   Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.

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Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Color the number boxes at the top of the Problem Set together. Then, guide students to color groups of objects the same color according to their count. Watch for students who mistakenly color groups of similar objects the same color rather than coloring according to the count of each object.

Student Debrief (7 minutes)

Lesson Objective: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Why did you color both sets of triangles blue but the sets of happy faces different colors?
- With a partner, point to all the objects that are in groups of 2.
- Look around our room. Can you find anything in a group of 2? Group of 3? Group of 4?
- Can you think of something at home that would fit into one of those groups?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____   Date _____

Look at the shelf. Color the things in groups of 2 red. Color the things in groups of 3 blue. Color the things in groups of 4 orange.

| 2 Red | 3 Blue | 4 Orange |
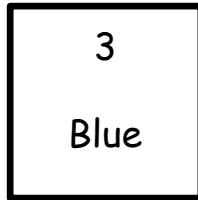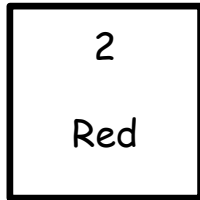
Name _____   Date _____

Match the groups that have the same number.
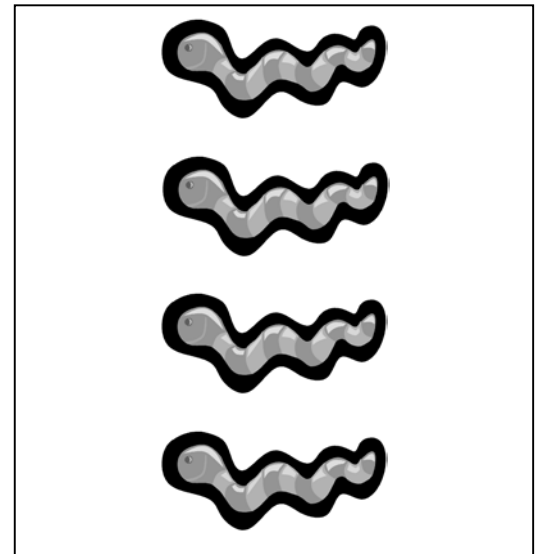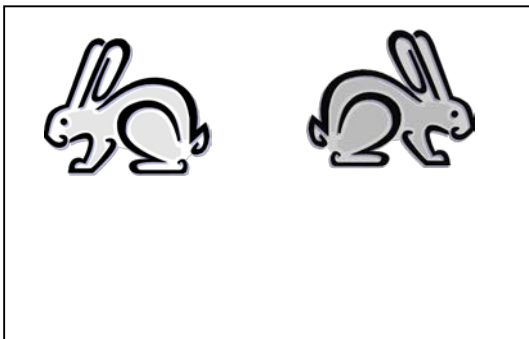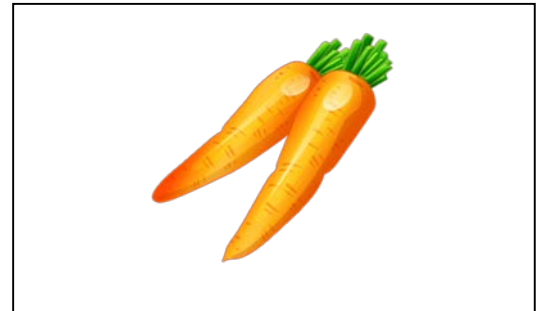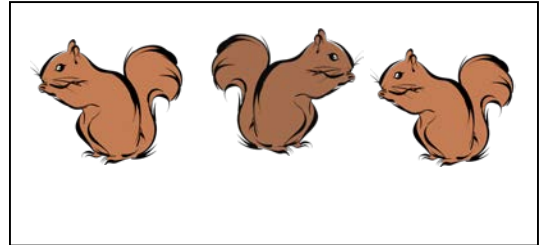
Name _____ Date _____

Draw lines to put the treasures in the boxes.

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Lesson 6: Sort categories by count. Identify categories with 2, 3, and 4 within a given scenario.

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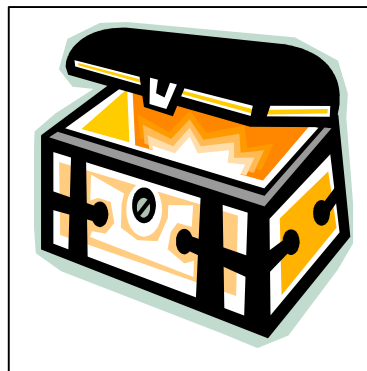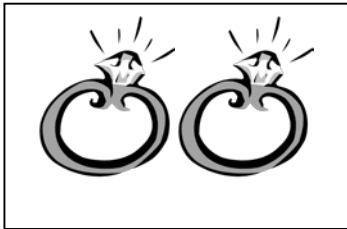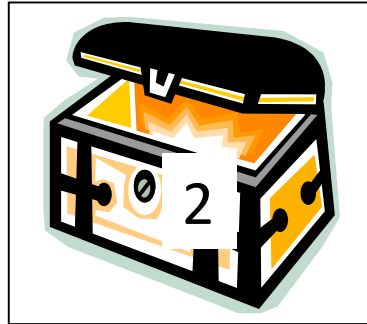
Topic C

Numbers to 5 in Different Configurations, Math Drawings, and Expressions

K.CC.4ab, K.CC.5, K.OA.3, K.MD.3

Focus Standards:	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
	K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
Instructional Days:	5	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

Building on the knowledge of Topic B, where they practiced one-to-one counting of objects in a category, students transition to answer *how many* questions of objects and dots in linear, array, circular, and scattered configurations. Topic C begins with counting groups of objects in horizontal rows and vertical columns to 5. To reinforce the understanding that the last number name said tells the number of objects counted, students sort groups of objects by count and match the groups to digit cards.

Lesson 8 continues with counting to 5 and focuses on the idea that the number of objects counted stays the same regardless of their arrangement or the order in which they were counted. Students count 4 in linear and array formations and show the number 4 on their fingers in different ways.

 or

As they begin to understand that numbers can be represented in different ways, students advance to decomposition of numbers 3, 4, and 5. They are asked to find hidden partners in 3, 4, and 5 (representing these numbers as a combination of two smaller numbers). For example, "I found 3 and 2 and 4 and 1 hiding inside my 5." This concept is extended in Lesson 10 with the more difficult counting configurations, circular and scattered. Finally, the topic closes with the decomposition of the numbers 3, 4, and 5 using the expression ___ + ___. Emphasis is not placed on the expressions and equations or using them in isolation from the concrete and pictorial—they are simply included to show another representation of decompositions alongside counters and drawings. The equal sign is not shown until Topic D.

A Teaching Sequence Toward Mastery of Numerals to 5 in Different Configurations, Math Drawings, and Expressions

Objective 1: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.
(Lesson 7)

Objective 2: Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.
(Lesson 8)

Objective 3: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners.*
(Lesson 9)

Objective 4: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners.*
(Lesson 10)

Objective 5: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.
(Lesson 11)

Lesson 7

Objective: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)

■ Application Problem   (7 minutes)

■ Concept Development   (23 minutes)

■ Student Debrief   (8 minutes)

   Total Time   (50 minutes)
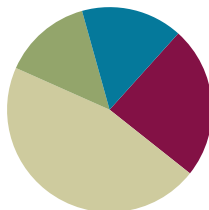
Fluency Practice (12 minutes)

▪ Sunrise/Sunset Counting to 5 **K.CC.2**   (3 minutes)

▪ Roll, Grab, Count **K.CC.4a**   (5 minutes)

▪ Rekenrek Roller Coaster **K.CC.4a**   (4 minutes)

Sunrise/Sunset Counting to 5 (3 minutes)

T: Hold your arms out in a great big circle. Pretend you are the sun! It's morning, and the sun is coming up. Let me see your sunrise (model how to gradually rise up from a crouching position to standing on tip-toes).

S: (Act out the sunrise movement.)

T: Stay there. What does the sun do at night?

S: It goes down.

T: Show me your sunset (return to crouching position).

S: (Act out the sunset movement.)

T: Now, we'll count as we make the sun rise. (Begin with 1 at the lowest position, and count up to 5, reaching the highest position.)

S: 1, 2, 3, 4, 5 (make a circle with their arms and rise up on their toes).

T: Now, sunset.

S: 5, 4, 3, 2, 1 (return down to crouching position).

Repeat a few more times, but circulate to be sure students can do this independently. As always, listen closely for hesitations or errors.

Roll, Grab, Count (5 minutes)

Materials: (S) Blank 5-frame (Fluency Template), bag of 5 cubes, die (cover 6-dot side or replace 6 with a number less than 5)

Note: During this activity, circulate to see which students must recount each time, and which ones simply take off or put on more cubes to represent the new number.

1. Roll the die.
2. Touch and count the dots.
3. Put that many cubes on the 5-frame.
4. Roll again. Add or remove cubes to match the new number rolled.

After a few minutes, have students turn the 5-frame so that they can see both linear configurations, horizontal and vertical.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Consider assigning a buddy for English language learners or special needs students to clarify the directions for the activity. Another possibility is to allow students to do this activity in pairs so that English language learners and special needs students can be more successful.

Rekenrek Roller Coaster (4 minutes)

Materials: (T) 20-bead Rekenrek

Direct students to gradually raise their hands as the numbers increase and lower their hands as the numbers decrease, mimicking the motion of a wave. Count up and down. Change directions after short sequences.

A suggested sequence is 1, 2, 3, 2, 3, 4, 3, 4, 5, 4, 3, etc.

Application Problem (7 minutes)

Find two things in this room that we use during math. Show a friend the things you found. How many things did you and your friend find all together? Did you find some of the same things? If so, put them together and count them.

Note: Application Problems continue to focus on counting and sorting. Students define groups and begin to learn that groups can be represented by the last number said when counting.

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Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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Concept Development (23 minutes)

Materials: (T/S) Bag of 15 linking cubes with 5 different colors such that each color configuration includes quantities to 5 (e.g., 1 blue, 2 red, 3 yellow, 4 green, and 5 brown), large numeral cards 1–5 (Template 1), 5-group cards 1–5 (Template 2)

T: (Hold up the large numeral 1 card). What number is this?

S: 1.

T: Can someone find something in our room that we have 1 of? (Wait as students look around and hands are raised.)

S: We have 1 teddy bear in our reading corner!

T: Sarah, go get the teddy bear, and put it by our 1 card.

Continue finding objects in the classroom to match to each numeral to 5 (e.g., 2 pencils or 3 balls).

T: Good counting and finding, everyone! (Hold up a bag of non-connected cubes.) Look at these cubes! I want to count how many I have of each color cube, but they are all mixed up! What should I do?

S: Let's dump them out and put the cubes that are the same color together.

T: Good idea! (As a whole group, work together to connect the same colored cubes. Position the sticks of connected cubes vertically.)

T: Now we can count how many of each color cube we have. Let's count the blue cubes.

S: There's only 1 blue cube.

T: Yes. What card can we put under the blue cube to show that there is only one blue cube?

S: The number 1. (Call on a student to choose the correct card and place it beneath the blue cube.)

Continue until all of the numeral cards 1–5 are placed under a stick of cubes.

MP.8

T: (Turn the 5-cube stick horizontal.) Do we have to change the numeral card for this stick of cubes? (Provide wait time, and call on several students. Be sure to ask the reason why or why not.)

S: No, because there are still 5 cubes, so the 5 card is still good.

T: Should we count the cubes again? (Provide wait time, and elicit several opinions. Be sure to ask the reason why or why not.)

S: Yes, we should, just to make sure. → No, we don't have to because you didn't put any more cubes on or take any off; you just turned the stick.

T: Okay. You are ready to try this at your desk. (Distribute materials. Monitor how each student organizes her cubes and digit cards, horizontally, vertically, or both horizontally and vertically.)

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Below grade level students as well as English language learners and special needs students benefit from seeing a chart representing the numeral with a corresponding object (e.g., 1 with one straw and 2 with two coins).

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Color the numeral cards on the Problem Set together to support non-readers. Then, let the students count and color independently.

Student Debrief (8 minutes)

Lesson Objective: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- ▪ Why are the teddy bears and the silverware both colored brown? (Focus on the fact that even though both sets of objects look different, there are three bears and three pieces of silverware. Draw the same attention to the boots and the gloves.)
- ▪ (Draw five stars on the board horizontally.) Count the stars on your paper and on the board. How are they the same? How are they different?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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Name _____   Date _____

Color each numeral card as directed. Count the objects in each group.
Then, color the group of objects the same color as the numeral card that
it matches.

1	2	3	4	5
Black	Blue	Brown	Red	Yellow
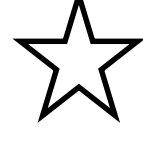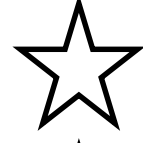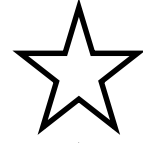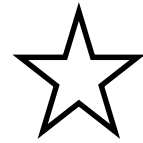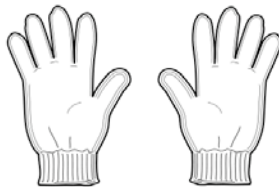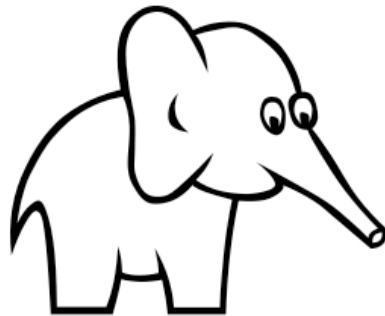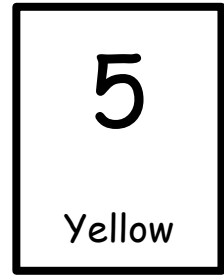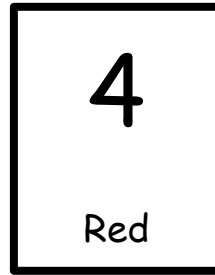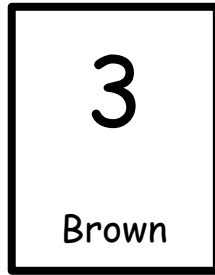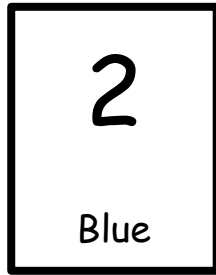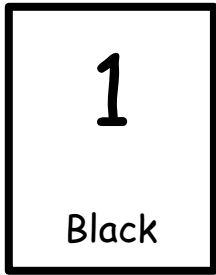
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Count the shapes. Color in the box that tells how many there are.
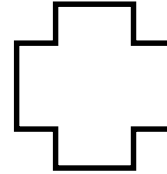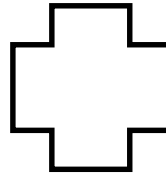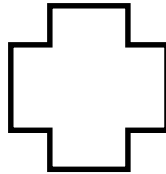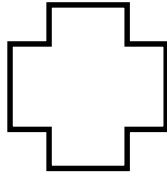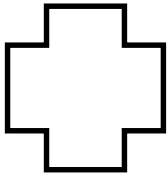
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Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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Name _____   Date _____

Color each numeral card as directed. Count the objects in each group.
Then, color the group of objects the same color as the numeral card that
it matches.

1	2	3	4	5
Black	Blue	Brown	Red	Yellow

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Lesson 7: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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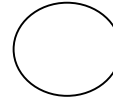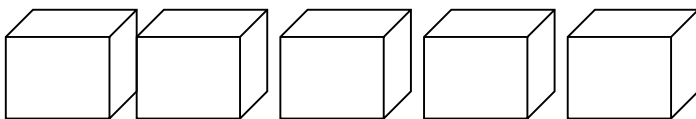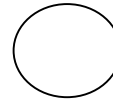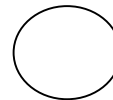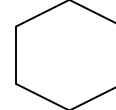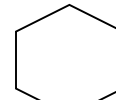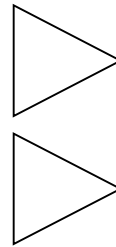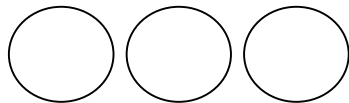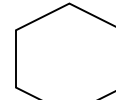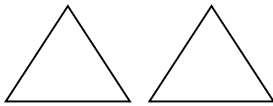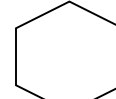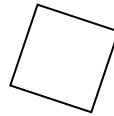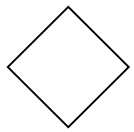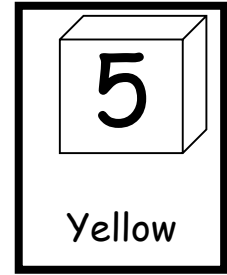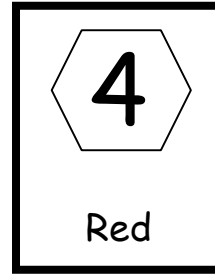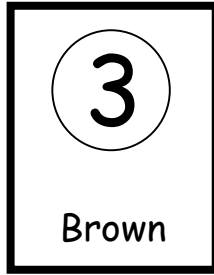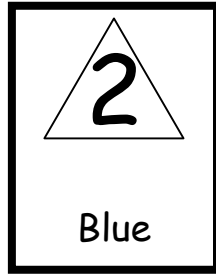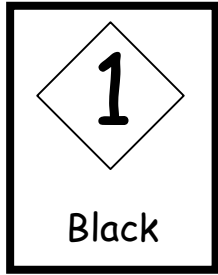
Cut out one 5-frame for each student.

5-frames
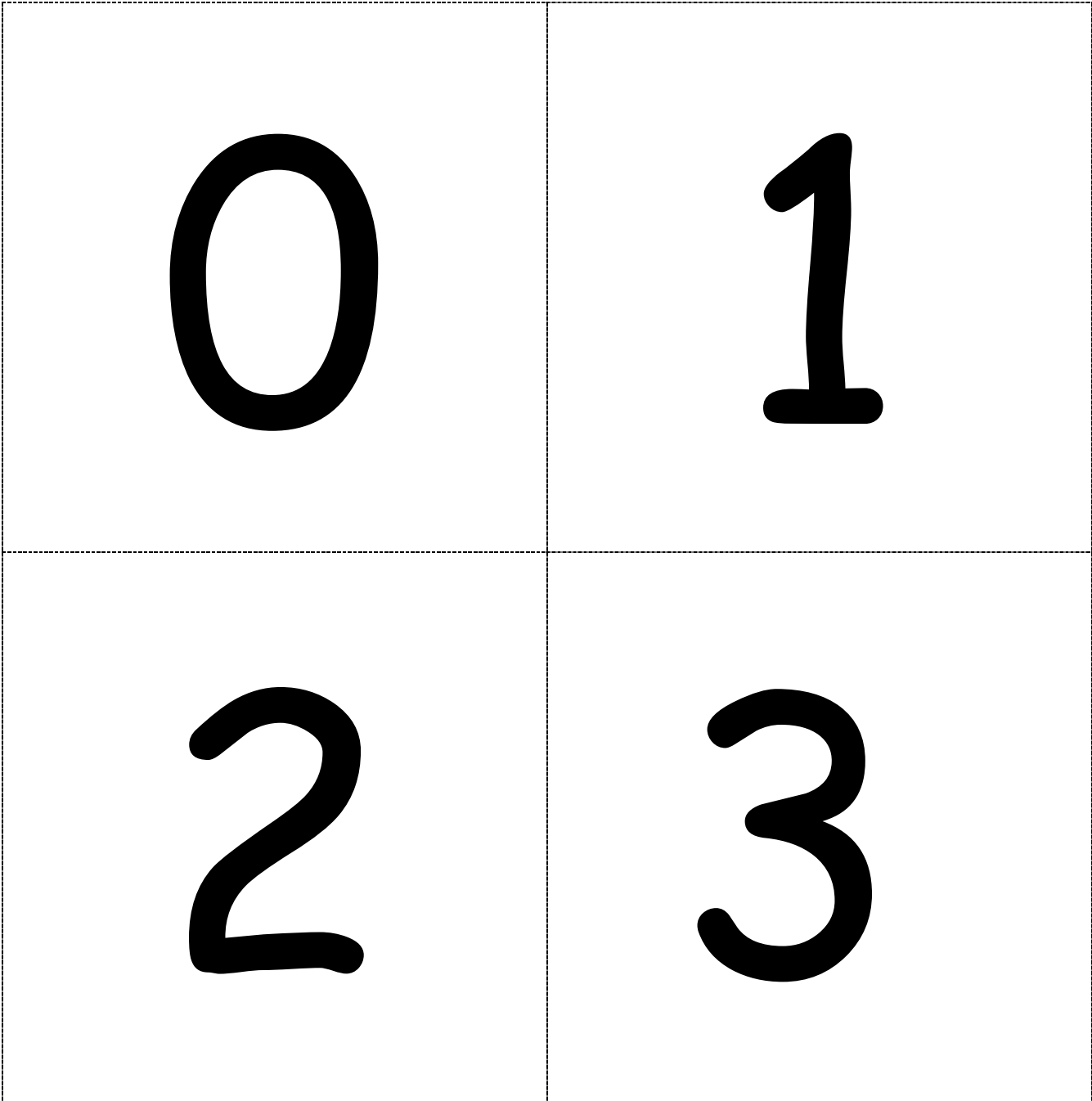
Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

78

0

1

2

3

Note: Only cards 1–5 are used in this lesson. Set aside full set for later use. Consider copying on cardstock for durability.

large numeral cards

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Lesson 7: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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4   5

6   7

Note: Only cards 1–5 are used in this lesson. Set aside full set for later use. Consider copying on cardstock for durability.

large numeral cards

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Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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Note: Only cards 1–5 are used in this lesson. Set aside full set for later use. Consider copying on cardstock for durability.

large numeral cards

Lesson 7: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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0	1	2	3
4	5	5	6
7	8	9	10
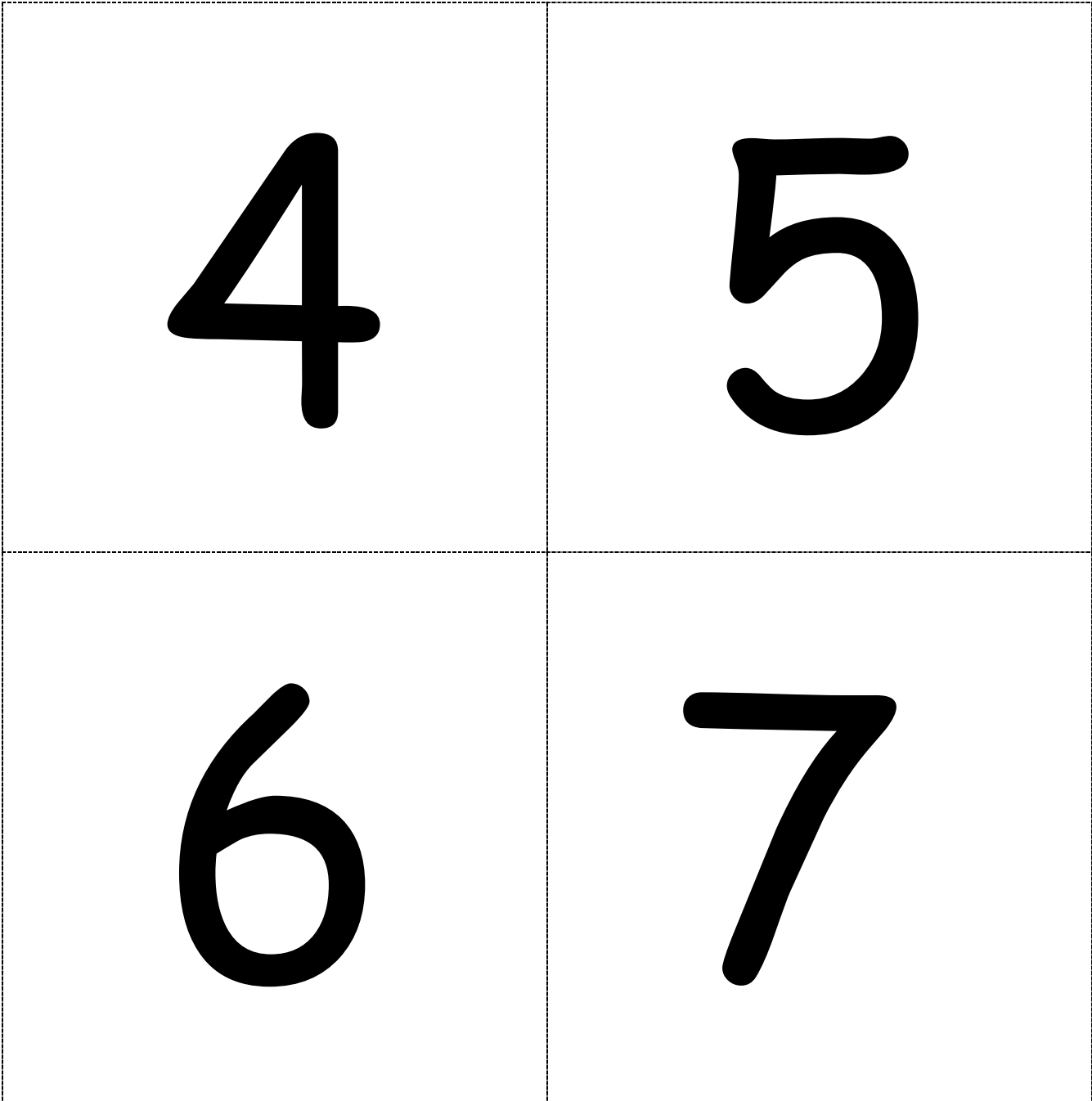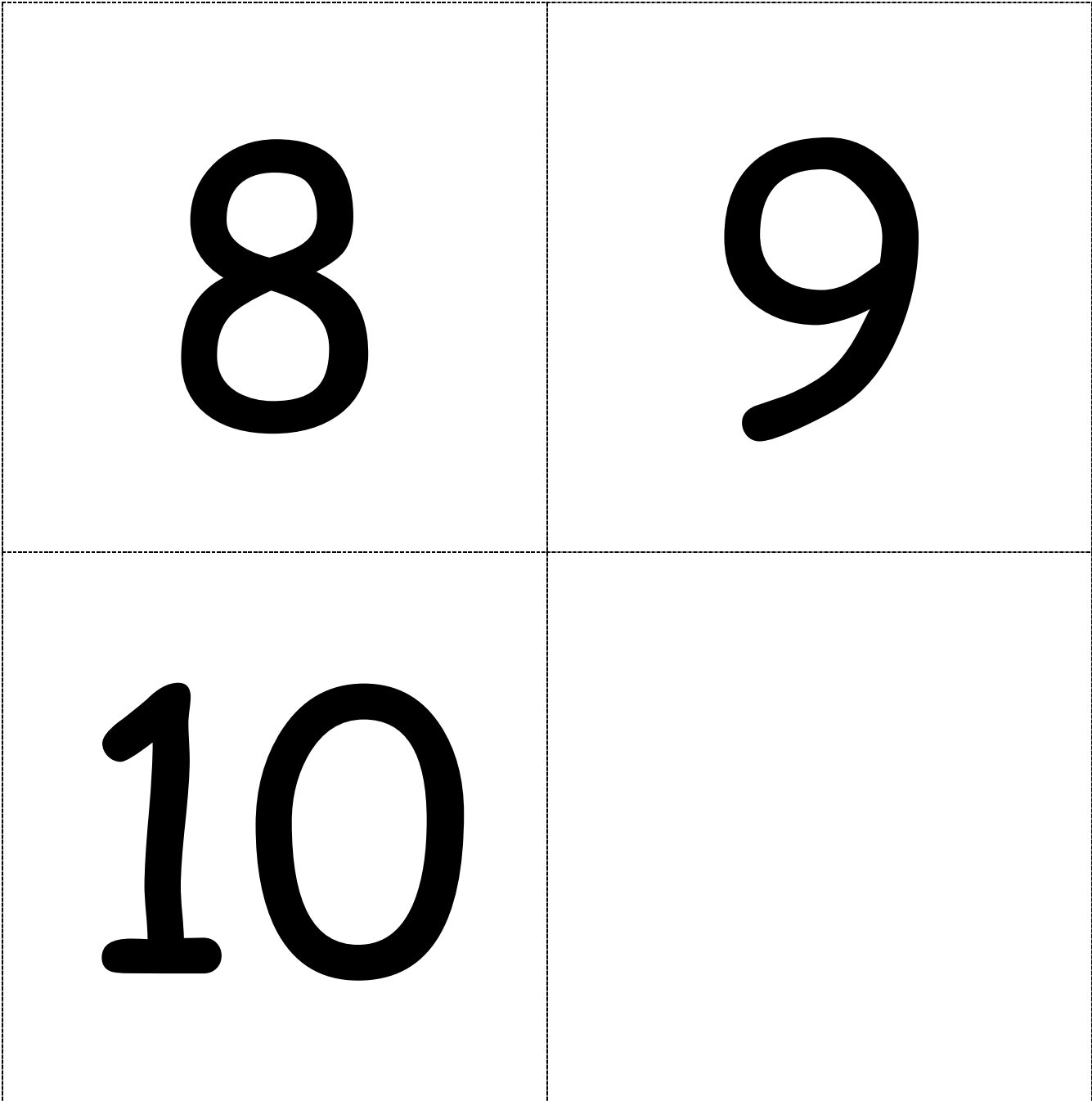
Note: Only cards 1–5 are used in this lesson. Save the full set for use in future lessons. Consider copying on different color card stock for ease of organization.

5-group cards (numeral side) (Copy double-sided with 5-groups on card stock, and cut.)

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Lesson 7:   Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards.

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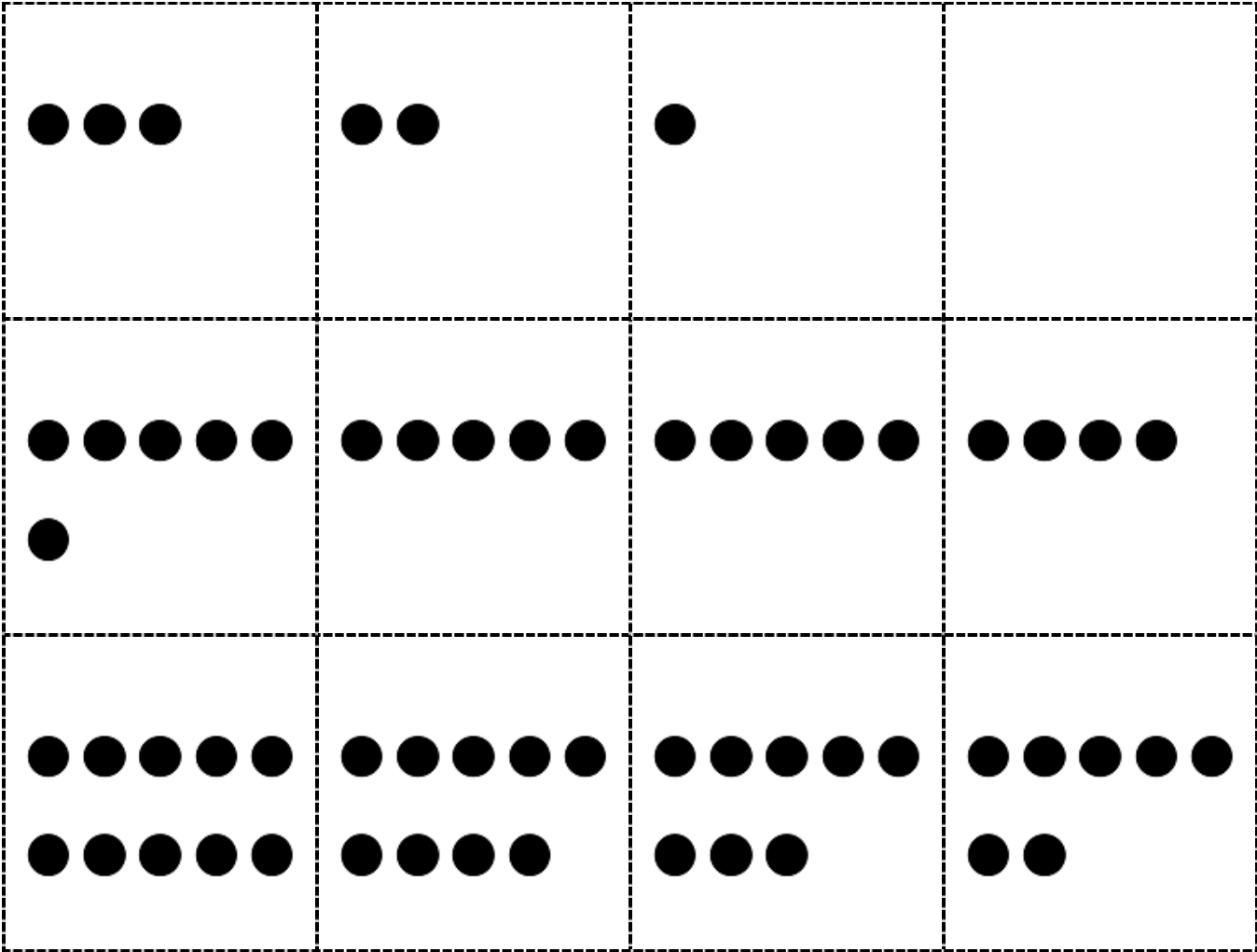
5-group cards (5-group side) (Copy double-sided with numerals on card stock, and cut.)

Lesson 8

Objective: Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (8 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (5 minutes)

Total Time   **(50 minutes)**
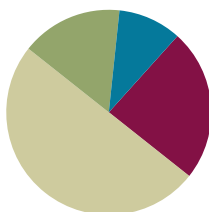
Fluency Practice (12 minutes)

- How Many Dots? **K.CC.4a**   (5 minutes)
- Show Me Another Way **K.CC.4a**   (4 minutes)
- Finger Counting **K.CC.2**   (3 minutes)

How Many Dots? (5 minutes)

Materials: (T) Large 5-group cards 1–5 (Fluency Template)

T: We're going to practice *listen, think, raise your hand, wait.* I'm going to show you some dots. Raise your hand when you have counted the dots, then wait for the snap to say the number. Ready? (Show the 1-dot card. Wait until all hands are raised, and then give the signal.)

S: 1.

T: (Show the 2-dot card. Wait until all hands are raised, and then give the signal.)

S: 2.

As students begin to demonstrate mastery, deviate from a predictable pattern, and challenge them to recognize the groups of dots more quickly.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Use hand signals to introduce a procedure for answering choral response questions: listen (cup hand around ear), think (finger to temple), raise your hand (raise your own hand to remind them to raise theirs), and wait for the snap. Practice with general knowledge questions until students are accustomed to the procedure.

Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

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Show Me Another Way (4 minutes)

Conduct the activity as outlined in Lesson 6.

Have students try all of the different combinations. It might be necessary to indicate to students that they may use both hands to show the number. Continue the process to 5.

Finger Counting (3 minutes)

Note: Notice that the teacher does not say the numbers with the students, but rather listens intently for hesitations or errors. Return to a simpler sequence (within 3) if students begin to struggle.

Student View of Teacher's Hand.

- T: Count with me. Ready? (Show pinky on the right hand.)
- S: 1. (Show pinky on the left hand.)
- T: (Show pinky and ring fingers on the right hand.)
- S: 2. (Show pinky and ring fingers on the left hand.)
- T: (Show pinky on the right hand.)

Student View of Student's Hand.

- S: 3. (Show pinky, ring, and middle fingers on the left hand.)
- T: (Show pinky and ring fingers on the right hand.)

Remain consistent in finger counting, moving from pinky to thumb, so that students can see their hands as a number line from left to right. (The teacher begins on the right so that the students do not see the reverse.)

Here is a recommended sequence: 1, 2, 1, 2, 3, 2, 3, 2, 3, 4, 3, 4, 3, 4, 5.

Application Problem (8 minutes)

Materials: (S) Counters in a bag

Put 4 counters in a row going across. (Wait for students do so.) Put 4 counters in a column going up and down. (Wait for students do so.) Draw your counters on your paper.

Note: Students are beginning to learn and experience that the total count is not changed when objects are arranged in different orientations.

Concept Development (25 minutes)

Materials: (T) 5 markers (S) Bag with 5 cotton balls, personal white board

- T: (Begin on the carpet with four markers scattered.) How can I find out **how many** markers I have?
- S: Count them.
- T: Count with me.
- S: 1, 2, 3, 4.

Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

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T: What is another way to organize them?

S: Move them into a line. → Line them up. → Put them in a row.

T: (Move them.) Let's count again.

S: 1, 2, 3, 4.

T: It's the same! (Put the four markers into a 2 × 2 array.)

T: How would I count these without putting them in a line?

S: Point to each one and count.

T: When I touch and count, I am going to go from left to right. Touch and count with me.

Give each student a bag with five cotton balls in it. Have them take out four, put them in a line, move them into an array, and move them back to a line, counting each time. Be sure they line their array up correctly, two above two.

Have the students take out the last cotton ball.

T: We are going to make magic pets. When I call out a number, I want you to put that many cotton balls in a line to make a caterpillar.

T: 5. (Put the cotton balls into a line.)

T: Now, change your magic pet into a fuzzy sleeping kitten; push the cotton balls together.

T: Put one cotton ball away. Put your cotton balls in a line to make a caterpillar.

T: Now, change your magic pet into a fuzzy sleeping puppy; push the cotton balls together.

T: Now, change your magic pet into two caterpillars that are exactly the same.

Have students take out their personal boards.

T: Draw four circles in a line to show your caterpillar. (Model the first few if needed.) Touch and count your circles.

S: 1, 2, 3, 4.

T: Erase. Now, draw a circle in each corner. Touch and count.

S: 1, 2, 3, 4.

T: Is that the same number?

Continue this procedure with 4 and 5 in linear and array configurations. Have them touch and count as needed each time so that they realize for themselves the conservation of the number.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students count the objects and circle the correct number.

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Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group),
                with 4 in an array configuration. Compare ways to count five fingers.

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Student Debrief (5 minutes)

Lesson Objective: Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you know how many ducks there were? (Have students model how they counted.)

MP.3

- Turn and talk to your neighbor about how you counted the stars (array).
- Draw stars in an array on a dry erase board, and have students count the stars as you model.
- Discuss the answers students put on the hand pictures. Ask if they can show other ways to make that number.
- Engage the students in a discussion about how the number stays the same even though the positioning of the objects changes.
- Do we have to touch and count to know the number is the same?
- Do we have to touch and count to count?
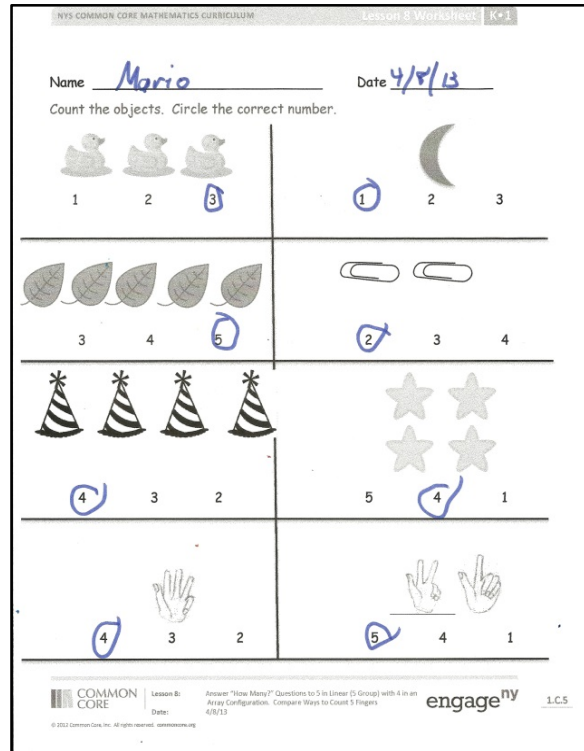
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____   Date _____

Count the objects. Circle the correct number.

1 2 3	1 2 3
3 4 5	2 3 4
4 3 2	5 4 1
4 3 2	5 4 1

Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group),
with 4 in an array configuration. Compare ways to count five fingers.

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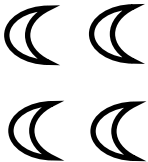
Name _____ Date _____

Count. Circle the number that tells how many.

☺ ☺ ☺	1 2 3 4 5
✸ ✸ ✸ ✸	1 2 3 4 5
♡ ♡ ♡ ♡ ♡	1 2 3 4 5
☾ ☾ ☾ ☾	1 2 3 4 5
△ △ △ △ △	1 2 3 4 5
▢ ▢▢ ▢▢	1 2 3 4 5

Name _____ Date _____

Count. Circle the number that tells how many.

●●●●	4	5
(4 dots vertical)	4	5
●●●●●	4	5
(4 dots diagonal)	4	5
(die: 4)	4	5
(die: 4) (die: 1)	4	5
(die: 5)	4	5

large 5-group cards (Copy on card stock, and cut. Use cards 1–5 in today's Fluency Practice. Save full set.)

large 5-group cards (Copy on card stock, and cut. Use cards 1–5 in today's Fluency Practice. Save full set.)

large 5-group cards (Copy on card stock, and cut. Use cards 1–5 in today's Fluency Practice. Save full set.)

Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

large 5-group cards (Copy on card stock, and cut. Use cards 1–5 in today's Fluency Practice. Save full set.)

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Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers.

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large 5-group cards (Copy on card stock, and cut. Use cards 1–5 in today's Fluency Practice. Save full set.)

Lesson 8:   Answer *how many* questions to 5 in linear configurations (5-group),
with 4 in an array configuration. Compare ways to count five fingers.

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Lesson 9

Objective: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (7 minutes)
- ■ Concept Development   (20 minutes)
- ■ Student Debrief   (11 minutes)
-    **Total Time**   **(50 minutes)**
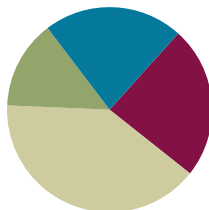
Fluency Practice (12 minutes)

- ▪ Hands Number Line to 5 **K.CC.4a**   (4 minutes)
- ▪ 5-Frame Peek-a-Boo **K.CC.5**   (4 minutes)
- ▪ Roll, Count, Show **K.CC.4a**   (4 minutes)

Hands Number Line to 5 (4 minutes)

Materials: (S) Left hand mat (Lesson 1 Fluency Template), bag of beans or small counters

Conduct the activity as outlined in Lesson 2.

Continue this process to 5. Then, guide students to recognize the group of 5 on one hand. Ask questions such as, "Are you showing me all of your fingers on one hand? How many is that? So, how many fingers do you have on the other hand?"

5-Frame Peek-a-Boo (4 minutes)

Materials: (T) Large 5-group cards (Lesson 8 Fluency Template)

T: I'm going to show you my 5-group cards, but only for a second! Like this (hold up the card briefly, and then quickly take it out of view). Quickly count the dots, and raise your hand when you know how many. Remember to wait for the snap. (Wait for all students to raise hands, and then give the signal.)

S: 1.

Work within numbers to 3 at first, and as students demonstrate mastery, introduce 4 and 5. A possible sequence is 1, 2, 1, 2, 3, 2, 3, 4, 3, 2, 3, 2, 3, 4, 5, 4, 5, 4, 3. Then, say numbers randomly.

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Roll, Count, Show (4 minutes)

Materials: (S) 1 die with the 6-dot side replaced with 0 (cover with a piece of mailing label), 5-group cards
(Lesson 7 Template 2)

1. Roll the die.
2. Touch and count the dots.
3. Find the numeral card with that many dots.
4. Repeat (or verify with partner).

Application Problem (7 minutes)

Draw a caterpillar pet that has 4 different parts. Show your pet to a friend.

Note: This is a classic sequence of concrete to pictorial. They *made* a caterpillar yesterday with cotton balls, and today they draw one.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> When giving directions for the Application Problem, show a picture of a caterpillar to assist your English language learners and special needs students in understanding your directions.

Concept Development (20 minutes)

Materials: (S) 2 linking cube sticks of 5, hidden partners (Template) per pair

MP.7

T: We are going to be builders today! Count with me as I build this tower. (Build a tower of 5, one block at a time, with the linking cubes.)

S: 1, 2, 3, 4, 5.

T: This is a tall tower. I'm going to break it to find **hidden partners** inside. (Break off two.)

T: What do you notice? Talk to your partner.

S: One tower has 2 small cubes. → One of the towers has 3 cubes. → There is a 3 tower and a 2 tower inside the 5 tower! → Those must be the hidden partners. → They were hiding inside the 5.

T: Here is a tower of 5 for you. Break it the same way I broke mine. (Let them investigate.)

T: Put your tower together again. Can anyone find different hidden partners inside the 5?

S: If you take 1 block off the top, you will find the partners 4 and 1.

Continue finding hidden partners with 4 blocks and 3 blocks.

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Lesson 9:   Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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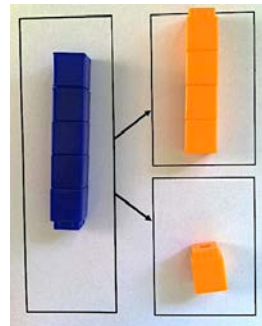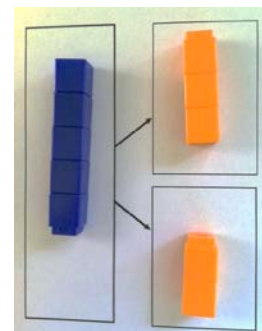
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Have students go back to their seats, and pass out another linking cube tower of 5 and hidden partners template for each pair of students.

T: Build a tower of 5, and put it inside the large box on the left. Take your other linking cube tower of 5. Does it have the same number of cubes as the other tower?

S: Yes.

T: Break it into two hidden partners that together make 5.

Guide students to then do the same with two towers of 4 and two towers of 3. Circulate and encourage them to notice the hidden partners.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Go over the directions one step at a time. Remind students to count all of the dots, not just the gray ones.

Student Debrief (11 minutes)

Lesson Objective: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners.*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What **hidden partners** of 3 do you see inside the first example on the Problem Set? (Go through each example.)
- What numbers are hiding inside 5?
- Show me 5 the Math Way. Show me 3 fingers inside. 4 fingers.
- Talk to your partner about our lesson today. What did you learn?

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Lesson 9: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

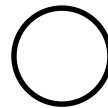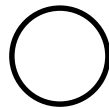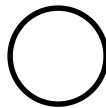engage^ny 98

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.
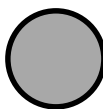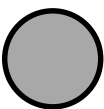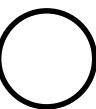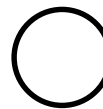
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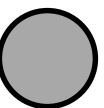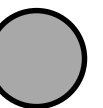**engage**ny

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Name _____   Date _____

Count the dots, and circle the correct number. Color the same number of dots on the right as the gray ones on the left to show the hidden partners.
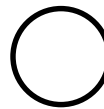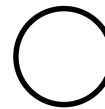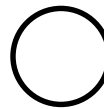
3   4   5

3   4   5

3   4   5

3   4   5

Lesson 9: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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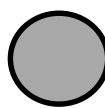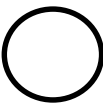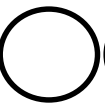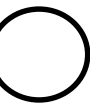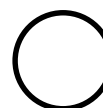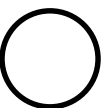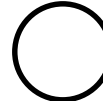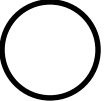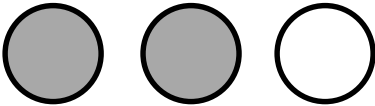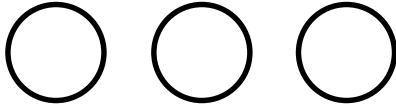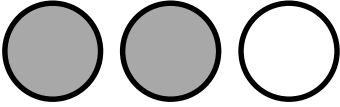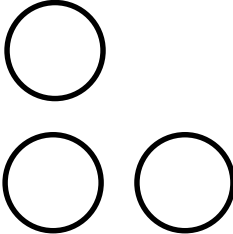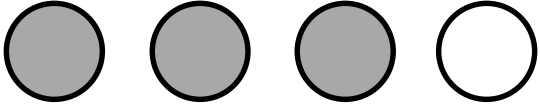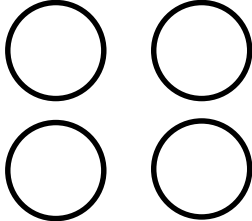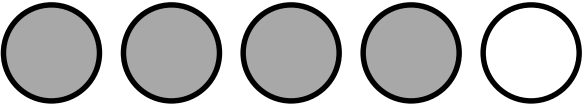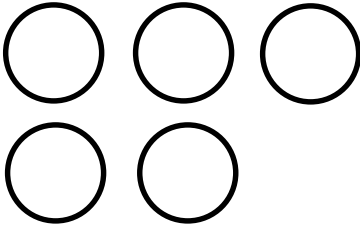
Name _____   Date _____

Circle 3 to show the hidden partners.

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Lesson 9: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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Name _____   Date _____

Count the circles, and box the correct number. Color in the same number of circles on the right as the shaded ones on the left to show hidden partners.

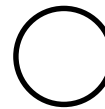3   4   5

3   4   5

3   4   5

3   4   5

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Lesson 9:   Within linear and array dot configurations of numbers 3, 4, and 5, find hidden partners.

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hidden partners

Lesson 9: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners*.

103
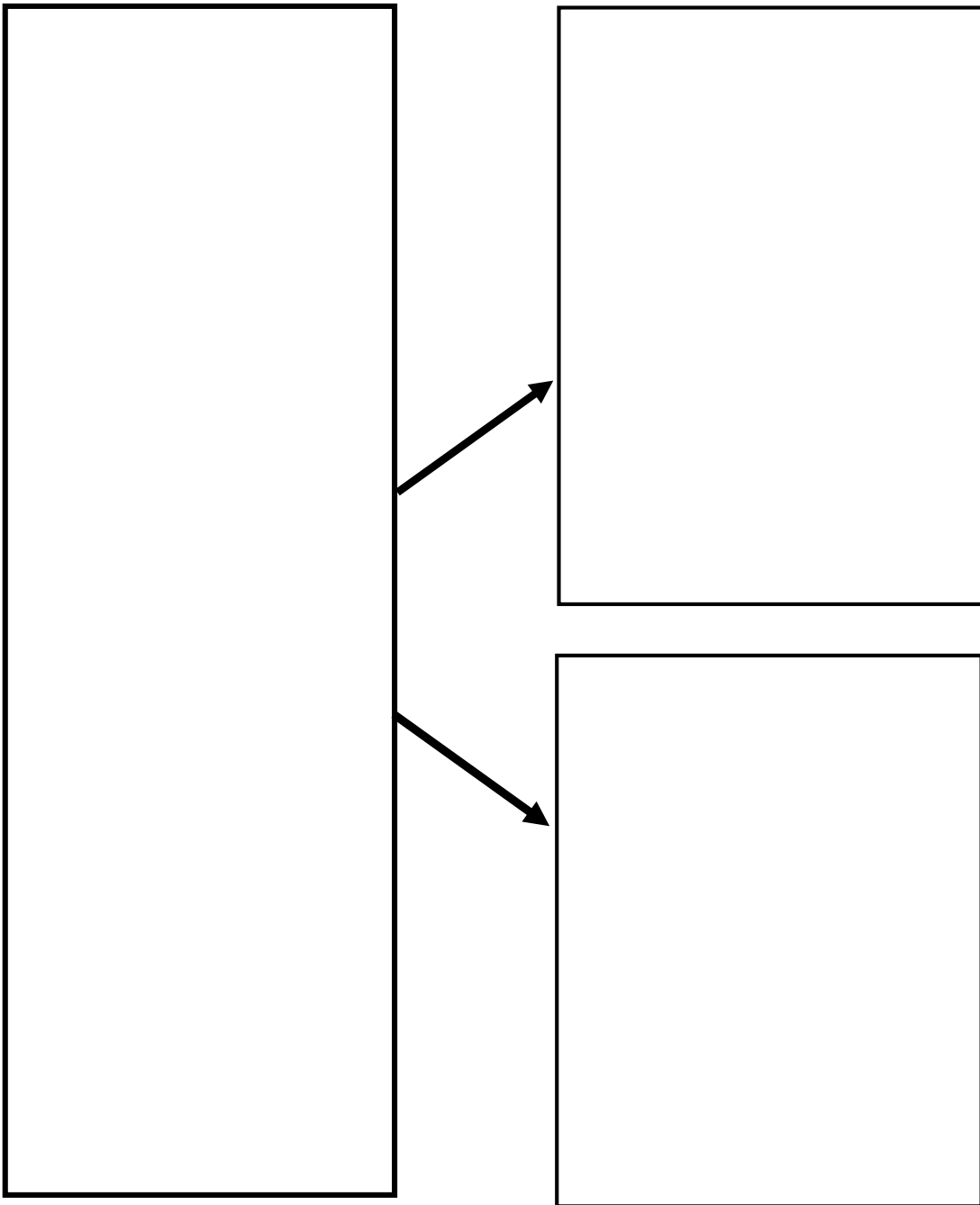
Lesson 10

Objective: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

Suggested Lesson Structure

■ Fluency Practice	(10 minutes)	
■ Application Problem	(8 minutes)	
■ Concept Development	(27 minutes)	
■ Student Debrief	(5 minutes)	
Total Time	**(50 minutes)**	

Fluency Practice (10 minutes)

- Line Up, Sprinkle, Circle **K.CC.5**　　　　　　　　　(4 minutes)
- 5-Frames: Counting Dots and Spaces **K.CC.4a**　　　(4 minutes)
- Finger Counting **K.CC.2**　　　　　　　　　　　　　(2 minutes)

Line Up, Sprinkle, Circle (4 minutes)

Materials: (S) Bag of beans, piece of construction paper or foam as a work mat, small plastic cup

Note: This fluency activity requires students to recount the beans, which not only gives more opportunities for one-to-one matching, but also develops the concept of conservation.

- T:　Take three beans out of your bag, and put them in your cup. (Wait for students to do this.) Spill them onto your mat, and put them in a straight line. Touch and count.
- S:　1, 2, 3.
- T:　Are there still 3?
- S:　Yes!
- T:　Put them back in your cup. Spill them onto your mat, and sprinkle them around. Touch and count.
- S:　1, 2, 3.
- T:　Are there still 3?
- S:　Yes!

Repeat with 4 and 5, including an additional last step to put the beans in a circular formation. Allow students to experiment with other formations.

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Lesson 10:　　Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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5-Frames: Counting Dots and Spaces (4 minutes)

Materials: (T) Large 5-frame cards (Fluency Template)

T: We're going to practice *listen, think, raise your hand, wait*. Raise your hand when you have counted the dots, then wait for the snap to say the number. Ready? (Show the 4-dot card. Wait until all hands are raised, and then give the signal.)

S: 4.

T: How many spaces? (Wait until all hands are raised, and then give the signal.)

S: 1.

T: How many dots? (Show the 3-dot card. Wait until all hands are raised, and then give the signal.)

S: 3.

T: How many spaces?

S: 2.

T: How many dots? (Show the 1-dot card. Wait until all hands are raised, and then give the signal.)

S: 1.

T: How many spaces?

S: 4.

As students begin to demonstrate mastery, deviate from a predictable pattern, and challenge them to recognize the groups of dots more quickly.

Finger Counting (2 minutes)

Conduct the activity as outlined in Lesson 8.

Application Problem (8 minutes)

Draw 5 dogs playing. Draw a fence that keeps exactly 3 of them inside.

Note: This Application Problem links previous lessons of creating a group of objects of a certain count and leads into today's lesson of hidden partners within a number.

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> To help English language learners understand that they will practice *listen*, *think*, *raise your hand*, and *wait*, use gestures to illustrate these actions. For example, cup hands to the ear to illustrate *listen,* or point to the temple when saying "think."

Concept Development (27 minutes)

Materials: (T/S) 5 counting bears (1 large red, 2 large yellow, 2 small yellow), 1 paper clip

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Lesson 10:   Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

Part 1: Circular Count

Begin lesson with the five counting bears in a line on the rug.

- T: Some bears went to the park. They wanted to play on the merry-go-round. (Place the plate down, and put the bears in a circle around or on the plate.)
- T: Let's count the bears. (Count with students, but do not stop when you get back to the first bear counted.)
- S: 1, 2, 3, 4, 5, 6,… You didn't stop counting after you counted them all.
- T: What can I do so I know when to stop counting when my things are in a circle?
- S: Pick up each bear as you count. → Put a marker so that you know where you started.
- T: Okay! I am going to put a marker so I can count in a circle correctly. (Place the paper clip at the start of the count.) Count with me.
- S: 1, 2, 3, 4, 5.
- T: What if I put my marker at a different bear to start? Will the count be the same? (Try it to verify.)
- T: There are 5 bears. Yesterday, we found hidden partners inside of our big tower. Can we see groups of different bears inside this bigger group?
- S: I see 3 big bears and 2 little bears.
- T: Do you see any other small groups of friends?
- S: I see 1 red bear and 4 yellow bears.
- T: Inside our circle count, we saw hidden partners, too.
- T: Now, you find small groups of bears inside your larger group.

Pass out a bag of five bears to each student. Direct them to put their cup on their mat and place their bear friends around the cup in a circle. Circulate and encourage them to both count in a circle correctly by placing their marker and looking for small groups inside the large group.

Part 2: Scatter Count

Hold five bears.

- T: The bears were going so fast on the merry-go-round that they fell off. (Dump them onto the floor so they scatter.) Oh, no! Let's count to see if all our bear friends are okay. How can I count them?
- S: Touch each bear as you count. → Pick up each bear as you count.
- T: Show me a **counting path**. Where should I start?
- S: With the big red one!
- T: Next?
- S: The little yellow one right next to it.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Scaffold the lesson for students performing below grade level by having them pair up and take turns putting their bears in a circle and counting them. Students can then check their solutions with each other.

Continue the count. Once finished, go back and recount more quickly, but use the exact same counting path through the five bears. After that, go back and find a different pathway through the count.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students count the objects in each circle. Then, have students color the correct number of objects.

Student Debrief (5 minutes)

Lesson Objective: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Create stories to go along with problems. (For example, I have 3 gumballs. Two gumballs are white, and 1 gumball is _____.)
- Discuss what hidden partners were found inside the configuration.
- Circle the hidden partners and discuss.
- Talk about the strategies used for counting things that are in a circle and things that are scattered.
- Did you follow the same **counting path** as your friends?

Exit Ticket (3 minutes)
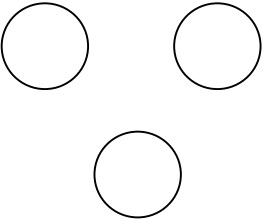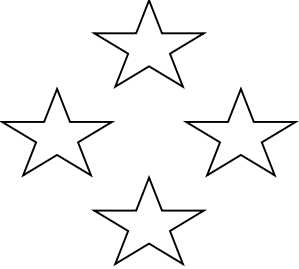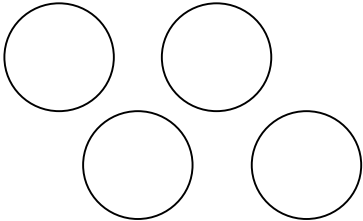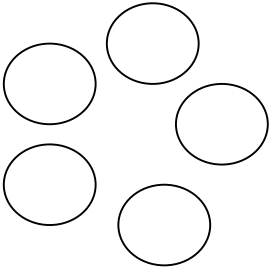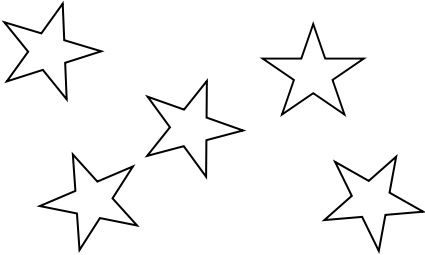
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Note: Depending on the class, Exit Tickets with multi-step directions can be done in parts. "First, let's count the dots and circle the number." Assess. "Now, let's find the hidden group of 3. Circle a group of 3 in each box." Assess again.
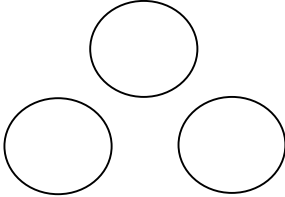
Name _____   Date _____

Count the objects. Circle the total number of objects.
Color 1, 2, or 3 to see the hidden partners.

Color 1 circle.

1   2   3

Color 3 stars.

2   3   4

Color 2 circles.

3   4   5

Color 3 circles.

5   4   3

Color 4 stars.

4   5   3

Draw 2 circles and color them. Count all the objects, and circle the number.

5   2   3

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Lesson 10: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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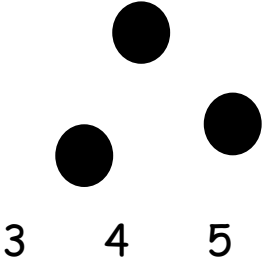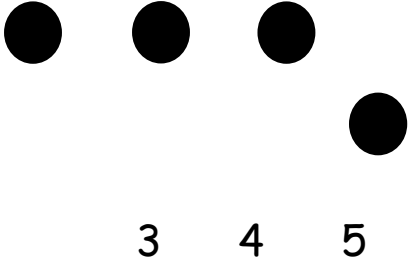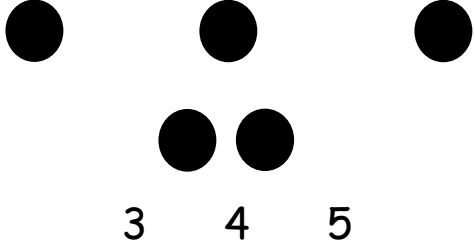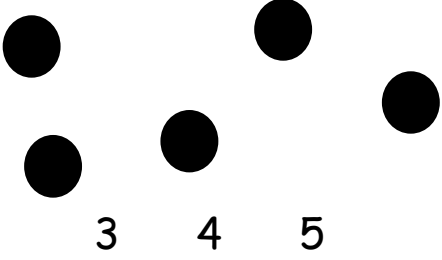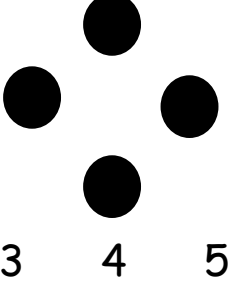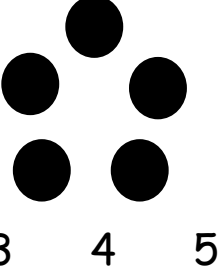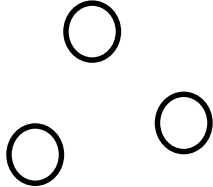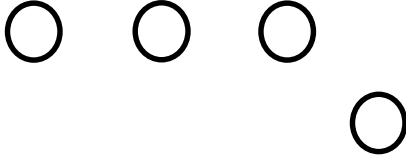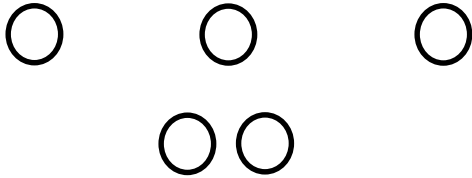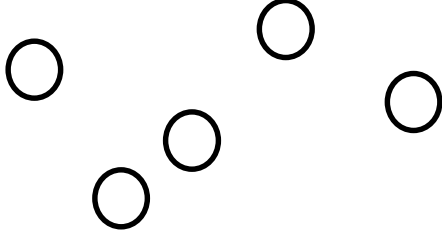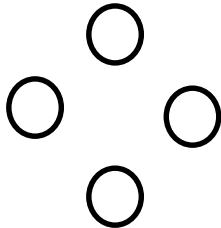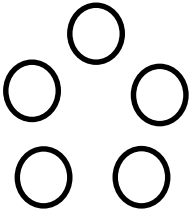
Name _____   Date _____

Count how many. Draw a box around that number. Then, circle a group of 3 dots in each box.

● ● ● (dots) 3 4 5	● ● ● ● (dots) 3 4 5
● ● ● ● ● (dots) 3 4 5	● ● ● ● ● (dots) 3 4 5
● ● ● ● (dots) 3 4 5	● ● ● ● ● (dots) 3 4 5

Lesson 10: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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Name _____   Date _____

Count how many. Draw a box around that number. Then, color 3 of the circles in each group.

3   4   5   3   4   5

3   4   5   3   4   5

3   4   5   3   4   5

Talk to an adult at home about the hidden partners you found.

large 5-frame cards

Lesson 10: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

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Lesson 11

Objective: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

Suggested Lesson Structure

- ■ Fluency Practice　　　　(15 minutes)
- ■ Concept Development　　(20 minutes)
- ■ Application Problem　　　(5 minutes)
- ■ Student Debrief　　　　　(10 minutes)
- **Total Time**　　　　　　　**(50 minutes)**
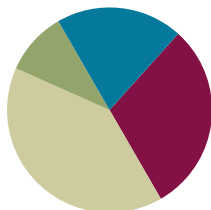
Fluency Practice (15 minutes)

- ▪ Making 3 with Triangles and Beans **K.CC.4a**　　　　　(6 minutes)
- ▪ Making Three-Finger Combinations **K.CC.4a**　　　　　(4 minutes)
- ▪ Hide and See (3 as the Total) **K.OA.2**　　　　　　　(5 minutes)

Making 3 with Triangles and Beans (6 minutes)

Materials:　(S) 3 beans, paper or foam triangle

- T:　Touch and count the corners of the triangle.
- S:　1, 2, 3.
- T:　Touch and count your beans.
- S:　1, 2, 3.
- T:　Our job is to make 3. Put 2 of your beans on the corners of the triangle. Keep the other one in your hand. How many beans on your triangle?
- S:　2.
- T:　How many beans in your hand?
- S:　1.
- T:　We can tell how to make 3 like this: 2 and 1 make 3. Echo me, please.
- S:　2 and 1 make 3.
- T:　Show me 1 bean on your triangle. Keep the rest in your hand. How many beans on your triangle?
- S:　1.

T: How many beans in your hand?

S: 2.

T: Raise your hand when you can say the sentence. Start with 1. (Wait until all hands are raised, and then give the signal.)

S: 1 and 2 make 3.

Making Three-Finger Combinations (4 minutes)

T: I'll show you some fingers. I want to make 3. Show me what I need to make 3. (Show 2 fingers.)

S: (Show 1 finger.)

T: Raise your hand when you can say the number sentence. Start with my number.

S: 2 and 1 make 3.

Students can play with a partner, rapidly and energetically like Rock, Paper, Scissors.

Hide and See (3 as the Total) (5 minutes)

Materials: (S) 3 linking cubes

T: Touch and count your cubes.

S: 1, 2, 3.

T: Hide 2 behind your back. How many can you see?

S: 1.

T: Put them back together. How many cubes do you have?

S: 3.

T: Hide 1 behind your back. How many can you see?

S: 2.

T: Put them back together. How many cubes do you have?

S: 3.

Variation: As students put the cubes together, they can say the number sentence.

Application Problem (5 minutes)

Read the problem to the students. Have students use red and blue to draw their crayons.

Oh, no! Someone threw 4 crayons on the floor. Draw the crayons. Compare your crayons to your friend's. How many of your crayons are the same color as your friend's?

Note: In this Application Problem, students continue to practice counting objects in a group and seeing different hidden partners in 4 as they look at their crayons and their friends' crayons.

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Lesson 11: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

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Concept Development (20 minutes)

Materials: (T/S) 5 counting bears or linking cubes per pair, 1 sheet of blue paper, 1 sheet of green paper, ½ sheet of paper, 5-group cards to 5 (Lesson 7 Template 2)

Call students to the carpet, and sit in a circle. Scatter the counting bears in the center.

- T: There are 3 bears.
- T: Two bears are in the field (move two bears to the green paper), and 1 bear is in the water (move one bear to the blue paper). How many bears are there?
- S: 3 bears.
- T: How many bears are in the field?
- S: 2 bears.
- T: How many bears are in the water?
- S: 1 bear.
- T: Take 3 bears out of your bag, and tell our **number story** to your partner. When you are finished, let your partner tell you the story of the 3 bears.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Young children often have dexterity issues. Sometimes the bears are hard for students to hold in their hands. Try using the linking cubes for children who encounter this difficulty. Match the colors of the linking cubes to the bears.

Once the students have been able to verbalize the story, let them make up other number stories with 4 or 5 bears in the field and in the water.

Give students half of a piece of paper. Have them get their 5-group cards and go back to their seats.

- T: I'm going to tell you a number story. Draw it on your paper.
- T: There are 3 flowers. Two flowers are red, and 1 flower is yellow.
- S: (Draw.)
- T: Find the number card that matches the number of red flowers. What card did you pull out?
- S: 2.
- T: Find the card that matches the number of yellow flowers. What number did you pull out?
- S: 1.
- T: Find the card that matches the number of flowers on your paper. What number did you pull out?
- S: 3.
- T: We can show the 3 flowers with our numbers like this (write 2 + 1).
- T: We read it like this, 2 plus 1. Say it with me.
- S: 2 plus 1.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Challenge students who are performing above grade level by extending the task with questions such as, "What would happen if another bear began to eat an apple? How many bears would be eating now?"

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Lesson 11:   Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

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T: What does the 2 tell us about in the story?

S: The red flowers.

T: What does the 1 tell us about?

S: The yellow flowers.

T: What does 2 + 1 tell us about?

S: All the flowers. → The 3 flowers. → The 2 red and 1 yellow flower.

Tell another number story for the students to draw, this time with bears. For example, there were 5 bears. Four bears were brown, and 1 bear was black. Match the story with the corresponding cards and expression, 4 + 1. Have students explain the numbers' referents in the story.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Give the directions one step at a time. First, have the students count the cubes. Then, draw a line between the white and gray cubes. Finally, draw the cubes above the numbers.

Student Debrief (10 minutes)

Lesson Objective: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Have students bring their Problem Sets to the carpet and create **number stories** using the combinations in the Problem Set.
- Have linking cubes or counting bears to model and represent various problems.
- How is finding hidden partners in 3 bears the same as showing 3 on your fingers the Math Way and another way?
- How did we show our number stories today? (With blocks, drawings, and numbers.)

MP.3

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Lesson 11:   Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

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Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 11: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

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Name _____   Date _____

These squares represent cubes. Count the squares. Draw a line to break the stick between the gray squares and the white squares. Draw the squares above the numbers.

2 + 1   1 + 2

3 + 1   1 + 3

4 + 1   1 + 4

Name _____   Date _____

There are 2 green blocks and 1 yellow block. Draw the blocks.

There are 2 + 1 blocks. Count the blocks.

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Lesson 11: Model decompositions of 3 with materials, drawings, and expressions.
Represent the decomposition as 1 + 2 and 2 + 1.

engage^ny   118

Name _____   Date _____

Feed the puppies! Here are 3 bones. Draw lines to connect each bone with a puppy so that one puppy gets 2 bones, and the other puppy gets 1 bone.

Color the shapes to show 1 + 4. Use your 2 favorite colors.
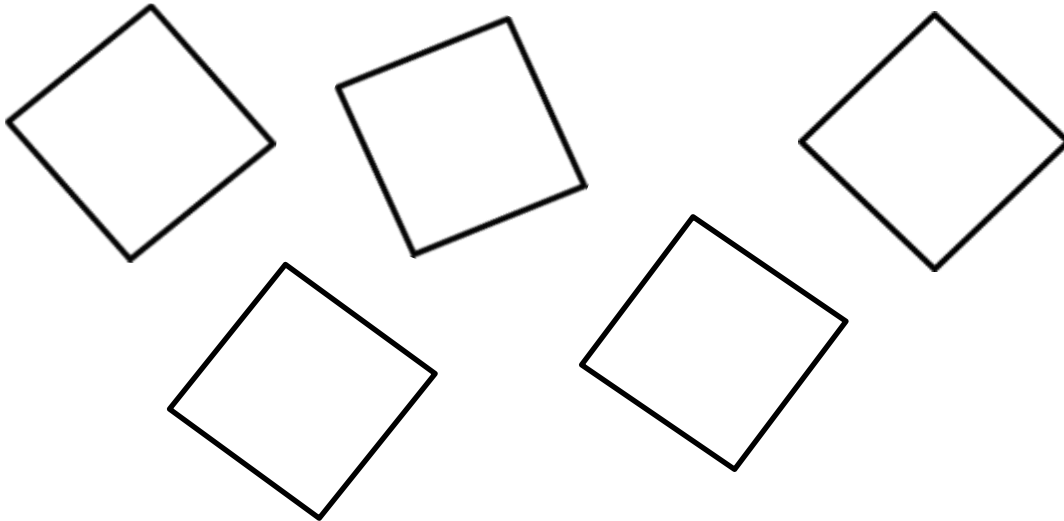
How many shapes are there? Circle the number.   1   2   3   4   5

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Lesson 11: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1.

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Mathematics Curriculum

Topic D

The Concept of Zero and Working with Numbers 0–5

K.CC.3, K.CC.4ab, K.CC.5

Focus Standard:	K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).
	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
Instructional Days:	5	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

Up until this point in the module, students have been engaged in meaningful, varied counting activities, learning that quantities of objects have a numerical value. Topic D opens with exploring the meaning of zero in the context of groups of objects. In Topics A–C, students were asked only to identify numerals to 5. The first two lessons in this topic introduce writing the numerals 0–3. Using the understanding that numbers correspond to a value, students can now order numbers in relation to a counting sequence.

Lesson 14 builds upon the decomposition work in Lesson 11 of Topic C. Students see both the expression 2 + 1 (Topic C) and the equation 3 = 2 + 1 (Topic D) as describing a stick of three cubes decomposed into two parts (**K.OA.3**). The difference now is that the equal sign is shown. Take note that the sum is written first to demonstrate something whole being separated into two parts as opposed to two parts being joined to make a whole.

Lesson 15 extends ordering and writing numerals to 5. This topic culminates with students applying their decomposition knowledge with totals of 4 and 5 without equations. For example, five bananas are in the bowl. Two are yellow, and three are green. Draw the bananas.

| A Teaching Sequence Toward Mastery of the Concept of Zero and Working with Numbers 0–5 |
| --- |
| **Objective 1:** **Understand the meaning of zero. Write the numeral 0.**
(Lesson 12) |
| **Objective 2:** **Order and write numerals 0–3 to answer *how many* questions.**
(Lesson 13) |
| **Objective 3:** **Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.**
(Lesson 14) |
| **Objective 4:** **Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.**
(Lesson 15) |
| **Objective 5:** **Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.**
(Lesson 16) |

Lesson 12

Objective: Understand the meaning of zero. Write the numeral 0.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (30 minutes)
■ Student Debrief   (3 minutes)
    Total Time   **(50 minutes)**
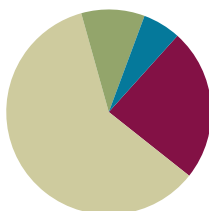
Fluency Practice (12 minutes)

- Birthday Candles **K.CC.4a**   (6 minutes)
- Finger Counting **K.CC.2**   (3 minutes)
- Sunrise/Sunset Counting to 5 **K.CC.2**   (3 minutes)

Birthday Candles (6 minutes)

Materials: (S) 1 die, birthday cake (Lesson 5 Fluency Template), crayons

Conduct the activity as outlined in Lesson 5.

This is the second time this activity appears in the module. Be especially cognizant of and ready to support students who must recount each time, rather than take off or put on more crayons, to represent the new number.

Finger Counting (3 minutes)

Conduct the activity as outlined in Lesson 8.

As students grow more capable in complicated sequences, consider introducing 6. Focus on the transition between 5 and 6. Repetition will be valuable in seeing 5 as a unit.

Sunrise/Sunset Counting to 5 (3 minutes)

Conduct the activity as outlined in Lesson 7.

If students exhibit mastery, consider counting higher.

Application Problem (5 minutes)

Draw a group of 4 apples. Make some red and some green. Tell your friend how many are red and how many are green. Did you and your friend have the same number of red apples?

Concept Development (30 minutes)

Materials: (S) Bag of 5 loose linking cubes (varied colors), personal white board, numeral formation practice sheet 0 (Lesson 12 Practice Sheet)

T: Please put all of your cubes in front of you. Pick up a cube. How many cubes are you holding now?

S: 1.

T: Pick up 1 more cube, and connect it to your first cube. How high is your tower now?

S: 2 cubes.

T: (Repeat with the remaining cubes to make a tower of 5.) Hold your tower high! Now, we will take it apart. Take off one of your cubes, and put it on the table. How many cubes are left in your tower?

S: 4.

T: Let's take off another one. (Repeat and ask the number left each time until the students are holding only one cube.) How many cubes are left in your tower?

S: 1.

T: Please put down the last cube. How many cubes are left in your tower?

S: None!

T: The math word for *none* is **zero**. Repeat after me: There are zero cubes left in my tower.

S: There are zero cubes left in my tower.

T: (Repeat the finger counting from fluency, starting from 1 going up to 5 and from 5 down to zero as a fist.) Our numeral for zero looks like the outline of our fist. (Trace a zero around the outside of your fist, and then write 0 on the board.)

T: Please put all of your cubes back in the bag. Let's practice writing a zero. Make it with your finger in the air as I draw it on the board.

T: We start at the top middle of the writing frame and then make a big curved line that just touches each side as we go along. We end up back at the top. (Demonstrate and say, "Curve from the top; be a hero! Close the loop and make a zero.")

> **NOTES ON MULTIPLE MEANS FOR ENGAGEMENT:**
>
> As an extension of this activity, ask students when they have a 3 tower, "How many cubes do I have to take off to have 0?" "Let's check and see if that is correct. 4 tower to 0? 5 tower to 0?"

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Make a poster with the zero (in fancy letters). Post the chart and ask the students what it says. Ask the children what else is on the poster. What does zero mean?

EUREKA MATH™   **Lesson 12:**   Understand the meaning of zero. Write the numeral 0.

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T: Let's practice zero a few more times together. Use your fingers on your table (or the carpet) while I write on the board. (Demonstrate and repeat the rhyme with the students a few more times.)

T: Now, you may practice making zeroes on your own.

Distribute personal white boards with numeral formation practice sheet inserts to students. Have students begin at the dot. Begin with finger tracing if necessary. With dry erase markers, practice the number formation. When students demonstrate fluency, remove the inserts and have them write the zeroes directly on the sheets with pencil. They may then complete the counting Problem Set.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (3 minutes)

Lesson Objective: Understand the meaning of zero. Write the numeral 0.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many eyes (noses, fingers, or feet) do you have?
- How many tails do you have?
- Use this frame to tell about more things we have none of: *We have **zero** _____ in our classroom*. Have fun with this. Get them to talk to a partner after generating some ideas (elephants, zebras, or spaceships).
- What is the math word for none? Let's say our rhyme one more time! (Repeat the rhyme, and write the numeral zero in the air together.)

MP.7

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Name _____   Date _____

Insert the template into your personal white board. Practice with your dry erase marker. When you are ready, write in pencil on the paper.
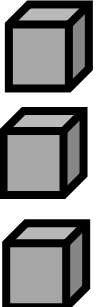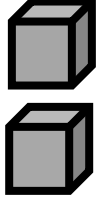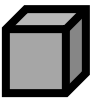

numeral formation practice sheet 0

EUREKA MATH™   **Lesson 12:**   Understand the meaning of zero. Write the numeral 0.   engage^{ny}   125

Name _____   Date _____

Circle the number that tells how many.

0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3

Count the apples in each tree. Circle the number.
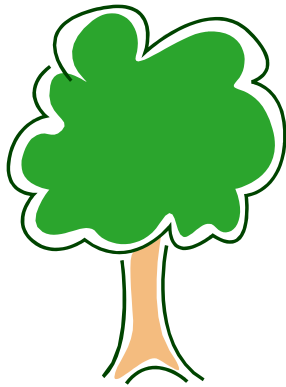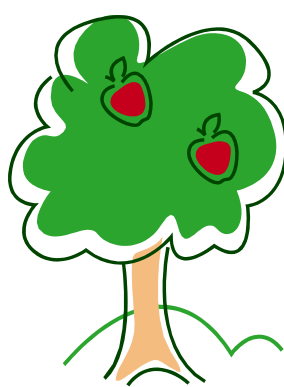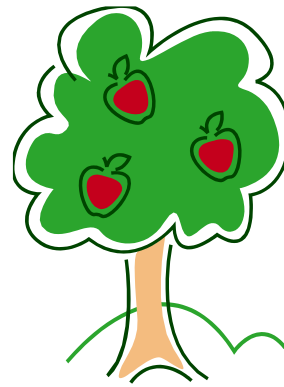
0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3

How many elephants are in the room?   _____

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Lesson 12:   Understand the meaning of zero. Write the numeral 0.

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Name _____   Date _____

✏️ Color in the blocks to show how many girls, boys, and aliens are at your table. Don't forget to count yourself!

Lesson 12:   Understand the meaning of zero. Write the numeral 0.

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Name _____   Date _____

How many? Draw a line between each picture and its number.

	0
	1
	2
	3
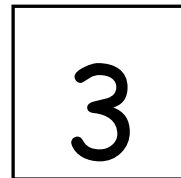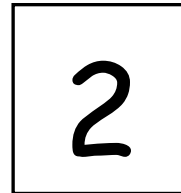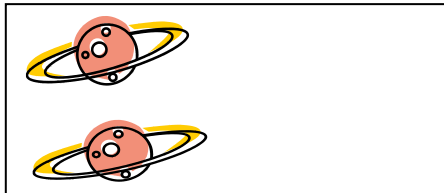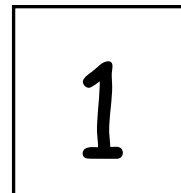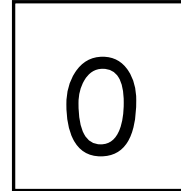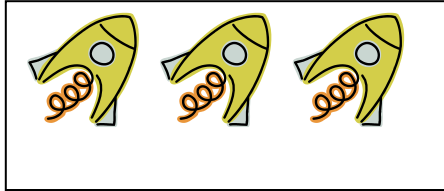
Write the numbers in the blanks.

___ , 1,   2,   3

0, ___ ,   2,   3

Lesson 13

Objective: Order and write numerals 0–3 to answer *how many* questions.

Suggested Lesson Structure

■ Fluency Practice   (11 minutes)
■ Concept Development   (22 minutes)
■ Application Problem   (7 minutes)
■ Student Debrief   (10 minutes)
    Total Time   **(50 minutes)**

Fluency Practice (11 minutes)

- Rekenrek Roller Coaster **K.CC.4a**   (4 minutes)
- Show Me Fingers to 5 **K.CC.5**   (2 minutes)
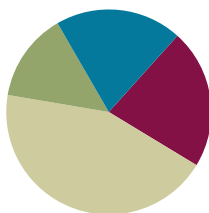- Hide and See (3 as the Total) **K.CC.4a**   (5 minutes)

Rekenrek Roller Coaster (4 minutes)

Materials: (T) 20-bead Rekenrek

Note: At this point in the module, consider introducing 6, either with 5 red and 1 white on the top row, or with 5 red on the top row, 1 red on the bottom row (like 5-groups). Focus on the transition from 5 to 6. Guide students to realize that it is, in fact, a crucial transition by discussing what they notice about the representations of 5 and 6 on the Rekenrek (e.g., color change, or 5 on top, 1 more on the bottom).

Conduct the activity as outlined in Lesson 7.

Show Me Fingers to 5 (2 minutes)

Note: Change directions frequently, as before, but now include 0 (indicated with a closed fist) in the sequence.

Conduct the activity as outlined in Lesson 2.

Hide and See (3 as the Total) (5 minutes)

Conduct the activity as outlined in Lesson 11, but include 0 and 3, with 3 as the total. Variation: Students can say the expressions as they put the cubes together. This game can also be played with a partner.

Application Problem (7 minutes)

Johnny had 2 cookies in his lunchbox. He gave 1 to a friend and ate 1 himself. How many cookies does he have now?

Note: This Application Problem is reviewing the concept of 0 from Lesson 12 before continuing with number writing and counting to 3.

Concept Development (22 minutes)

Materials: (T) Cardboard picture frame (S) Personal white board with numeral formation practice sheet 1–3 (Lesson 13 Practice Sheet)

Preparation: Place three identical objects on a table.

- T: Look around the room. Finish this riddle: We have exactly 1 _____ in our classroom. (Wait for student responses.) Finish this riddle: We have exactly 2 _____ on our bodies. How about this one? We have exactly 3 _____ on the table. (Discuss responses.)

- T: Now that we have done some counting, let's practice writing those numerals. I know a little rhyme that will help us remember how to write the number 1. Echo me, please. "Top to bottom, then you're done. You just wrote the number 1."

- T: Now, say the rhyme while I write the number. (Write the numeral 1 inside a cardboard picture frame attached to the board.)

- T/S: Top to bottom, then you're done. You just wrote the number 1.

- T: Try it with me this time. Pointer fingers up!

- T/S: Top to bottom, then you're done. You just wrote the number 1. (Students write the numeral 1 in the air with their pointer fingers while the teacher writes it in the frame on the board.)

- T: Now, let's rug write it. Pointer fingers on the rug!

- T/S: Top to bottom, then you're done. You just wrote the number 1. (Write the numeral 1 with pointer fingers on the rug or on another surface that will provide tactile feedback.)

- T: (Repeat the exercise for the numerals 2 and 3 using the following rhymes.) "Half a moon, there's more to do; slide to the right, now that's a 2." "Backward C, backward C, and that is how you make a 3."

- T: You're ready to try it with your markers now!

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

It may be more beneficial for some students to write their numbers on a cookie sheet with sand or salt on it. Writing on the rug is sufficient for most students, but those who have trouble with visual discrimination may not see the number as clearly as other students.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Have students who would benefit from tactile experiences trace sandpaper numerals.

Send students back to the tables with personal boards prepared with the letter formation template. Guide them through the process by having them first locate the dot. Students may then trace the numerals with their fingers, if necessary, before writing the numbers with their markers. After students have had sufficient practice with their markers, direct them to remove the sheet from their personal boards and write with pencil.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (10 minutes)

Lesson Objective: Order and write numerals 0–3 to answer *how many* questions.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

MP.3

- What do you do when you need to find out how many? (Count.)
- What are some ways that you can tell or show how many? (Say the number, write the number, show how many fingers.)
- What could we tell someone by writing numbers? (How old I am, how many ears I have, how many ice cream scoops I want.)
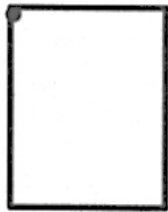
Exit Ticket (3 minutes)

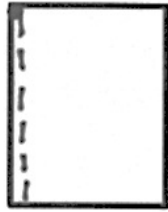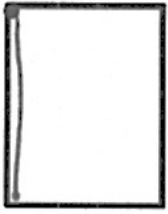After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 13:   Order and write numerals 0–3 to answer *how many* questions.

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Name _____   Date _____

Insert this page into your personal white boards. Practice with your dry erase marker. When you are ready, write your numbers in pencil on the paper.

numeral formation practice sheet 1–3

EUREKA MATH

Lesson 13: Order and write numerals 0–3 to answer *how many* questions.

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Name _____   Date _____

Write the missing numbers.

1 2 ___	3 2 ___
1 ___ 3	3 ___ 1
0 1 ___	___ 2 1
0 ___ 2	2 1 ___
___ 1 2	2 ___ 0

Count and write how many.

_____   _____

_____   _____
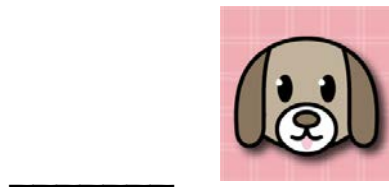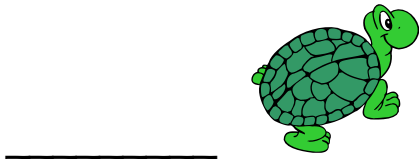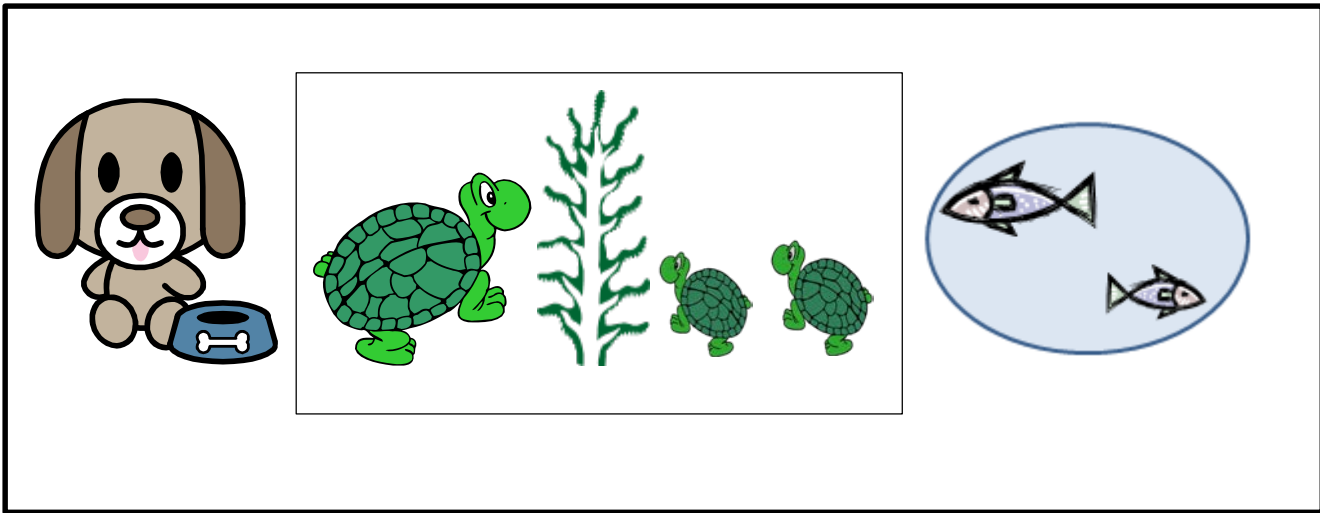
Name _____ Date _____

Count the objects.   **Write how many.**
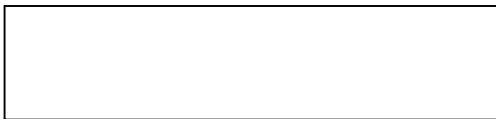
Fill in the missing numbers.

1, ____, 3   ____, 1, 2

3, 2, ____   ____, 1, 0

Lesson 13:   Order and write numerals 0–3 to answer *how many* questions.

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Name _____   Date _____

Draw ▣ (two) things you see in your kitchen.

How many?

_____

Draw ▣ (one) of your friends.

How many?

_____

Draw ▣ (three) things you like to play.

How many?

_____

How many pet monkeys 🐒 do you have? _____

Write the missing numbers:

3, 2, _____, _____   0, _____, _____, 3

Lesson 14

Objective: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

Suggested Lesson Structure

- ■ Fluency Practice   (13 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (27 minutes)
- ■ Student Debrief   (5 minutes)
- **Total Time**   **(50 minutes)**

Fluency Practice (13 minutes)

- ▪ Making 3 with Triangles and Beans **K.CC.4a**   (5 minutes)
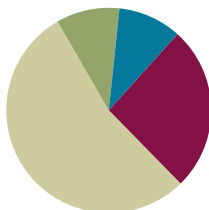- ▪ Making Three-Finger Combinations **K.CC.4a**   (4 minutes)
- ▪ Hide and See (3 as the Total) **K.CC.4a**   (4 minutes)

Making 3 with Triangles and Beans (5 minutes)

Materials: (S) 3 beans, paper or foam triangle

Repeat Triangles and Beans from Lesson 11, but include 0 and 3.

Making Three-Finger Combinations (4 minutes)

Conduct as outlined in Lesson 11, but include 0 and 3. Variation: Students can say the expressions.

Hide and See (3 as the Total) (4 minutes)

Conduct the activity as outlined in Lesson 11, but include 0 and 3, with 3 as the total. Variation: Students can say the expressions as they put the cubes together. This game can also be played with a partner.

Application Problem (5 minutes)

How many ears do you have? Write the number. How many heads do you have? Write the number. How many feet do you have? Write the number. How many wings do you have? Write the number. Stand with 2 friends. How many noses are in your group? Write the number. Draw something that has 1 ear, 2 heads, and 3 feet. Show your friend your picture.

Note: This Application Problem provides students with practice counting and writing numbers 0–3.

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Lesson 14: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

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Concept Development (27 minutes)

Materials: (S) Bag of 3 loose linking cubes

> T: Please take your linking cubes out of the bag, and put them in front of you. Pick up a cube. How many linking cubes are in your hand?
>
> S: 1.
>
> T: Write 1 in the air. (Demonstrate.) Pick up another cube, and join it to your first one. (Repeat these steps until the students have a tower of 3 cubes.) How many cubes do you have now?
>
> S: 3.
>
> T: Write 3 in the air. (Demonstrate.) Watch how I take my tower apart. (Break off one cube.) How many cubes do I have in my hands?
>
> S: 1 in that hand. 2 in the other hand.
>
> T: Did I pick up any more cubes?
>
> S: No.
>
> T: Did I drop some?
>
> S: No.
>
> T: So, I still have 3 cubes in my hands, but I made my 3 tower into a 1 tower and a 2 tower. Take your tower of 3, and show me how you can break it into a 1 tower and a 2 tower.
>
> S: (Break the whole tower into the two parts.)
>
> T: Watch me put my parts together to make a tower of 3 again. There is a special math way to write what I just did. (Write $3 = 1 + 2$.) We call this a **number sentence**. (Repeat the decomposition exercise to show that $3 = 2 + 1$.)
>
> **MP.4**
>
> T: Put your cubes back in the bag. I'm going to draw some cubes on the board. (Draw a rectangle divided into 3 squares to look like a linking cube tower.) I will color 2 squares red. I will color the rest blue. How many cubes are in my tower?
>
> S: 3.
>
> T: How many red?
>
> S: 2.
>
> T: How many blue?
>
> S: 1.
>
> T: I will write it the math way. Here is our number sentence. (Write $3 = 2 + 1$.)
>
> T: Can we do this with other things? (Draw a group of three balls on the board. Draw stripes on one of them.) How many balls are there?
>
> S: 3.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Many youngsters are visual learners. Take a linking cube and put a piece of sticky-sided magnetic tape on it. Do this with about two or three dozens of cubes. Take a metal cookie sheet and use the magnetic cubes to make towers, and show that the towers can be broken into different combinations. Use a different cookie sheet for each numeral.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Some students benefit from having a work mat to help them focus with their manipulatives. This work mat might show templates for towers of 3 (or 4 or 5). Depending on student needs, use the 2 and 1 combination and the 1 and 2 combination, etc.

Lesson 14: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

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T: How many have stripes?

S: 1.

T: How many do not have stripes?

S: 2.

T: 3 is the same as 1 and 2. I will write the number sentence: 3 = 1 + 2.

T: Now, we will practice finding the parts of three and writing the number sentences on our Problem Sets.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students color the picture to match the number sentence. Allow students to choose their own color combinations in order to informally assess their understanding of decomposition.
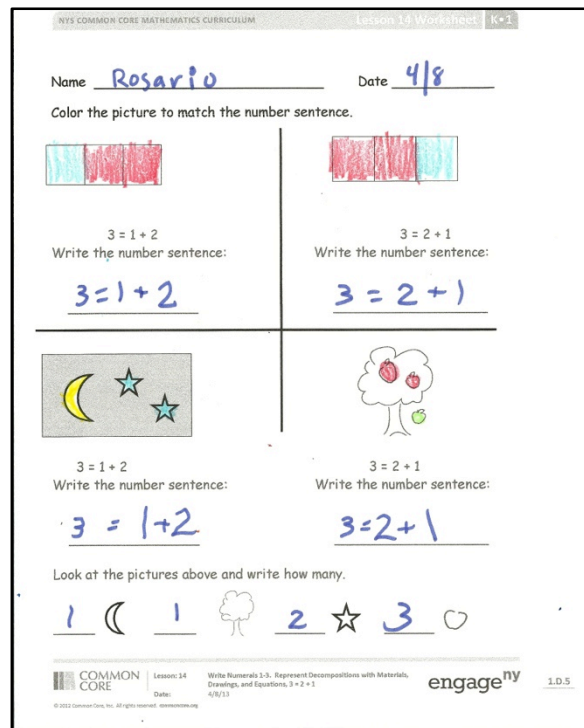
Student Debrief (5 minutes)

Lesson Objective: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many are in your tower all together?
- What are the parts of your tower?
- How would we say that as a **number sentence**? 3 is the same as _____ and _____.
- Could we break bigger towers into parts and make number sentences to match?
- When have you taken something whole and broken it into two parts? (Sand castles, papers, cakes, etc.)
- If you put the parts together again, do you get something whole again?
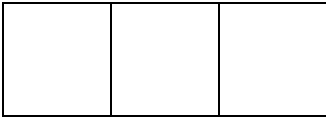
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 14: Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

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Name _____   Date _____

Color the picture to match the number sentence.

3 = 1 + 2

Write the number sentence:
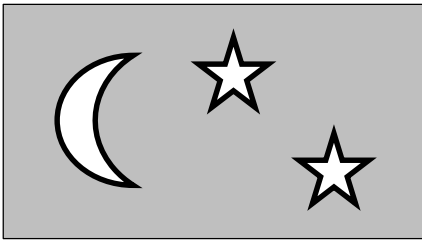
_____

3 = 2 + 1

Write the number sentence:

_____

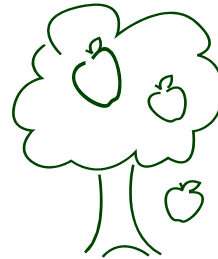3 = 1 + 2

Write the number sentence:

_____

3 = 2 + 1

Write the number sentence:

_____

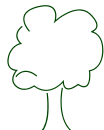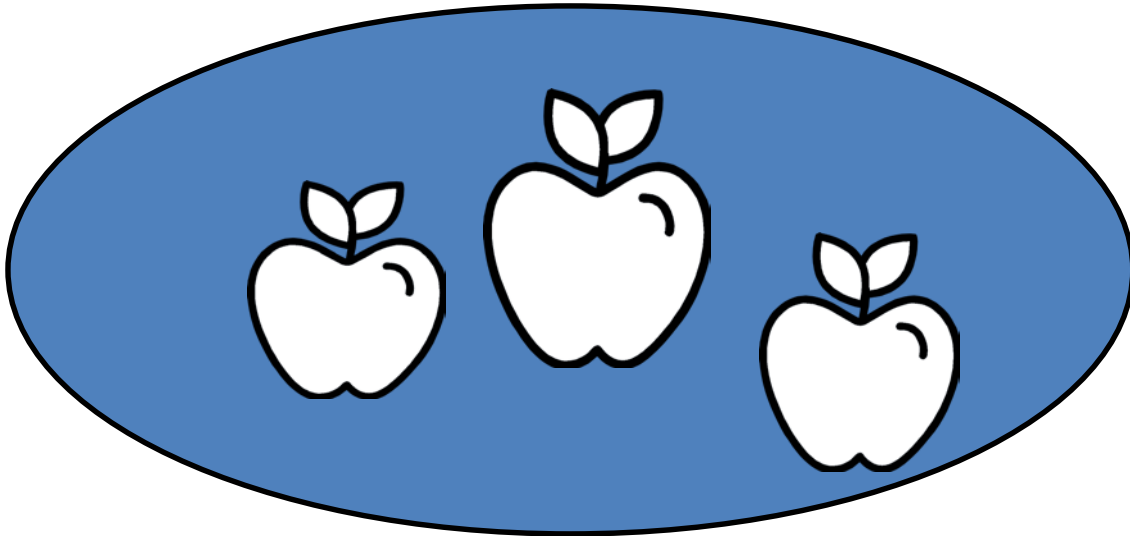Look at the pictures above, and write how many.

____ ☾   ____ 🌳   ____ ☆   ____ 🍎

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Lesson 14:   Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

engage^ny   **143**

Name _____   Date _____

Color the apples to show that 3 = 2 + 1.
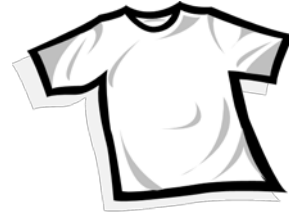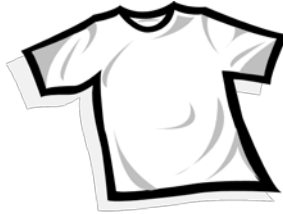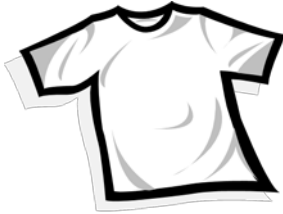

How many apples are there altogether? _____

3 is the same as _____ and _____.

3 apples = _____ apples + _____ apple

Name _____   Date _____

Color the shirts so that 1 is red and 2 are green.

There are _____ shirts. _____ = **1** + _____

Color the balls so that 2 are yellow and 1 is blue.

There are _____ balls. _____ = **2** + _____

Choose two of your favorite types of fruit.

Draw some of each on the plate to show that 3 = 2 + 1.

_____ fruits = _____ fruits + _____ fruit

_____ = _____ + _____

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Lesson 14:   Write numerals 1–3. Represent decompositions with materials,
drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2.

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Lesson 15

Objective: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (28 minutes)
■ Student Debrief   (5 minutes)
Total Time   **(50 minutes)**
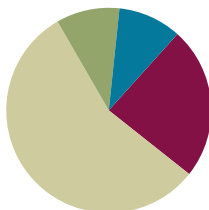
Fluency Practice (12 minutes)

▪ Beep Number **K.CC.4a**   (4 minutes)
▪ Birthday Cake Number Order **K.CC.4a**   (4 minutes)
▪ See, Count, Write Numbers to 3 **K.CC.5**   (4 minutes)

Beep Number (4 minutes)

Optional Materials: (T) Personal white board (S) Number path (Lesson 15 Fluency Template) (cut out 1 number path per student)

T: Let's play Beep Number! Listen carefully while I count. Instead of saying a number, I'll say *beep*. You can touch each number on your number path as I say it. When you know what the beep number is, raise your hand. 1, 2, beep! (Wait until all hands are raised, then give the signal.)

S: 3.

T: (Turn over the personal board to reveal the number 3 so that students can verify that their answer was correct.)

T: 1, 2, 3, beep, 5. (Wait until all hands are raised, then give the signal.)

S: 4.

T: (Turn over the personal board to reveal the number 4.) 1, 2, 3, 4, beep! (Wait until all hands are raised, then give the signal.)

S: 5.

T: (Turn over the personal board to reveal the number 5.) 1, beep, 3, 4, 5. (Wait until all hands are raised, then give the signal.)

S: 2.

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Lesson 15:   Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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Continue in a thoughtful sequence. Return to a simpler sequence if students have difficulty.

The use of the personal white board is optional, but it can increase engagement if students perceive the number as secret. Initially, students may rely heavily on the number line in order to determine the missing number. Challenge students to solve mentally when they are ready.

Birthday Cake Number Order (4 minutes)

Materials: (S) Birthday cake number order cards (Lesson 15 Fluency Template)

- T: Take your cakes out of the bag. Count how many candles are on each cake. (Circulate to listen as students do this.) Show me the cake for a one-year-old baby.
- S: (Hold up the cake with 1 candle.)
- T: Show me the cake for a kindergartener.
- S: (Hold up the cake with 5 candles.)
- T: Put your cakes in order from baby's first birthday to the kindergartener's cake.

Have students mix up the cakes and repeat putting them back in order. Kindergarten admission age requirements vary, so the questions may need to be adjusted.

See, Count, Write Numbers to 3 (4 minutes)

Materials: (S) Personal white board

- T: I'm going to show you some fingers. Count how many, and write the number. Show me your board when you are ready.

Start by showing fingers the Math Way (show the pinky of the right hand for 1). Then, show other fingers and other combinations.

Application Problem (5 minutes)

Draw 3 circles. Color 2 blue and 1 red. Complete the number sentence: 3 = _____ + _____.

Note: This Application Problem continues to link the previous day's lessons with the current day's lesson.

Lesson 15: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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Concept Development (28 minutes)

Materials: (T) Personal white board or chart paper and sticky notes; cardboard picture frame for writing
(S) Personal white board with numeral formation practice sheet 4–5 (Lesson 15 Practice Sheet)

Display varying arrangements of groups of objects in the center of the circle. There should be two groups of 4 things and two groups of 5 things (e.g., pencils, cups, books of similar size, animals, markers, and blocks).

- T: We are going to play Count, Wait, and Say How Many. Count how many there are in the group I point to. Wait for my magic snap, and then say how many. (Repeat until students demonstrate fluency in counting the groups.)
- T: We are going to count our groups again and make a graph on the white board to record our counting.
- T: Count the erasers.
- S: 1, 2, 3, 4, 5.
- T: We will show how many we counted by coloring the bottom 5 squares in our eraser column. (Student can use sticky notes instead, if desired.)
- T: Count the keys. (Repeat the procedure for keys, personal boards, and scissors.)
- T: Now, we'll learn some more about how to tell how many by writing numerals 4 and 5. We will learn some new rhymes to help us. Let's start with 4: "Trace down the side; cross the middle for fun. Top to bottom, and you are done!" (Demonstrate in the writing frame while students write the numeral 4 in the air with their pointer fingers. Repeat several times.)
- T: Now, let's rug write it. Pointer fingers on the rug!
- T/S: (Repeat the rhyme while writing the numeral 4 with pointer fingers on the rug or another surface that will provide tactile feedback.)
- T: Let's write number 5. "Trace down the side; curve like that. Back to the dot, and give it a hat!" (Demonstrate in the writing frame.) Try it with your skywriting while I show you in the frame. Say it with me. (Demonstrate several more times while students write in the air.)
- T: Can you rug write it now? Pointer fingers on the rug! (Practice for several more iterations to provide tactile feedback.)
- T: You're ready to try it with your markers now! Let's do some practice on our personal white boards.

Send students back to their tables with their personal white boards prepared with the writing insert. Guide them through the process by having them first locate the dot, finger tracing the numeral if necessary, then having them complete the practice sheet with a marker. After students have had sufficient practice with their markers, direct them to remove the sheet from their personal boards and write with pencil.

> ### NOTES ON MULTIPLE MEANS OF REPRESENTATION:
>
> Some students may find a graph confusing. Take a poster board, and with colored tape, divide it into sections. Allow the students to place the items in the correct spaces. As children count up the number of objects, let them put the correct number card in the space so that they see how the count increases.

Lesson 15:   Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students count the objects and write how many there are in the box.

Student Debrief (5 minutes)

Lesson Objective: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many objects did we count together? Look at our graph to help you remember.
- How many objects did you count in each group of the Problem Set?
- Did you count the same number as your friend?
- Practice skywriting your numbers 4 and 5, saying the rhyme, two more times.
- What is different about writing 4 and writing 5? 0 and 4? 0 and 5?
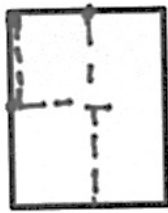
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____   Date _____

Insert the template into your personal white board. Practice with your dry erase marker. When you are ready, write in pencil on the paper.

_____   _____

_____   _____

Write the missing numbers:

_____, 2, 3, _____, _____

_____, 4, 3, _____, _____

1, 2, _____, _____, _____

_____

numeral formation practice sheet 4–5

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Lesson 15: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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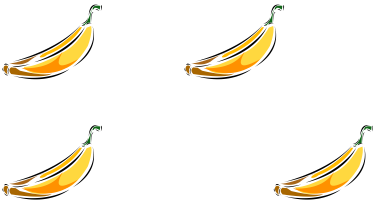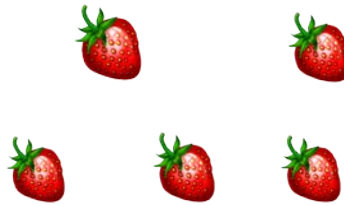Name _____   Date _____
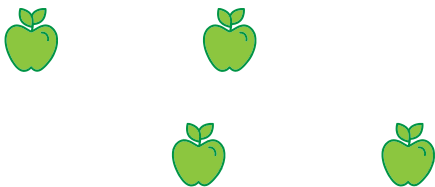
Count and write how many. Circle a group of four of each fruit.

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Lesson 15:   Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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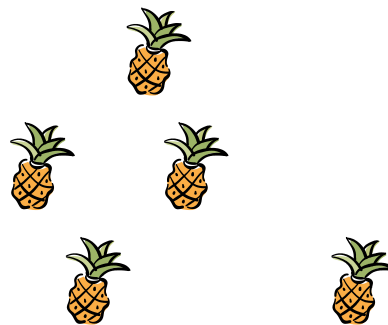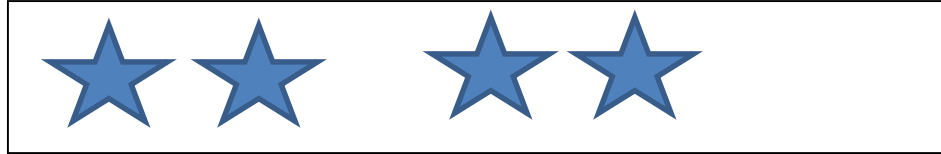
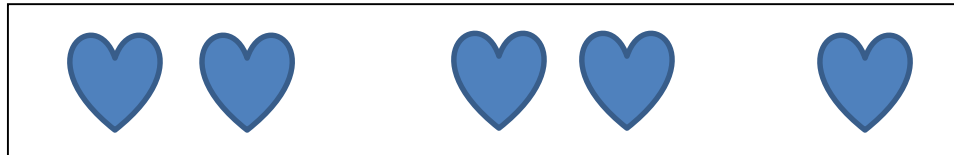Name _____   Date _____

How many?

_____

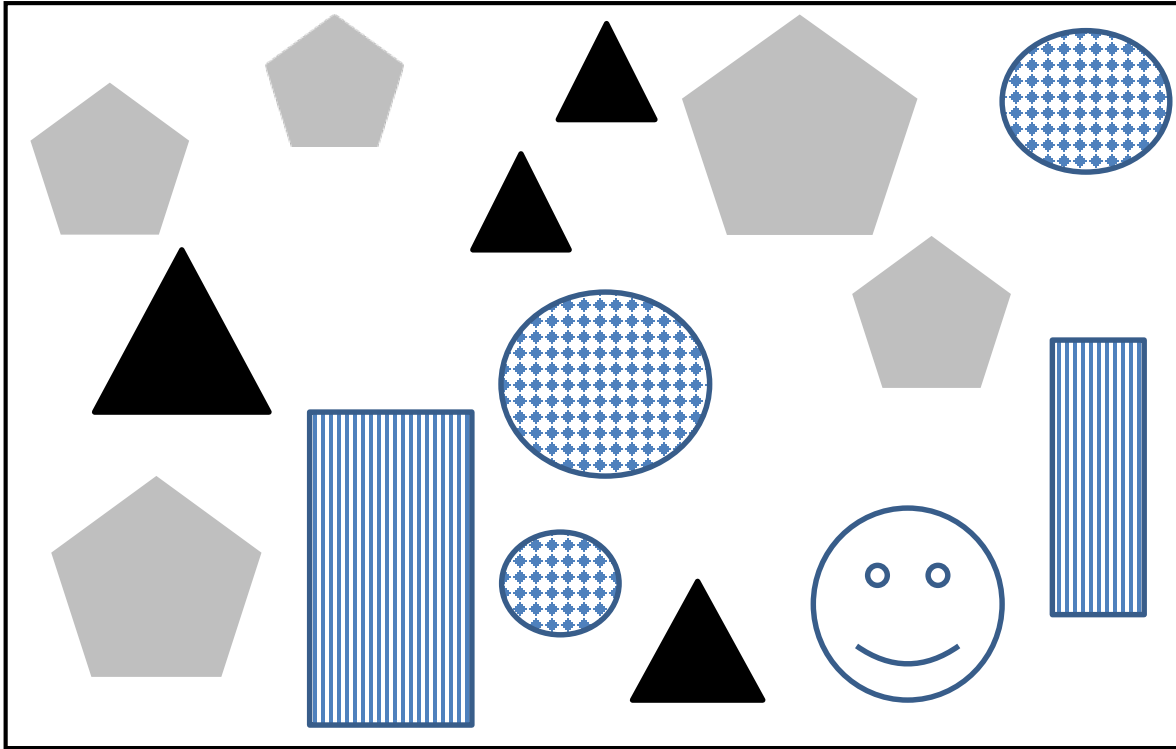How many?

_____

Are there more or ? Circle the shape that has more.

Write the missing numbers:

1, 2, 3, _____, _____

Name _____ Date _____

Count the shapes and write the numbers. Mark each shape as you count.

How many? (smiley face) _____ (checkered circle) _____ (striped rectangle) _____

(gray pentagon) _____ (black triangle) _____ (checkered diamond) _____

Write the missing numbers:

$$0, 1, \underline{\quad}, 3, \underline{\quad}, \underline{\quad}$$

$$\underline{\quad}, \underline{\quad}, 3, 2, 1, \underline{\quad}$$

Lesson 15: Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

number path

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Lesson 15:   Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count.

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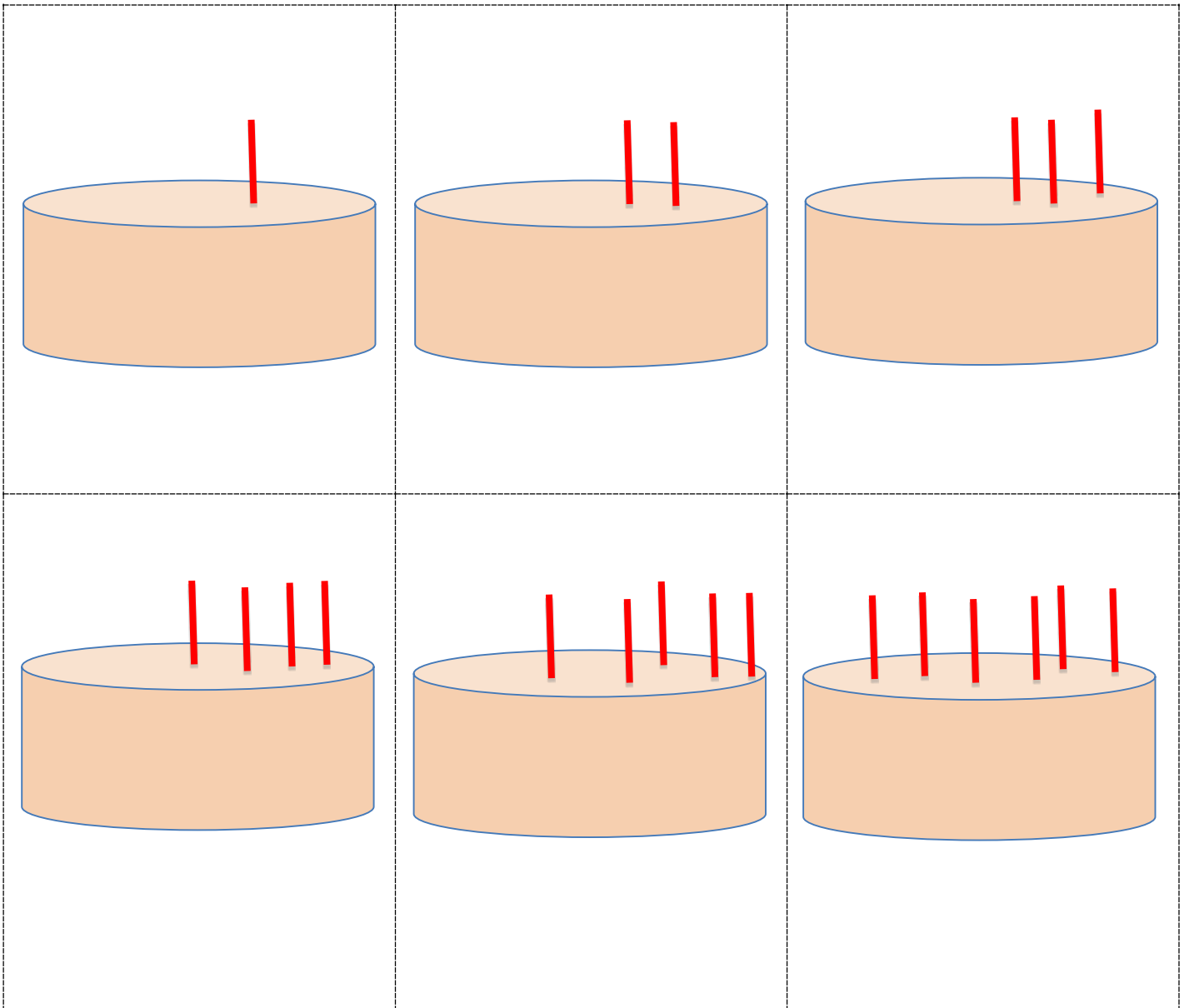
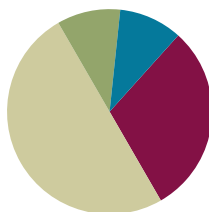birthday cake number order cards

Lesson 16

Objective: Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

Suggested Lesson Structure

■ Fluency Practice   (15 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (5 minutes)
   Total Time   **(50 minutes)**

Fluency Practice (15 minutes)

- Make 4 with Squares and Beans **K.CC.4a**   (6 minutes)
- 5-Frames: Counting Dots and Spaces **K.CC.4a**   (4 minutes)
- Take the Cake **K.CC.4a**   (5 minutes)

Make 4 with Squares and Beans (6 minutes)

Materials: (S) 4 beans, paper or foam squares

T: Touch and count the corners of the square.
S: 1, 2, 3, 4.
T: Touch and count your beans.
S: 1, 2, 3, 4.
T: Our job is to make 4. Put 3 of your beans on the corners of your square. Keep the other one in your hand. How many beans on your square?
S: 3.
T: How many beans in your hand?
S: 1.
T: We can tell how to make 4 like this: 3 and 1 make 4. Echo me, please.
S: 3 and 1 make 4.
T: Show me 2 beans on your square. Keep the rest in your hand. How many beans on your square?
S: 2.
T: How many beans in your hand?
S: 2.

Lesson 16:   Write numerals 1–5 in order. Answer and make drawings of
              decompositions with totals of 4 and 5 without equations.

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T: Raise your hand when you can say the sentence. (Wait until all hands are raised, and then give the signal.)

S: 2 and 2 make 4.

Continue with placing 1 bean on the square, then 4, and finally 0, to work through all of the number combinations.

5-Frames: Counting Dots and Spaces (4 minutes)

Materials: (T) 5-frame cards (Lesson 10 Fluency Template)

Conduct the activity as outlined in Lesson 10. After counting dots and spaces, have students describe the compositions of 5. For example, students count 3 dots and 2 spaces, so 3 and 2 make 5.

Take the Cake (5 minutes)

Materials: (S) Birthday cake number order cards per pair (Lesson 15 Fluency Template)

Working with a partner, have students put the birthday cake cards in order from the baby's cake to the six-year-old's cake.

1. Partner A closes his eyes.
2. Partner B takes one of the cards (or turns it over).
3. Partner A opens his eyes, and counts to determine which card is missing.
4. Switch roles, and play again.

Application Problem (5 minutes)

Draw 4 cups and 5 straws. Write the number of each. Circle the number that is more.

Note: This Application Problem continues to focus on groups, counting objects in a group, and number writing. This problem connects learning throughout the module.

Concept Development (25 minutes)

Materials: (T) Personal white board, 5 magnetic shapes or pictures (divided by a line down the middle)
(S) 5-group cards 1–5, shuffled (Lesson 7 Template 2); bag of 5 loose linking cubes

T: We are going to play a game called Mix and Fix. Each of you has a bag of cards in front of you. The cards have numerals 1 to 5 on them. Take your cards out, and check to see that you have all of your cards.

MP.1

S: (Check cards, providing a quick review of the numbers.)

T: Mix up your cards, and turn them over so that you can only see the dots, not the numbers. On the count of three, turn your cards over, and put them in order starting with 1 and going up to 5. You will want your cards to say 1, 2, 3, 4, and 5.

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Lesson 16: Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

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T: Are you ready? Set. GO!

S: (Race to place their cards in order.)

T: (Circulate to ensure accuracy.) Point to the numbers, and count your cards.

S: 1, 2, 3, 4, 5. (Repeat the exercise, putting cards in decreasing order.)

T: Put your cards away, and take out your linking cubes. Please make a tower of 4. You will use the tower while we do some work together on the board. I will be looking for some really focused mathematicians to help me! (Show students four of the shapes in a line on the board, and call for a volunteer.)

T: (Select a volunteer.) How many shapes are on the board?

S: 4.

T: Put some on one side of the line, and put the rest on the other.

S: (Arranges shapes on board, for example, two on one side and two on the other.)

T: Thank you. You may sit down now. Did she pick up any new shapes? Did she drop any shapes?

S: No.

T: How many shapes are still on the board?

S: 4.

T: Look at how many shapes are on each side of the line. She chose to use her 4 shapes to make groups of 2. Take your tower of 4, and break it into groups of 2. Show me your new towers.

S: (Hold up towers.)

T: We can talk about this the special math way! Repeat after me: 4 is the same as 2 and 2.

S: 4 is the same as 2 and 2.

T: Put your towers together again. Can anyone arrange our 4 shapes a different way? (Repeat the exercise with another volunteer, making sure that a different decomposition of 4 is represented. Have the students model the new situation with their cubes.)

T: Let's try this with 5 shapes! Put another cube on your tower to make 5. (Repeat the exercise, this time decomposing five objects on the board two different ways and having the students model each situation with their cubes.)

T: Put your linking cubes away. We are going to do some more work with groups of 4 and 5 on our Problem Sets.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Have a number path or chart available as a reference for students who are still unsure about their counting.

A simple 1–5 number path might be sufficient.

NOTES ON MULTIPLE MEANS FOR ENGAGEMENT:

As an extension, have the more capable students experiment with making towers of 6 and 7. Have them find different combinations. If possible, make a sheet that shows all of these combinations.

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Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (5 minutes)

Lesson Objective: Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many did you color red? How many blue? Why did you choose to do it that way?
- Did the way you colored it change the whole number of squares?
- Did we change the whole amount when we broke our towers or our groups into smaller ones?
- When we put them back together, did we change our whole amount?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.
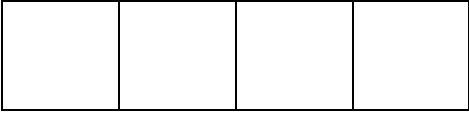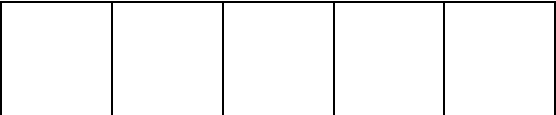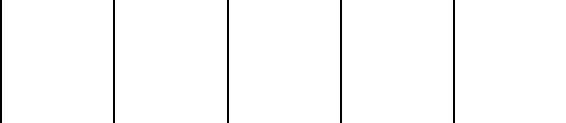
Lesson 16:   Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

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Name _____   Date _____

In each picture, color some squares red and some blue. Do it a different way each time.

How many squares? _____

How many squares? _____

How many squares? _____

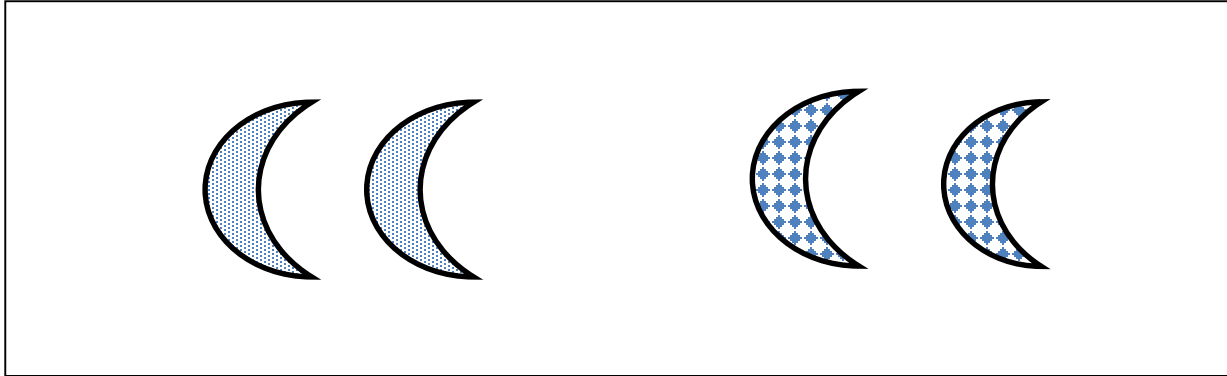How many squares? _____

Draw more circles to make 4.

OOO	OO	O

Draw more X's to make 5.

XXXX	XXX	XX	X

Name _____ Date _____

How many 🌙 ? _____ How many 🌙 ? _____

How many altogether? _____

How many 🙂 ? _____ How many 🙁 ? _____

How many altogether? _____

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Lesson 16:   Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

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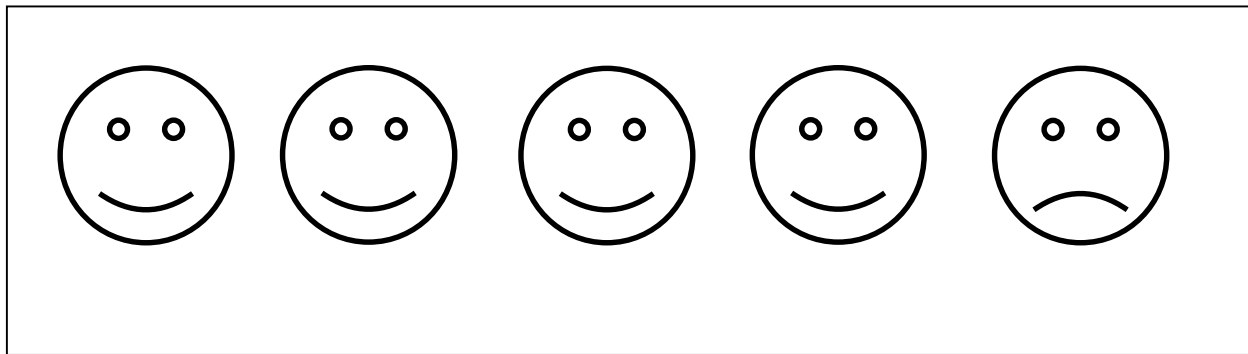
Name _____   Date _____

Write the missing numbers:

1, 2, ____, 4, ____   5, ____, 3, 2, ____

____, 3, 2, 1, ____   ____, 1, 2, ____, 4

Draw 3 red fish and 1 green fish.

How many fish are there in all? There are _____ fish.

3 fish and 1 fish make _____ fish. 4 is the same as _____ and _____.

Make 2 happy faces and 3 sad faces.

How many faces are there in all? There are _____ faces.

2 faces and 3 faces make _____ faces.

5 is the same as _____ and _____.

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Lesson 16:   Write numerals 1–5 in order. Answer and make drawings of
decompositions with totals of 4 and 5 without equations.

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Kindergarten Mid-Module 1 Assessment (Administer after Topic D)

Kindergarten End-of-Module 1 Assessment (Administer after Topic H)

This may well be the students' first assessment experience. Assessment time is a critically important component of the student–teacher relationship. It is especially important in the early grades to establish a positive and collaborative attitude when analyzing progress. Sit next to the student rather than opposite, and support the student in understanding the benefits of sharing and examining her level of mastery.

Please use the specific language of the assessment and, when possible, translate for non-English speakers (this is a math rather than a language assessment). If a student is unresponsive, wait about 15 seconds for a response. Record the student's results in two ways: (1) the narrative documentation after each topic set and (2) the overall score per topic using A Progression Toward Mastery. Use a stopwatch to document the elapsed time for each response.

Within each assessment, there is a set of problems targeting each topic. Each set is composed of three or four related questions. Document what the student did and said in the narrative, and use the rubric for the overall score for each set.

If the student is unable to perform any part of the set, her score cannot exceed Step 3. However, if the student is unable to use her words to tell what she did, do not count that against her quantitatively. Be aware of the difference between a non-native English speaker's and a native English speaker's ability to articulate something. If the student asks for or needs a hint or significant support, provide either, but the score is automatically lowered. This ensures that the assessment provides a true picture of what a student can do independently.

If a student scores at Step 1 or 2, repeat that topic set again at two-week intervals, noting the date of the reassessment in the space at the top of the student's record sheet. Document progress on this one form. If the student is very delayed in her response but completes it, reassess to see if there is a change in the time elapsed.

House the assessments in a three-ring binder or student portfolio. By the end of the year, there will be 10 assessments for each student. Modules 1, 3, 4, and 5 have two assessments each, whereas Modules 2 and 6 have only one. Use the Class Record Sheet following the rubric for an easy reference look at students' strengths and weaknesses.

These assessments can be valuable for daily planning, parent conferences, and for Grade 1 teachers preparing to receive these students.

Student Name: _____

Topic A: Attributes of Two Related Objects

Rubric Score: _____ Time Elapsed: _____

	Date 1	Date 2	Date 3
Topic A			
Topic B			
Topic C			
Topic D			

Materials: (S) Module 1 assessment picture cards (cut out)

T: (Identify the pictures while placing them in a row before the student.) Show me the pictures that are exactly the same.

T: How are they exactly the same?

T: Show me something that is *the same but* a little different.

T: Use your words, "They are the same, but…" to tell me how the bears are different.

What did the student do?	What did the student say?

Topic B: Classify to Make Categories and Count

Rubric Score: _____ Time Elapsed: _____

Materials: (S) Module 1 assessment picture cards (cut out), sorting mat

T: (Place all of the cards before the student.) Please sort the pictures into two groups on your sorting mat. (After sorting, have the student explain her reasoning.)

T: (Point to the objects that went in the backpack.) Count the things that are in this group. (Look for the student to answer "3" rather than "1, 2, 3." If the student recounts to find the answer, ask again.)

Set the sort aside for the Topic D assessment.

What did the student do?	What did the student say?

Topic C: Numbers to 5 in Different Configurations, Math Drawings, and Expressions

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 10 linking cubes

- T: (Put 5 loose cubes in front of the student.) Whisper-count as you put the cubes into a line. How many cubes are there?
- T: (Move the cubes into a circle.) How many cubes are there?
- T: (Scatter the cubes.) How many cubes are there?
- T: Please show this (show 2 + 1) using your cubes. (Have the student explain what he does. We might expect the student to make a linking cube stick of 3 and break it into two parts.)

What did the student do?	What did the student say?

Topic D: The Concept of Zero and Working with Numbers 0–5

Rubric Score: _____ Time Elapsed: _____

Materials: (S) Sort from Topic B (remove one identical bear for this assessment task so that there are 5 toys and 3 school items), numeral writing sheet

Note: Arrange the pictures as shown to the right. This arrangement is intended to give the student the opportunity to see 5 as *3 and some more,* without recounting all.
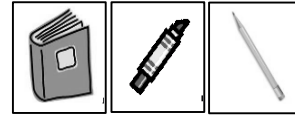
- T: How many things for school do you see? (Point to the top row.)
- T: (Point to the second row.) These are things we don't usually bring to school. How many are in this group? (Note if the student recounts all or determines the set of 5 using the set of 3 in any way.) How do you know it is 5?
- T: How many cats are shown here?
- T: Write your numbers in order from 0 to 5. (Note reversals, if any.)
- T: Write the number that tells how many toys there are.

What did the student do?	What did the student say?
Did the student show evidence of subitizing or recognizing embedded numbers, seeing 5 as 2 and 3 or 4 and 1?	

Mid-Module Assessment Task
Standards Addressed
Topics A–D

Know number names and the count sequence.

K.CC.3   Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

Count to tell the number of objects.

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.

a.   When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

b.   Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

K.CC.5   Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

K.OA.3   Decompose numbers less than or equal to 10 into pairs in more than one way, by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

Classify objects and count the number of objects in each category.

K.MD.3   Classify objects into given categories; count the numbers of objects in each category by count. (Limit category counts to be less than or equal to 10.)

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe and quantify steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency.* In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students can do now and what they need to work on next.

A Progression Toward Mastery

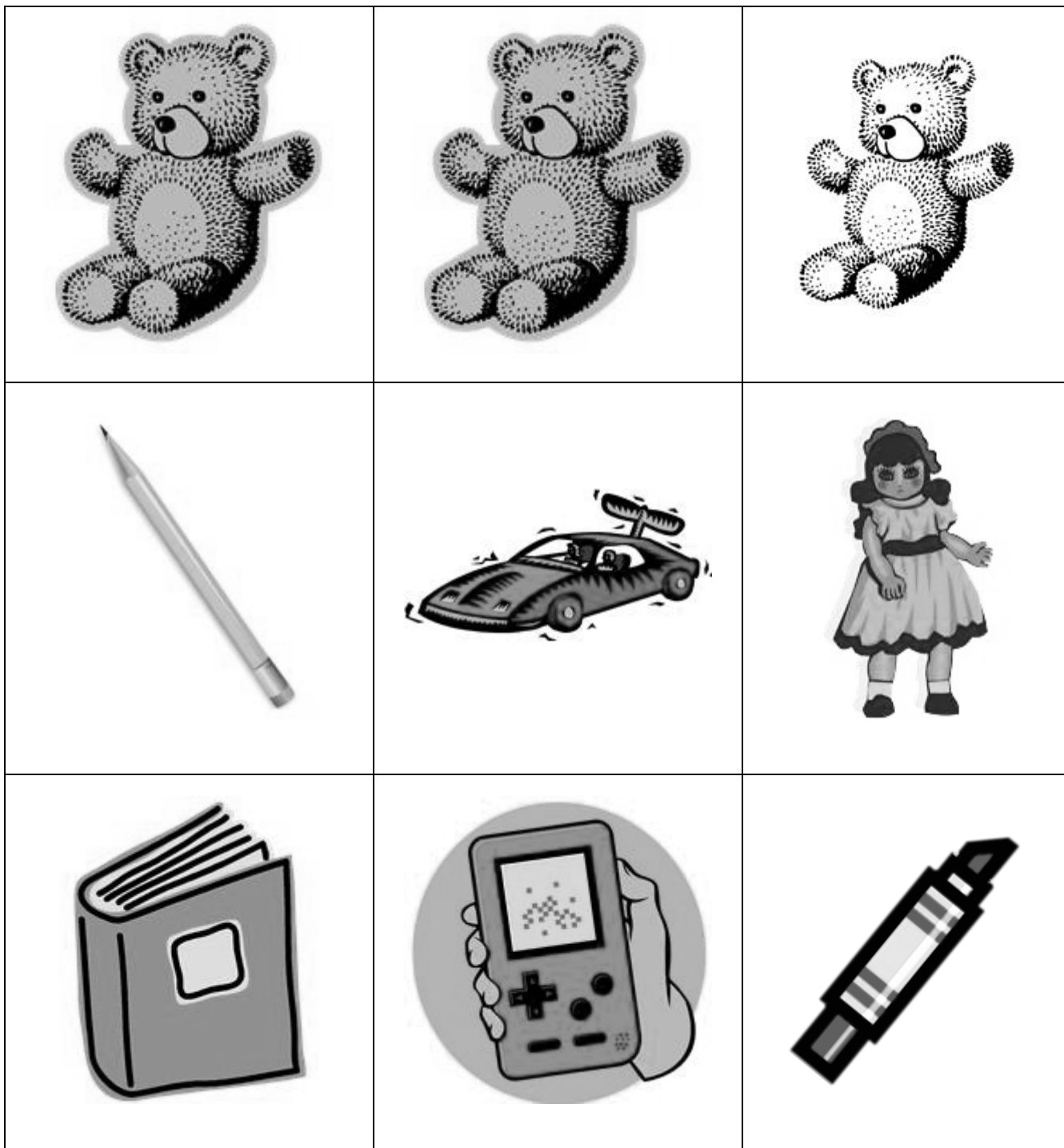| Assessment Task Item	STEP 1 Little evidence of reasoning without a correct answer. (1 Point)	STEP 2 Evidence of some reasoning without a correct answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
Topic A **K.MD.3**	Student shows little evidence of identifying or explaining similarities or differences. Student is almost non-responsive.	Student shows evidence of beginning to identify similarities and differences but is unable to explain those similarities or differences using words.	Student correctly identifies both sets of bears but provides a partial explanation of how the bears are similar or different. OR Student can explain the similarities and differences but cannot identify one of the sets of bears. (ELLs may point to express their insights and gain a score of 3 if their understanding is clear.)	The student correctly: ▪ Identifies the two large bears as being identical. ▪ Identifies similarities by attribute (size, color, type, etc.). ▪ Explains, in words, how the two bears differ based on either size or shade.
Topic B **K.CC.4a** **K.CC.4b** **K.MD.3**	Student shows little evidence of understanding how to sort or what reasonable categories might be. Student is unable to answer *3* or count correctly.	Student shows a beginning understanding of how to sort (with some misplaced items) and demonstrates early explanation skills with incomplete reasoning. Student recounts to answer *1, 2, 3.*	Student correctly sorts the pictures into two clearly distinct categories but cannot provide a reasonable explanation of the categories or why the items belong. OR Student provides a reasonable explanation of the categories but sorts incorrectly. Student is able to answer *3* without recounting.	Student correctly: ▪ Sorts the pictures into two distinct categories. ▪ Provides a reasonable explanation outlining the sorting categories and why the items belong (e.g., things we keep at home, things we need to bring to school). ▪ Answers *3* without recounting.

A Progression Toward Mastery

Topic C **K.CC.4a** **K.CC.4b** **K.CC.5** **K.OA.3** K.MD.3	Student shows little evidence of understanding how to count objects in any configuration and is unable to complete the addition task.	Student shows evidence of beginning to understand counting in a line, circle, and scattered configuration but is unable to do so accurately and consistently. Student recounts each time. Student attempts to add 2 + 1 but lacks an understanding of either how to add or how to interpret the expression.	Student arranges and counts cubes in a line, circle, and scattered configuration correctly, responding with *5* to each *how many* question, but recounts once. Student adds 2 + 1 but cannot explain how to add. OR Student accurately explains the process of addition but adds 2 + 1 incorrectly.	Student correctly: ▪ Arranges and counts 5 cubes into a line, circle, and scattered configuration. ▪ Answers *5* in response to each *how many* question without recounting. ▪ Breaks apart 3 to show the decomposition of 3 as 2 and 1 or 1 and 2.
Topic D **K.CC.3** **K.CC.4a** **K.CC.4b** **K.CC.5**	Student shows little evidence of understanding how to count items in a category. Student is beginning to form some numbers.	Student shows evidence of beginning to understand counting items in a category. Student is unsure of the word and meaning of *zero*. Student writes some numerals correctly, with reversals.	Student correctly counts the items in each category. Student gives some explanation about how she knows there are 5 toys but is unclear in her explanation (e.g., "I just know"). Student answers *none* when asked about the cats. Student writes four out of six numerals correctly, with a maximum of one reversal.	Student correctly: ▪ Identifies the number of items in each category (counting all in the toy category is acceptable). ▪ Gives a reasonable answer as to how he knows there are 5 toys (e.g., "I counted them all one at a time," or "I knew it was 3 up to the doll, then I just counted 2 more toys"). ▪ Understands and uses the word *zero* when asked how many cats there are. ▪ Writes numerals 0–5.

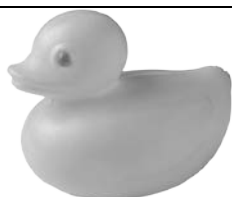| Class Record Sheet of Rubric Scores: Module 1					
Student Names:	**Topic A:** Attributes of Two Related Objects	**Topic B:** Classify to Make Categories and Count	**Topic C:** Numbers to 5 in Different Configurations, Math Drawings, and Expressions	**Topic D:** Concept of Zero and Working with Numbers 0–5	**Next Steps:**

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Module 1:   Numbers to 10

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Module 1 Assessment Picture Cards

Sorting Mat

Student Name _____

Numeral Writing

Topic E

Working with Numbers 6–8 in Different Configurations

K.CC.3, K.CC.4ab, K.CC.5, K.MD.3

Focus Standards:	K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).
	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
Instructional Days:	6	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

In Topic E, students engage in counting numbers above 5, namely 6, 7, and 8, in varied configurations. The students use their growing skill and knowledge of counting up to 5 to reason about larger numbers in the more difficult linear, array, circular, and scattered configurations.
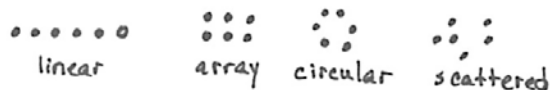
As in previous topics, students will count objects and match their count with a digit card to reinforce that the last number said when counting tells the number of objects. Lesson 18 extends the counting of larger numbers by having students count 6 out of a larger set and order numbers 1–6 based on their knowledge that each number represents a quantity of objects. This calls their attention to the concepts of part and whole. Their 6 beans are within the larger amount. Students might say they disappeared or are hiding. They are there, but no longer a distinct set.

Lesson 19 looks at numbers 5–7. Students count on their fingers from 1 to 7 and connect to 5-group images (for example, five fingers on one hand). "7 is 5 and 2. Here it is on my fingers." Reasoning about numbers 6–8 highlights the importance of the 5-unit. Lesson 20 explores the number 7. Students reason about strategies to count 7 objects in circular and scattered configurations. Partners might look at each other's 7 objects, one in array formation and the other in scattered formation, and discuss similarities and differences between their sets.

This concept is continued in Lesson 21 with the number 8. Students also consider the size of the objects being counted by comparing their 8 objects to a friend's. For example, "My cotton balls are bigger than your cubes, but when we count them, we both have eight!" The last lesson in this topic asks students to arrange and strategize how to count eight beans in a circular (around a cup) and scattered configuration. They also write the numeral 8 and find a path through the scatter set, comparing their paths with a partner.

A Teaching Sequence Toward Mastery of Working with Numbers 6–8 in Different Configurations
Objective 1: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6. (Lesson 17)
Objective 2: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order. (Lesson 18)
Objective 3: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images. (Lesson 19)
Objective 4: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?" (Lesson 20)
Objective 5: Compare counts of 8 in linear and array configurations. Match with numeral 8. (Lesson 21)
Objective 6: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner. (Lesson 22)

Lesson 17

Objective: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

Suggested Lesson Structure

■ Fluency Practice   (14 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (24 minutes)
■ Student Debrief   (7 minutes)
   Total Time   **(50 minutes)**
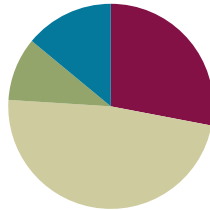
Fluency Practice (14 minutes)

- How Many Dots **K.CC.4a**   (5 minutes)
- Sunrise/Sunset Counting to 10 **K.CC.2**   (4 minutes)
- Birthday Candles **K.CC.4a**   (5 minutes)

How Many Dots (5 minutes)

Materials: (T) Large 5-group cards (Lesson 8 Template)

T: We're going to practice *listen, think, raise your hand, wait.* I'm going to show you some dots. Raise your hand when you have counted the dots, and then wait for the snap to say the number. Ready? (Show the 5 card. Wait until all hands are raised, and then give the signal.)

S: 5.

T: (Show the 6 card. Wait until all hands are raised, and then give the signal.)

S: 6.
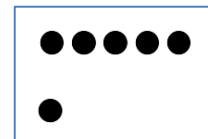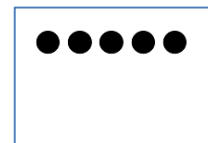
As students begin to demonstrate mastery, deviate from a predictable pattern, and challenge them to recognize the groups of dots more quickly.

Sunrise/Sunset Counting to 10 (4 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Although students do not work with numbers to 10 in this lesson, they need to develop fluency for upcoming lessons in which they work with numbers to 10 in depth.

Conduct the activity as outlined in Lesson 7, but instruct students to plan to reach 5 as the midpoint and 10 at the highest position. Some modeling may be required initially.

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Lesson 17:   Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

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Birthday Candles (5 minutes)

Materials: (T) 5-group cards (Lesson 7 Template 2)

Note: The use of 5-group cards in this activity provides an opportunity for differentiation. Assign the dot side for students who need extra work with counting. Assign the numeral side for those who need more work with number recognition.

Conduct the activity as outlined in Lesson 5, but use 5-group cards instead of dice. This activity can be played with a partner or individually.

Application Problem (5 minutes)

Finish this sentence: I could eat 5 _____. Draw a picture to show your idea.

Note: This quick review exercise is included to ensure that the students properly understand the magnitude of 5 as they go forward. For example, they could not eat 5 pizzas, but they could eat 5 strawberries.

Concept Development (24 minutes)

Materials: (S) Bag of 6 loose linking cubes, beans, or other counters; work mat; 5-group cards 1–6 (Lesson 7 Template 2); 2 5-group mats (Template)

Note: The work mat is used to help students keep their materials organized. Work mats can be a piece of construction or copy paper.

T: Take out your bag of linking cubes and your work mat. Count out four of your cubes, and put them on your work mat in a straight **row**. (Demonstrate this and the other placement activities on the board as the lesson progresses.) How many cubes do you have?	**NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
S: 4.	As an aid to English language learners, introduce the terms *row*, *column,* and *corner* prior to using them in the lesson. Make sure that students see the words written out with visuals representing the words, for example, a row of objects in a horizontal line and a column of objects in a vertical line.
T: (Continue to manipulate cubes, having students create rows and then **columns** of 2, each using the edges of the work mat as guides. Then, have students move the cubes to the corners of the work mat and count again.) Find the number card that shows how many cubes are on your mat. Hold it up, and say the number.	

S: (Hold up number card, and say 4.)

T: Take another cube out of your bag, and put it on your mat. Put all of your cubes in a row across your mat, and count your cubes again. How many cubes do you have?

S: 5.

T: That's right! We call this a **5-group**. (Repeat the manipulation series, having students use the edge of the work mat to make a column of 5.)

T: Now, you may move your cubes anywhere you like on the mat, but make sure that none of them falls off! Count your cubes. How many do you have?

S: 5.

T: Put your 5-group mat on your desk. Move your cubes to your 5-group mat. Find the number card that shows how many cubes. (Review with students the proper placement of the cubes on the 5-group mat if necessary, beginning with the dot on the upper left side.)

S: 5.

T: Put your cubes back on your work mat. Take one more cube out of your bag, and put all of your cubes in a row. Let's count the cubes together.

S: 1, 2, 3, 4, 5, …, 6. (Responses may vary.)

T: (Next, have students arrange their cubes into rows, and then columns of 3, counting the total each time.)

T: Take one of the cubes from your work mat, and put it onto your 5-group mat. Keep going until it is full. What do you notice?

S: There is one left over! They don't all fit.

T: You are right! Six is 1 more than 5. Where should we put our extra cube? (Wait for responses, and then guide students to see that they need to use the other 5-group. Circulate to ensure proper placement of the sixth cube.) We have 5 cubes on one five and 1 on the other five.   How many cubes do you have on your 5-group mat?

S: 6.

T: Yes! Five and 1 more is 6. I am going to write the number 6 on the board. (Demonstrate.) Look through your number cards to find the number that looks like mine. How many cubes do you have? Hold the number card up, and say the number.

S: 6.

T: Great counting! Please put your materials away, and get ready for your Problem Set.
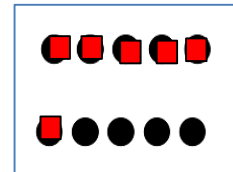
Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Extension: On the back of the Problem Set, have students draw 2 (3, 4, 5, 6) in as many different ways as they can.

Lesson 17:   Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

Student Debrief (7 minutes)

Lesson Objective: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Show us where you drew your objects in a line. Who did it a different way? Show us where you drew **rows**. Show us where you drew **columns**.
- How does the **5-group** help us count?
- Share with a partner how you counted and why.
- Have students discuss the different configurations.
- Look at the configurations you made when you drew 6. How is it similar to or different from your partner's?

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Have students take turns being the leader of a pair during their partner share. Allow students with special needs to show their meaning by pointing to visuals set up around the room to help them explain their thinking.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 17:   Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

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Name _____   Date _____

Draw 1 more. Then, count the objects and write the number in the box.
Use the code to color when you are finished.

| 3 blue | 4 red | 5 yellow | 6 green |
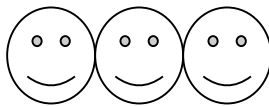
Draw 1 more cloud. | Draw 1 more face. | Draw 1 more heart.
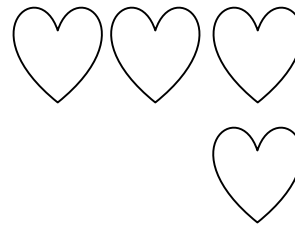
How many? [ ]   How many? [ ]   How many? [ ]

Draw 1 more.
Then, circle the number.
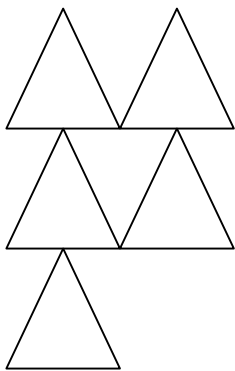
4   5   6

Draw 6 fingers.

Draw 6 beads.

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Lesson 17: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

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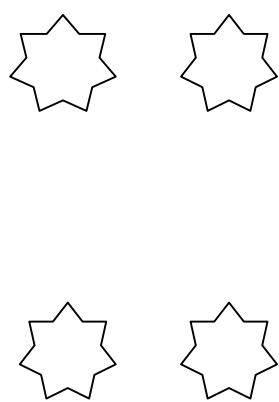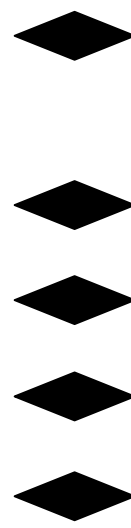
Name _____   Date _____

Fill in the missing numbers on the cards.

| 0 | 1 | | 3 | | 5 | 6 |

Count. Write how many in the box.

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Lesson 17: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

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Name _____   Date _____

Color 4.

Color 5.

Color 6.
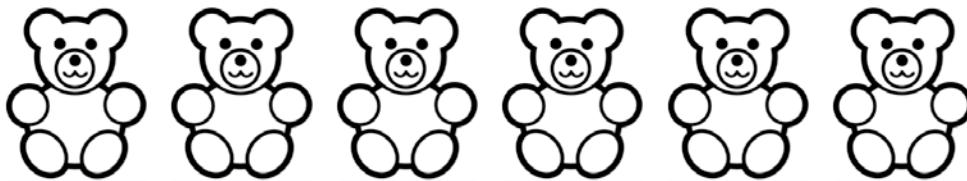
Connect the boxes with the same number.

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Lesson 17: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

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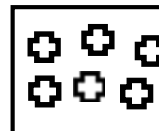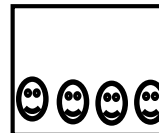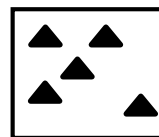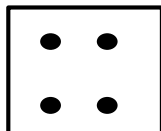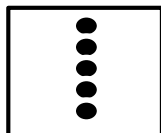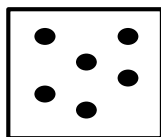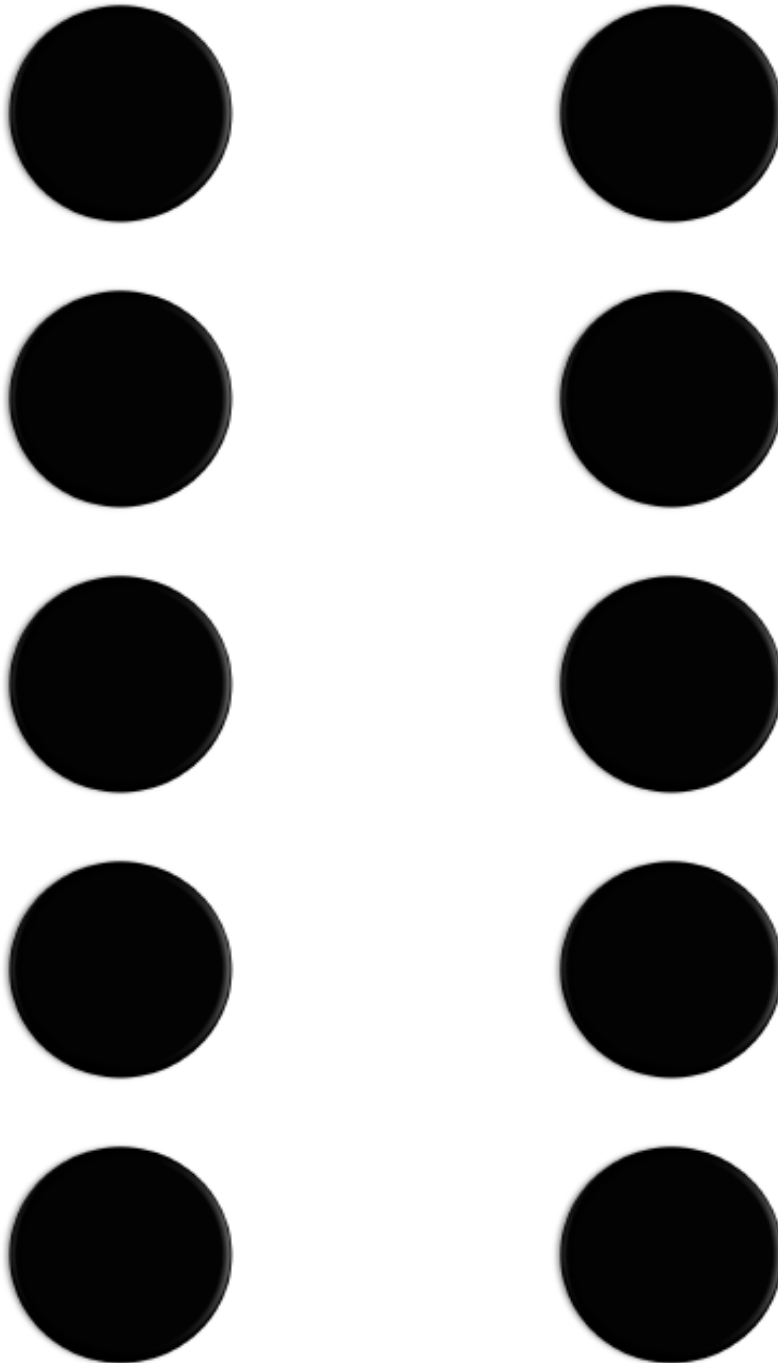
5-group mat

Lesson 18

Objective: Count 4–6 objects in circular and scattered configurations.
Count 6 items out of a larger set. Write numerals 1–6 in order.

Suggested Lesson Structure

■ Fluency Practice   (14 minutes)
■ Application Problem   (3 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)
   Total Time   **(50 minutes)**
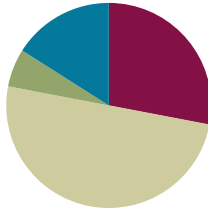
Fluency Practice (14 minutes)

▪ 5-Groups in Corners (4 and 5) **K.CC.4b**   (5 minutes)
▪ Birthday Cake Number Order **K.CC.4a**   (5 minutes)
▪ Beep Number **K.CC.4a**   (4 minutes)

5-Groups in Corners (4 and 5) (5 minutes)

T: When the music starts, calmly walk around the room, visiting corners of the room until
    you and your classmates can make a 5-group—don't forget to count yourself! How many
    can be in a group?
S: 5.
T: So, if you go to a corner that already has 4 people there, can you stay?
S: Yes!
T: What if there are already 5?
S: No.
T: Remember to check all the corners of the room. See if we can all get into 5-groups before the music
    stops!

If there are not enough students to make equal groups of the designated number, supplement
with puppets or stuffed animals.

Birthday Cake Number Order (5 minutes)

Materials: Birthday Cake (Lesson 15 Template 1)

Conduct the activity as outlined in Lesson 15, but this time have students match their numeral cards to the
cakes in order to build number order and number recognition skills.

EUREKA MATH™   **Lesson 18:**   Count 4–6 objects in circular and scattered configurations. Count 6
items out of a larger set. Write numerals 1–6 in order.   engage^ny   185

Beep Number (4 minutes)

Materials: (T) Personal white board (optional) (S) Number path (Lesson 15 Template 2) (optional)

Conduct the activity as outlined in Lesson 15, but this time, build incrementally to sequences beyond 5 as students exhibit mastery. A sample sequence is given below.

> 4, 5, beep!
>
> 4, beep, 6
>
> Beep, 5, 6
>
> 6, 7, beep!

Continue from simple to complex, identifying the number after, the number between, and finally, the number before, which is most difficult. Then, introduce higher numbers.

Variation: Extend the sequences to four numbers, for example 7, 8, beep, 10.

Remind students to use the procedure for answering choral response questions described in Lesson 8 (listen, think, raise your hand, wait for the snap) to allow sufficient wait time.

If students are reliant on a number path for determining the missing number, challenge them to try with their eyes closed!

Application Problem (3 minutes)

Make a row of 3 dots. Make another row with 3 dots right under the first one. Count your dots. Tell your friend how many.

Note: Reviewing the array for 6 prepares students for the circular and scattered counts in today's lesson.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board (S) 1 small clear plastic bag of 10 lima beans or small counters, 1 work mat inscribed with a large circle, 1 plastic cup, personal white board with numeral formation practice sheet 6 (Lesson 18 Practice Sheet)

T: You have beans in your bag! I wonder how many? Does anyone want to wonder with me?

S: (Responses will vary.)

T: Could you count them without taking them out of your bag?

S: There are 10.

T: I'd like each of you to take out 4 beans. (Pause.) Now, put them back in the bag. What happened to the 4 beans?

S: They got mixed up. → We can't see them!

T: We might not be able to see them, but are they still part of the group?

S: Yes.

Lesson 18:   Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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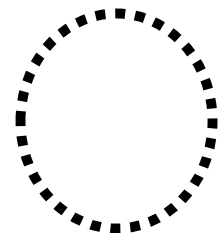
T: This time, take out 4 beans and put them in your cup. Put your hand on top of your cup, and shake them up. Shake harder! Pour them into the circle on your work mat like this. (Demonstrate.) Let's count how many are inside your circle.

S: 4.

T: Write the number 4 in the air. Now, move all of your beans to the edge of your circle to make a magic necklace. Count them again.

S: (Count.)

T: Are there still 4? When you are counting things on the necklace, how do you keep track of where you start?

S: (Responses will vary. Allow time to discuss counting strategies.)

MP.1

T: Put your beans back in the bag, and mix them up. Now, count out 5 into your cup. Shake them up, and pour them into your circle. How many are there now?

Repeat as above, allowing students time to count both the scattered and circular configurations and to write the numeral in the air. Have students return the beans to the bag, and repeat one more time with 6 objects.

T: Great counting! Now, put your cups away. Watch how I write the number 6. Follow along with your fingers in the air. "Monkey's tail needs a fix! Come on, let's make a 6." (Demonstrate several times. Follow by having children write on the rug or other surface for tactile practice.) You are ready to practice writing sixes on your boards. When you are ready, you may take out your practice sheet and use your pencils. (Distribute penmanship practice sheets to students.)

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Help English language learners to participate and discuss their strategies for counting their 4 circles by providing them with sentence starters such as, "I counted my beans on the circle by…" and "My strategy was to…." Giving them a place to start reduces their anxiety about using the language.

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> Allow students with special needs to respond to the question about how they kept track of where they started when counting 4 circles on their magic necklace by showing how they counted their circles. Help by verbalizing what they did: "Oh, I see you touched each one as you counted."

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Ask students to count and write the number of dots they see in each box, and then ask if they see a pattern with the dots.

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Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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Student Debrief (8 minutes)

Lesson Objective: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.
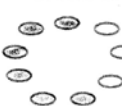
- Who can explain to the class how they counted their beans and how they knew where to start and stop? Who did it the same way? Who did it a different way?

- Was it easy to count out 6 beans from your baggie? How did you do that?

- What happened to our 6 beans when we put them back in the bag with the rest of the beans?

- When you did your Problem Set, did you think it was easier to count the beans in the circle or the pencils in a line? Why?

- What is a good strategy to use when you count objects in a circle?

- Highlight the part–whole relationship between the beans they colored and the whole group. "The beans you colored are a part of all the beans."

- Extension: Ask students, "If there were one more apple (shoe, pencil, star, heart) how many apples would there be?"

Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.
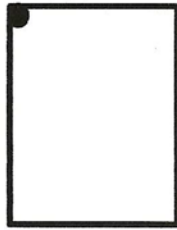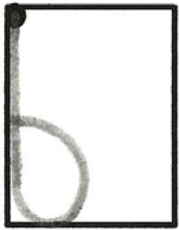
188

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.
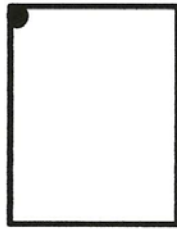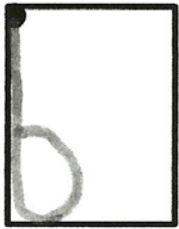
Lesson 18:   Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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Name _____   Date _____

Insert this page into your personal whiteboards. Practice. When you are ready, write your numbers in pencil on the paper.

numeral formation practice sheet 6
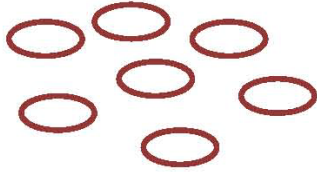
Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.
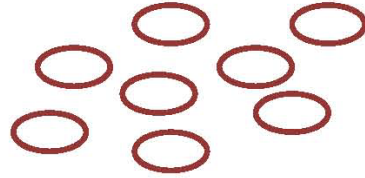
190

Name _____ Date _____

Color 6 beans.

Color 6 beans.
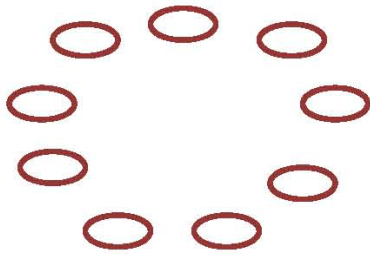
Color 6 beans.

Color 6 beans.

Count the dots in each box. Write the number in the box.

Lesson 18:   Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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Count the objects. Write the number in the box.

Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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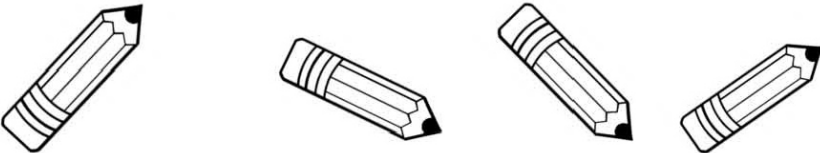
Name _____   Date _____

Draw 6 beads on this magic necklace.

Fill in the missing numbers.

_____, 2, _____, _____, 5, _____

Lesson 18: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

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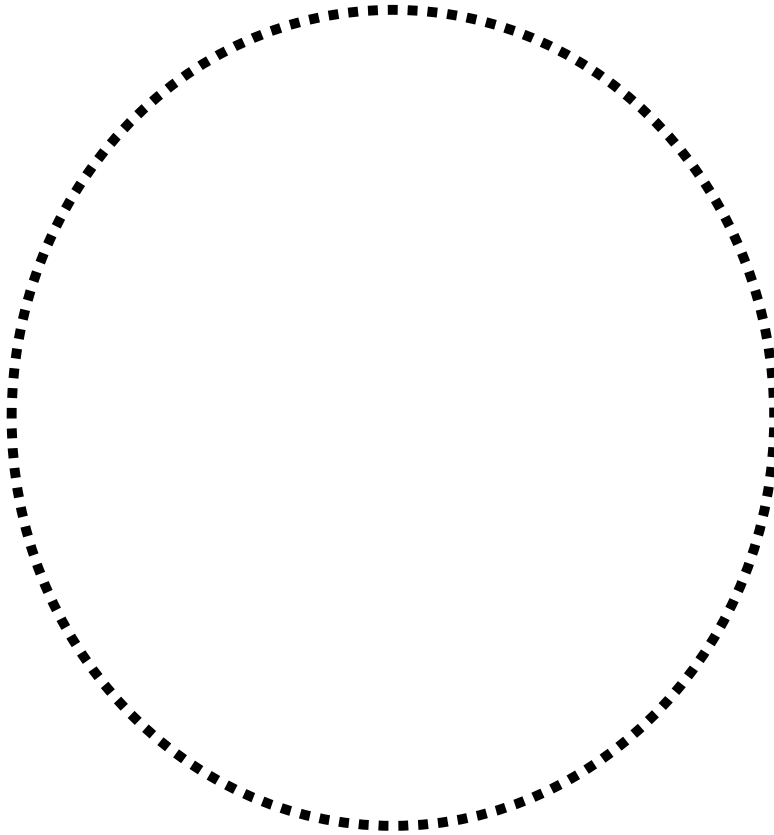
Name _____   Date _____
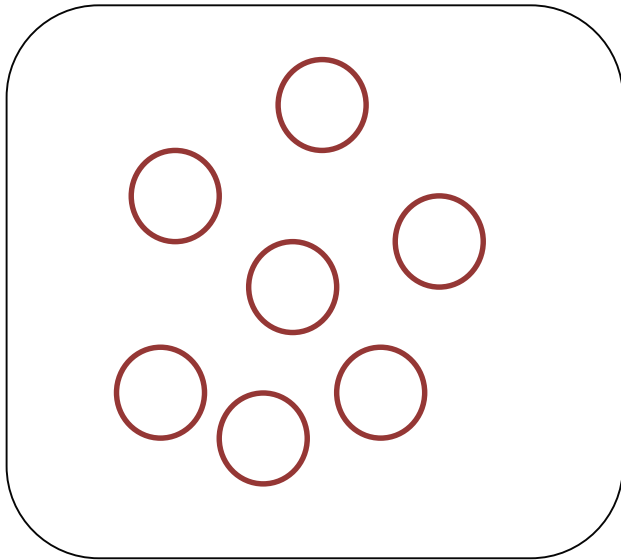
Color 6   Color 5

Circle 6   balloons.

Lesson 19

Objective: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (8 minutes)

   Total Time   **(50 minutes)**

Fluency Practice (12 minutes)

- ▪ 5-Groups (Count On from 5) **K.CC.2**   (4 minutes)
- ▪ Show Me Beans (Color Change at 5) **K.CC.2**   (4 minutes)
- ▪ Rekenrek Roller Coaster to 7 **K.CC.4a**   (4 minutes)

5-Groups (Count On from 5) (4 minutes)

Materials: (T) Large 5-group cards (Lesson 8 Template)

T: (Show the 6-dot card.) Raise your hand when you know how many dots. (Wait for all hands to be raised, and then signal.) Ready?

S: 6 dots!

T: This time, count only the dots on the top row. Raise your hand when you know how many dots are on top. (Wait for all hands to be raised, and then signal.) Ready?

S: 5 dots.

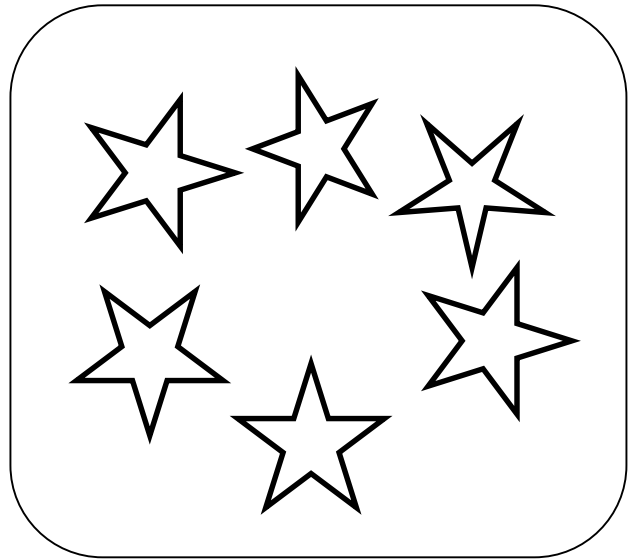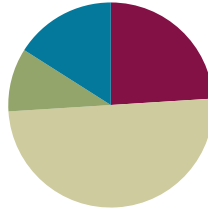T: This time, count only the dots on the bottom row. Raise your hand when you know how many dots are on the bottom. (Wait for all hands to be raised, and then signal). Ready?

S: 1 dot.

T: We can count it like this. 5 (slide finger across the row of 5), 6 (point to the 1 dot on the bottom row). Try it with me. Ready?

S: 5, 6. (Mimic the sliding and pointing motions, if desired.)

T: (Show the 7-dot card.) Raise your hand when you know how many dots. (Wait for all hands to be raised, and then signal.) Ready?

S: 7.

T: Top? (Wait for all hands to be raised, and then signal.) Ready?

S: 5.

Lesson 19:   Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

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T: Bottom? (Wait for all hands to be raised, and then signal.) Ready?

S: 2.

T: Count from 5. Ready?

S: 5, 6, 7.

Reducing the questions to as few words as possible (top, bottom) once students understand the essential task allows them to complete a greater volume of problems in a short time and maintain an energetic pace.

Show Me Beans (Color Change at 5) (4 minutes)

Materials: (S) Two hands mat (Fluency Template), bag with 5 red beans and 5 white beans

T: Take 5 red beans out of your bag, and put them on the left hand on your mat. Count how many beans are on your mat.

S: 1, 2, 3, 4, 5.

T: Take a white bean out of your bag, and put it on the thumb of the right hand on your mat. Count how many beans are on your mat now.

S: 1, 2, 3, 4, 5, 6.

T: How many red beans are on your mat? (Allow time to recount if necessary.)

S: 5 beans.

T: How many white beans?

S: 1 bean.

T: How many beans are on the whole mat?

S: 6 beans.

T: If we already know there are 5 red beans, do we really need to go back and count them every time?

S: No.

T: So, we can count from 5 like this: 5 (shadow the full hand of 5), 6 (point to the single white bean). Try it with me.

Continue this process as far as students are comfortable with the task, again with the goal of reducing teacher language.

Rekenrek Roller Coaster to 7 (4 minutes)

Conduct the activity as outlined in Lesson 7, but now introduce 6 and 7 into the sequence, and generate a discussion about the color change at 5. If students demonstrate mastery, consider introducing the 10-frame orientation (e.g., 6 as 5 red beads on top and 1 red bead on the bottom).

Application Problem (5 minutes)

Draw 5 ice cream cones. Draw 1 more ice cream cone. Count how many ice cream cones you drew on your paper. Write the number.

Note: This reinforces the concept of 6 as 5 and 1, preparing students for understanding 7 in the same way.

Concept Development (25 minutes)

Materials: (T) Writing frame on board, classroom size 5-group mat (Lesson 17 Template), large numeral cards (Lesson 7 Template 1) (S) 1 bag of 10 loose linking cubes (5 each of red and blue), 5-group mat (Lesson 17 Template), 5-group cards (Lesson 7 Template 2)

T: Count out 5 linking cubes of the same color from your bag. Put them in a tower. How many are there?

S: 5.

T: Excellent! Take your tower apart, and put one cube on each dot of your first 5-group. Can you find the number card that shows how many cubes are on your mat? Hold it up high!

S: (Hold up card.) 5.

T: Take a cube of a different color from your bag, and put it on the first dot of your other 5-group. What do you notice?

S: This 5-group has only one cube. → This cube is a different color.

T: How many cubes are there in all? Count your cubes. Hold up the number card, and say the number.

S: (Hold up card.) 6.

T: Yes! Six is 5 and 1 more. Take another cube of that color from your bag, and add it to your mat. What do you see now?

S: There is one with 5 and one with 2; there are 5 (blue) and 2 (red) cubes.

T: Does anyone know the number that is 5 and 2? Let's count the cubes to find out.

S: 1, 2, 3, 4, 5, 6, …7.

T: Yes, the number is 7. Five and 2 are hiding in 7. Put your cubes all together to make a tower of 7, like this. (Demonstrate.) Do you see two little towers of 5 and 2 hiding inside? Show me. (Circulate and observe to ensure understanding.)

T: Let me show you how we write the numeral 7. "Across the sky and down from heaven; that is how we make a 7." (Write 7 in the frame on the board.) Find the number card that shows me how many cubes are in your tower.

S: (Hold up card.) 7.

T: Good. Put your cubes away now. We are going to play Show Me the Number. When I hold up my numeral card, show me the same number with your cubes, and then on your fingers the Math Way, and then tell how many. (Repeat quickly many times, showing all numbers but focusing especially on 5, 6, and 7.)

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> - Give children with dexterity challenges a 5-group card, and have them put colored sticky dots on it.
> - Have a selection of 5-group cards with various dot combinations for students who might have difficulty placing cubes on the cards. The student selects the appropriate card.

Lesson 19:   Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

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Problem Set (5–8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

Lesson Objective: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

MP.3

- When we had a tower of 5, how many more did we add to make 7?
- What are hidden partners in 7?
- Who can show me 5 the Math Way? Who can show me 7 the Math Way?
- Create a story using the Problem Set.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

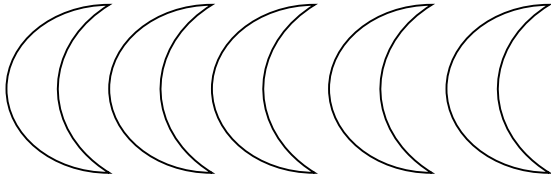**NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**

Pair English language learners with native English speakers. Model for them how to take turns asking each other probing questions about their thinking, and have them practice using sentence starters.

Lesson 19:   Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

198
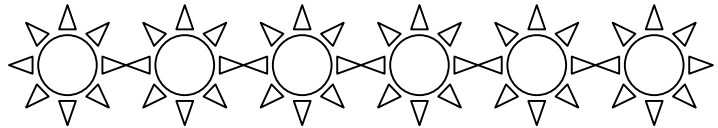
Name _____   Date _____

Color 5	Color 5
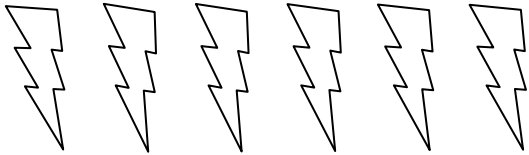
Color 5. Draw 2 circles to the right. Write the total.
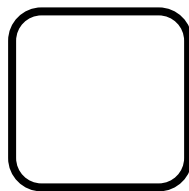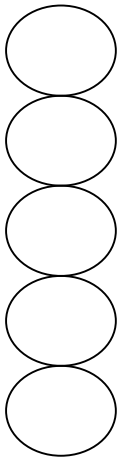
Color 5. Draw 2 circles below. Write the total.

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Lesson 19:   Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

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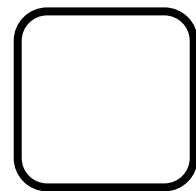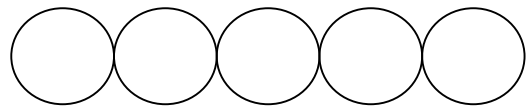
Name _____   Date _____

Color 5 squares on the 5-group card. Then, color 2 squares on the other 5-group card.
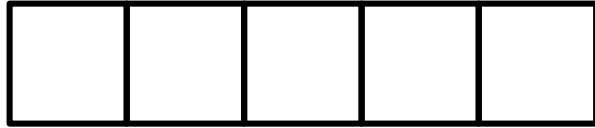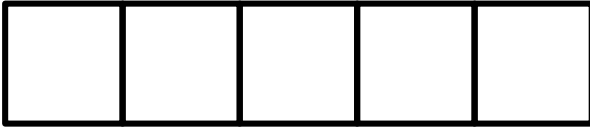
Count how many squares you colored.

Write the numeral in the box.
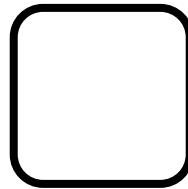
Answer my riddle. 7 is 5 and _____ more.

Name _____   Date _____

Draw a line from the numeral to the 5-group cards it matches.

3

4

5

6

7

Fill in the missing numbers.

____, 5, ____, 7

7, 6, ____, 4, ____, 2

1, ____, 3, ____, 5, ____, ____

7, ____, 5, ____, ____, 2, 1

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Lesson 19: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

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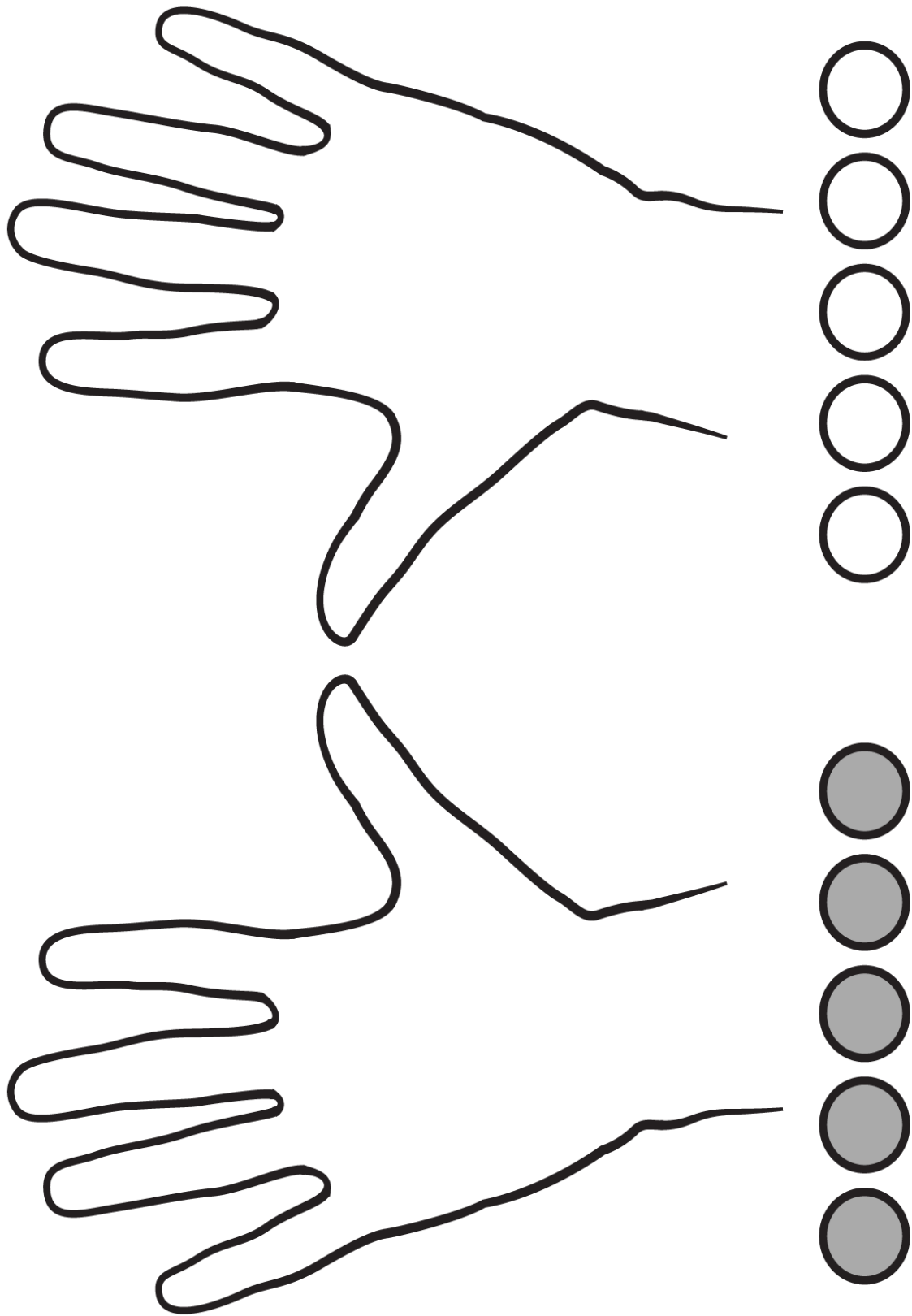
two hands mat

Lesson 20

Objective: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)
   Total Time   **(50 minutes)**

Fluency Practice (12 minutes)

- Making 3 with Triangles and Beans **K.CC.4a**   (4 minutes)
- Hands Number Line to 7 **K.CC.4a**   (4 minutes)
- Show Me Another Way **K.CC.4a**   (4 minutes)

Making 3 with Triangles and Beans (4 minutes)

Materials: (S) 3 beans, paper or foam triangle, personal white board
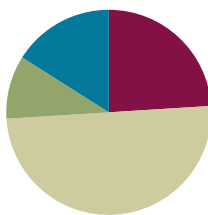
Conduct the activity as laid out in Lesson 11, but now have students write the equations on their personal white boards. Challenge students to list all possible combinations.

Hands Number Line to 7 (4 minutes)

Materials: (S) Two hands mat (Lesson 19 Fluency Template), bag of beans painted red on one side

Conduct the activity as outlined in Lesson 2, but now extend the number line to the right hand to show 6 and 7. Show 6 as a full left hand and the thumb of the right hand so that students can see the number line progressing across their hands.

Show Me Another Way (4 minutes)

Conduct the activity as laid out in Lesson 6, but now include showing different ways to make 6 and 7.

Lesson 20:   Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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Application Problem (5 minutes)

Christopher has a bag of 5 cookies and 2 other loose cookies.
Draw the cookies. How many cookies does Christopher have?
Count the cookies with your partner. Then, circle the bag of
5 cookies.

Note: Reinforcing the idea of 7 as 5 and 2 will benefit students
as they count sevens in varying configurations in today's lesson.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board
(S) Bag of 10 counters (objects should vary from
student to student), work mat inscribed with a large
circle, plastic cup, personal white board with
numeral formation practice sheet 7 (Lesson 20
Practice Sheet)

T: Take out 5 of your counters, and then count out 2
more. How many are left in your bag?

S: 3.

T: Put your counters in your plastic cup. Shake them up
seven times, and pour them into the circle on your
work mat. (Demonstrate.) Use your finger to make a
counting path through your objects while you count
them. How many are there?

S: 7.

T: Look at your friend's work mat. Does her 7 look
exactly like yours? Show each other how you counted.
Did you make the same counting path?

S: (Responses will vary. Allow time for sharing and
discussion.)

T: Now, put your counters around the edge of the circle
to make a magic necklace. Count them again. How
many?

S: 7.

T: Show your friend how you counted. Did you count them the same way? (Again, allow time for
sharing and discussion.)

T: Put 2 of your counters back in the bag. Now, put 5 counters back in the bag. How many counters
did you put away?

S: 7.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Scaffold the Application Problem for English language learners by modeling the word *more*. For example, have students show 1 more linking cube and say "1 linking cube"; then, show another linking cube and say "1 more" as the teacher makes a tower with a second linking cube. Add the word *more* to the class word wall with an appropriate visual.

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> Assist special needs students during the activity by breaking down the steps for them and watching them accomplish each step before moving on to the next:
> - Let's count 5 of your counters: 1, 2, 3, 4, 5. Good.
> - Put the counters in the plastic cup.
> - Let's count 2 more: 1, 2. Good.
> - Now, put those 2 counters in the cup.
> - Let's count everything together.

T: Show me 7 with your fingers. (Check to ensure understanding.) We are going to practice writing the number 7. Watch me make 7 on the board. Follow along with your fingers in the air. "A straight line and down from heaven; that's the way we make a 7." (Demonstrate several times, followed by having children write on the rug or other surface for tactile practice.) You are ready to practice writing on your personal white boards. When you are ready, you may take out your practice sheet and use your pencils. (Distribute personal white boards to students. When the penmanship practice is complete, distribute the Problem Set.)

Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Guide students to connect the dots they colored as they count to 7.

Student Debrief (8 minutes)

Lesson Objective: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check their work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion. Have students bring the Problem Set to the rug to discuss.

MP.4

- Ask your partner about the similarities and differences between the groups of 7 beans that you both colored.
- What did you notice when you were counting the dots and writing the numbers? (The numbers got bigger. There was no 1.)
- Compare your counting paths as you connected the dots in the scattered formations. (Students are remembering their path, reconstructing their count. This develops their skill of counting while beginning with numbers other than 1.)
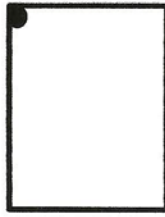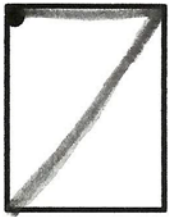
Lesson 20: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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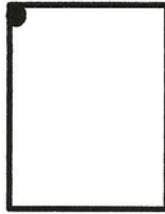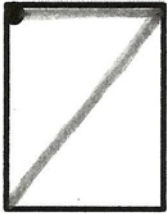Lesson 20:   Reason about sets of 7 varied objects in circular and scattered
configurations. Find a path through the scattered configuration.
Write numeral 7. Ask, "How is your seven different from mine?"

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Insert this page into your personal white boards. Practice. When you are ready, write your numbers in pencil on the paper.

numeral formation practice sheet 7
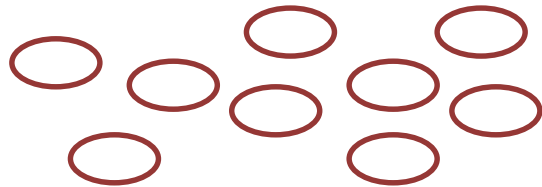
Lesson 20:   Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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Name _____   Date _____
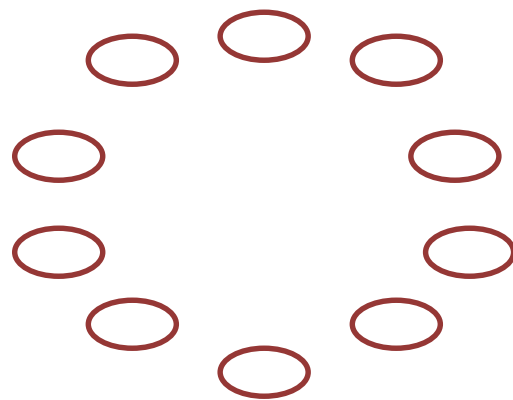
Color 7 beans. Draw a line to connect the dots you colored.
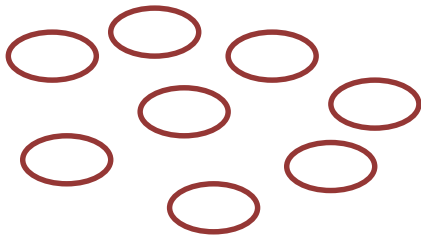
Color 7 beans.   Color 7 beans.
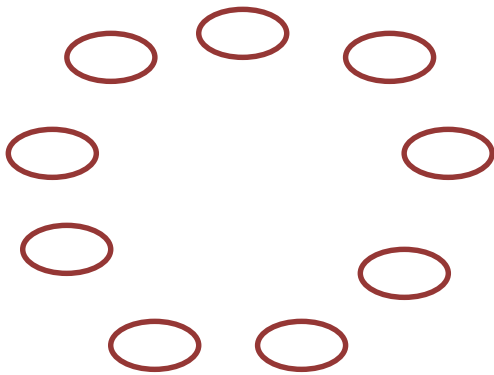
Count the dots in each box. Write the number in the box.

Name _____   Date _____

Make a necklace. Draw 7 beads around the circle.
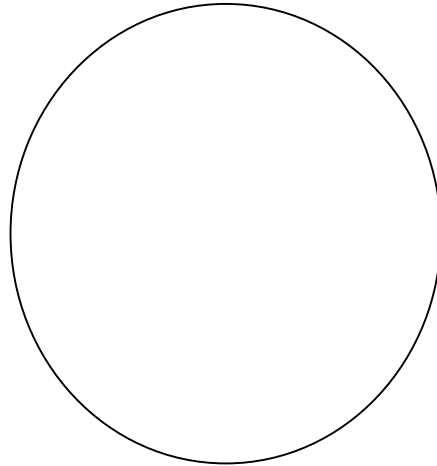
Color 7 hearts.
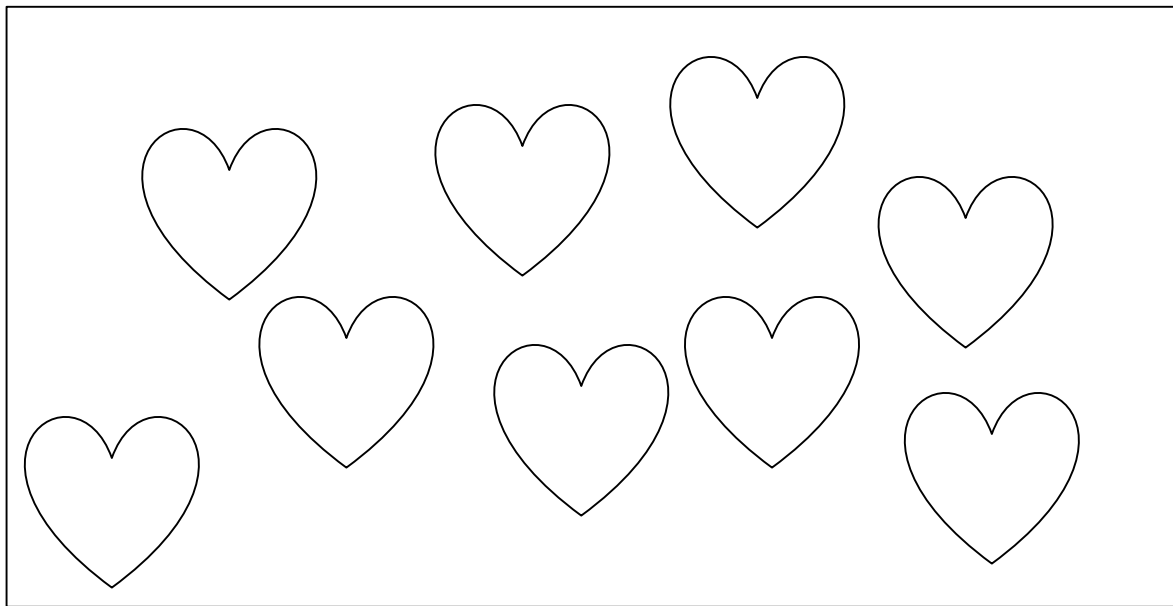
Lesson 20:   Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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How many? Write the number in the box.

Lesson 20: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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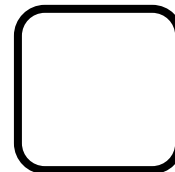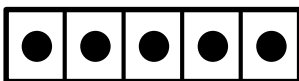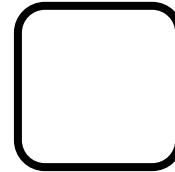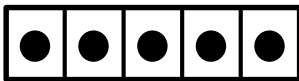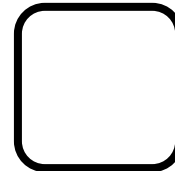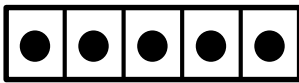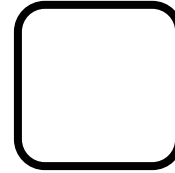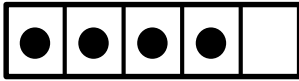
Count how many. Write the number in the box.
Draw a line to show how you counted the suns.
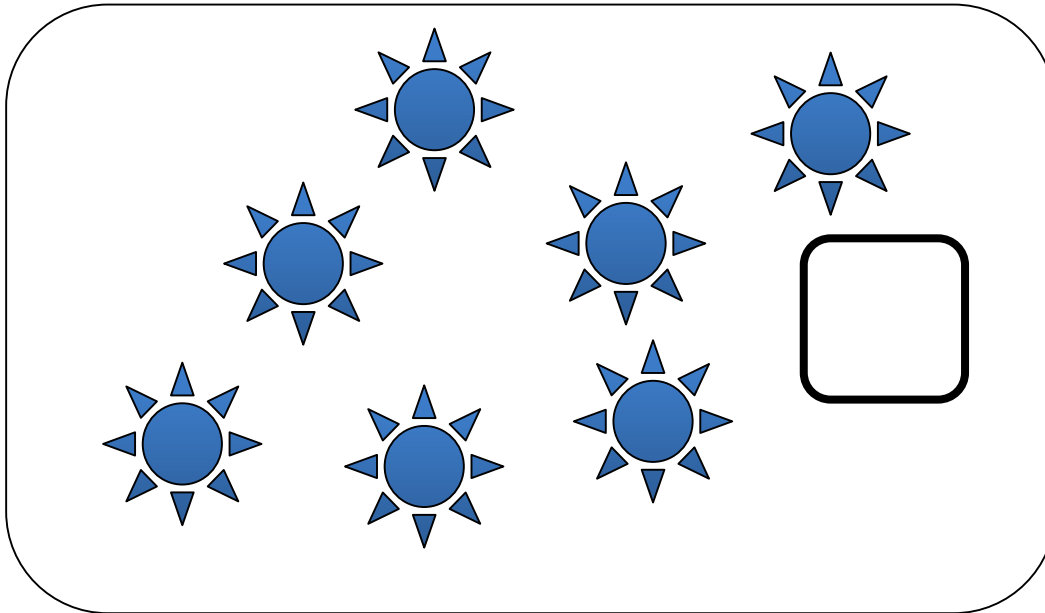
Count how many. Write the number in the box.
Draw a line to show how you counted the circles.

Lesson 20: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different from mine?"

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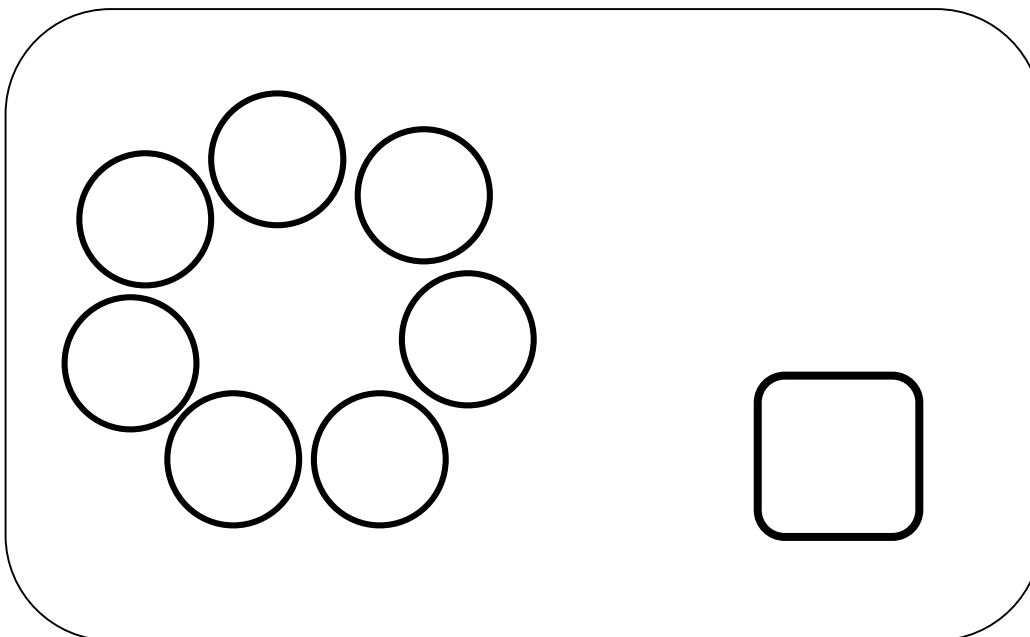
Lesson 21

Objective: Compare counts of 8 in linear and array configurations. Match with numeral 8.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)
   Total Time   **(50 minutes)**
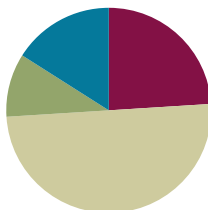
Fluency Practice (12 minutes)

▪ Counting with the Number Glove to 8 **K.CC.5**   (4 minutes)
▪ Finger Flashes to 8 **K.CC.5**   (4 minutes)
▪ Happy Counting Within 8 **K.CC.2**   (4 minutes)

Counting with the Number Glove to 8 (4 minutes)

Count up and down, as in Lesson 1, only now dramatically emphasize the transition from 5 to 6 by bringing the hand in and out of view when changing directions.

Number gloves are illustrated at right, as viewed from the students' perspective.
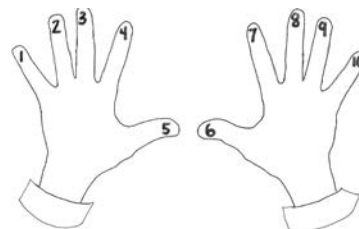
Finger Flashes to 8 (4 minutes)

Complete the activity as outlined in Lesson 2. Recall that the teacher begins with the right hand, beginning with the pinky as 1 and the thumb as 5, as a continuous number line. Watch closely to see which students immediately recognize an open hand as 5 and which must begin counting from 1 each time. If students are ready for a challenge, show them the finger combinations very briefly.

Happy Counting Within 8 (4 minutes)

Complete activity as outlined in Lesson 6. It is critical not to count along with the students or mouth the words; rather, listen closely to the students' responses. If students hesitate or have difficulty, return to work within 5, and then gradually build up to 8. If they are ready to be challenged, quicken the pace.

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Lesson 21:   Compare counts of 8 in linear and array configurations. Match with numeral 8.

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Application Problem (5 minutes)

There were some children playing with marbles on the playground. Draw a circle and show 7 of their marbles in the circle. Count the marbles with your friend. Talk about what would happen if someone gave the children another marble.

Note: This reviews yesterday's lesson of counting 7 in a circular or scattered configuration. It could also begin the count of 8.

Concept Development (25 minutes)

Materials: (T) Linking cubes, cardboard writing frame on the board, classroom-size 5-group mats (Lesson 17 Template) (S) Bag of 10 loose linking cubes (5 blue and 5 red), work mat, two 5-group mats (Lesson 17 Template), 5-group cards (Lesson 7 Template 2)

MP.7

T: Count out 5 cubes of one color and 2 of another. How many are left in your bag?

S: 3.

T: Put your cubes on your 5-group mat to show that 7 is the same as 5 and 2. (Check to ensure proper placement.) Find the number card that tells how many cubes you have. Hold it up, and say the number.

S: 7. (Hold up number card.)

T: Take out 1 more cube of the second color, and put it on your 5-group mat. How many cubes are on your top five?

S: 5.

T: How many on your bottom five?

S: 3.

T: Let's count to see how many cubes!

S: 1, 2, 3, 4, 5, 6, 7, …, 8.

> **NOTES ON MULTIPLE MEANS OF ACTION AND REPRESENTATION:**
>
> Model the word *rows* by gesturing with arms held to the side while giving the instruction, "Put the cubes into rows (gesture) on your work mat." Alternatively, point to a visual of a row with the instruction. This will clarify the intent to special needs students and English language learners. Do the same for *column,* but this time with arms stretched up above the head.

T: You have 8 cubes! Eight is 1 more than 7. We write the number 8 like this. (Demonstrate in writing frame.) Find the number card that shows 8. Hold it up, and say the number.

S: (Hold up the card.) 8.

T: Put your cubes together in a tower, like this. (Demonstrate so that the parts of 5 and 3 are different colors.) Can you see the 5 and the 3 hiding in our 8? (Circulate to ensure understanding.)

T: Now, take your tower apart, and put the cubes into rows on your work mat. Make your rows so that each one has the same number of cubes. (Rows should have 4 and 4. Guide students to use the top and bottom of their square to help them.)

T: Look at your partner's work mat. Do his cubes look the same as yours? Let's count our cubes. Then, show me the number.

S: 1, 2, 3, 4, 5, 6, 7, 8. (Hold up digit card.)

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Lesson 21:   Compare counts of 8 in linear and array configurations. Match with numeral 8.

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T: I wonder what would happen if we put our cubes into columns like towers. Move your cubes so that they are on the sides of your work mat. Make sure that each side has the same number. How many are on each side?

S: 4 and 4.

T: Let's count our cubes. Show me the number that tells how many you see.

S: 1, 2, 3, 4, 5, 6, 7, 8. (Hold up card.)

T: Now, put one cube on the top edge of your work mat, one on the left, one on the bottom, and one on the right. Do you have some cubes left? Let's see if we can do it again. (Repeat.) Do you have any more cubes left?

S: No.

T: How many cubes are on each edge?

S: 2.

T: How many cubes are on your work mat?

S: 8.

T: Look at your partner's work mat. Does it look the same as yours? (Responses will vary.)

T: Put away your cubes. We are going to do some more counting on the Problem Set.

Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

Lesson Objective: Compare counts of 8 in linear and array configurations. Match with numeral 8.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What did you notice about the ladybugs and diamonds? How many ladybugs are there? How many diamonds? Does it look like the same amount?

Lesson 21: Compare counts of 8 in linear and array configurations. Match with numeral 8.

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- ▪ How were the ladybugs different on each page? The ladybugs were in a straight line, and then they were pictured in rows. Did it look like there were more ladybugs in a straight line or more ladybugs in the rows?
- ▪ Look at the rows of ladybugs. What did you notice about the rows? Discuss how one group of ladybugs showed 8 as 4 and 4. Are there other ways to show 8?
- ▪ What number comes before 8? What are some other things you now know about the number 8?

Exit Ticket (3 minutes)
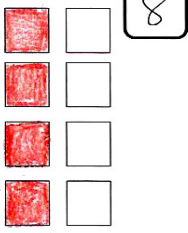
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 21:   Compare counts of 8 in linear and array configurations. Match with numeral 8.
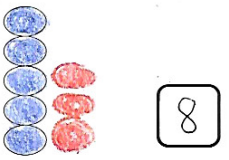
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Name _____   Date _____

Color 5 ladybugs. Color the remaining ladybugs a different color.
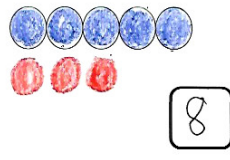Count all the ladybugs, and write how many.

Color 5 diamonds. Color the remaining diamonds a different color.
Count all the diamonds, and write how many.
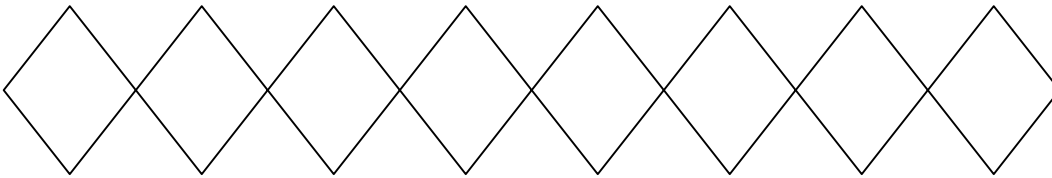
Color 5 circles. Then, draw 3 circles to the right. Count all the circles. Write how many in the box.

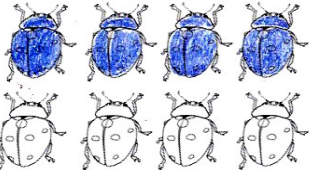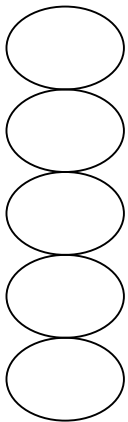Color 5 circles. Then, draw 3 circles below. Count all the circles. Write how many in the box.

Lesson 21:   Compare counts of 8 in linear and array configurations. Match with numeral 8.

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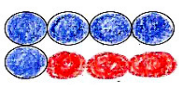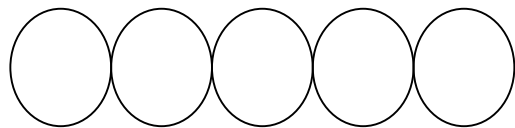
Color 4 ladybugs. Count all the ladybugs, and write how many in the box.
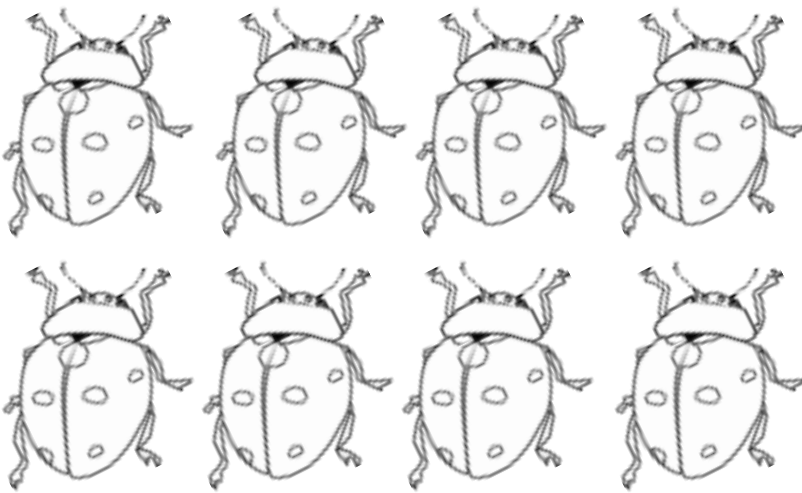
Color 4 rectangles. Count all the rectangles, and write how many in the box.
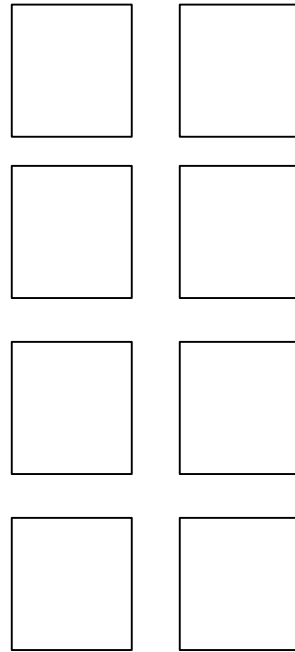
Color 5. Then, draw 3 circles to finish the row. Color the bottom 3 circles you drew a different color. Write the total in the box.

Lesson 21:   Compare counts of 8 in linear and array configurations. Match with numeral 8.

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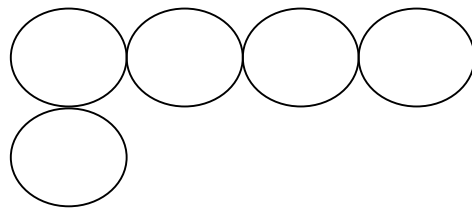
Name _____   Date _____

Color 4 squares red and 4 squares blue. Count all the squares. Write how many in the box.
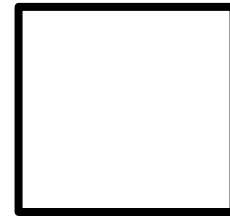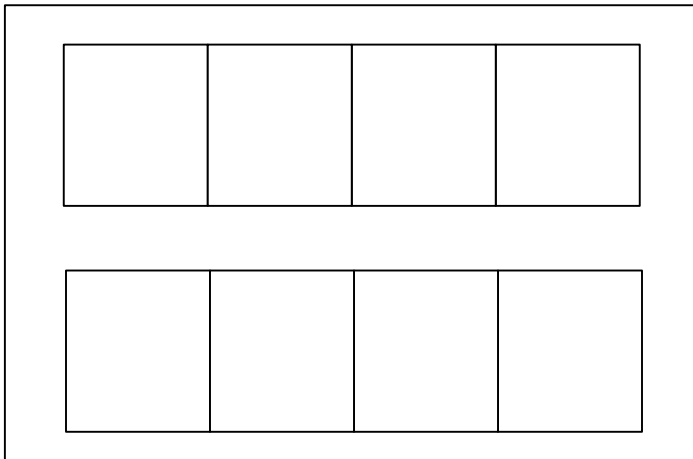
Color 6 squares red and 2 squares blue. Write the number of squares in the box.

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Lesson 21: Compare counts of 8 in linear and array configurations. Match with numeral 8.

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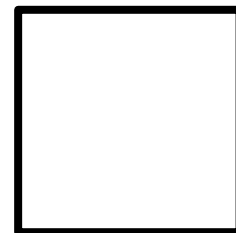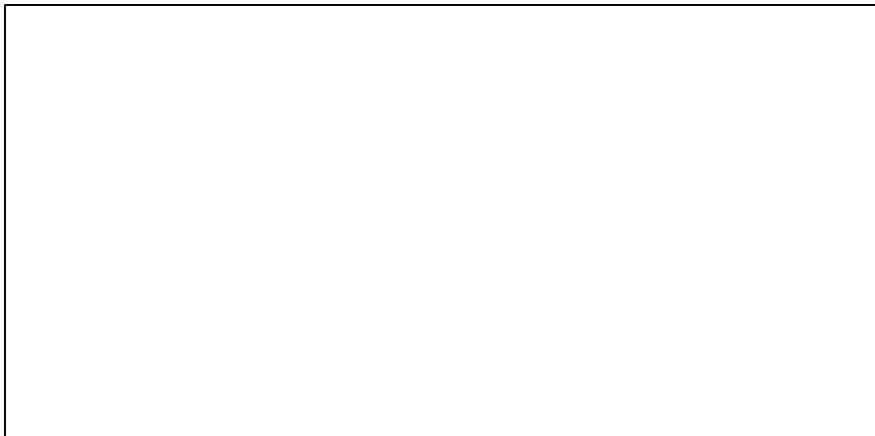
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Color 4 squares blue. Color 4 squares yellow.

Count how many squares. Write the number in the box.
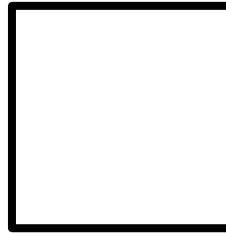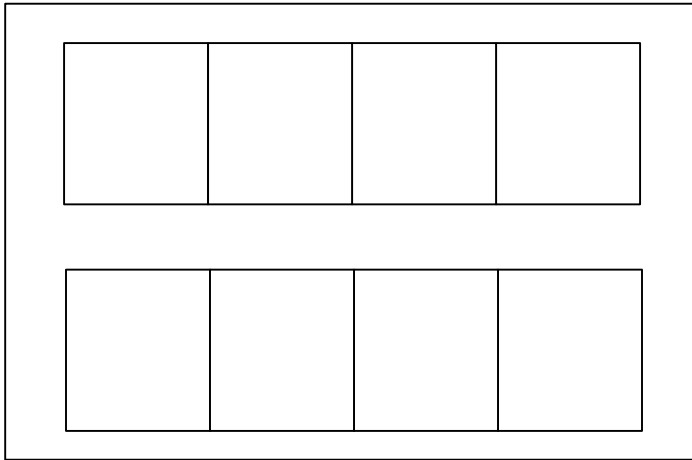
Color 4 squares green. Color 4 squares brown.

Count how many squares. Write the number in the box.

Lesson 21: Compare counts of 8 in linear and array configurations. Match with numeral 8.

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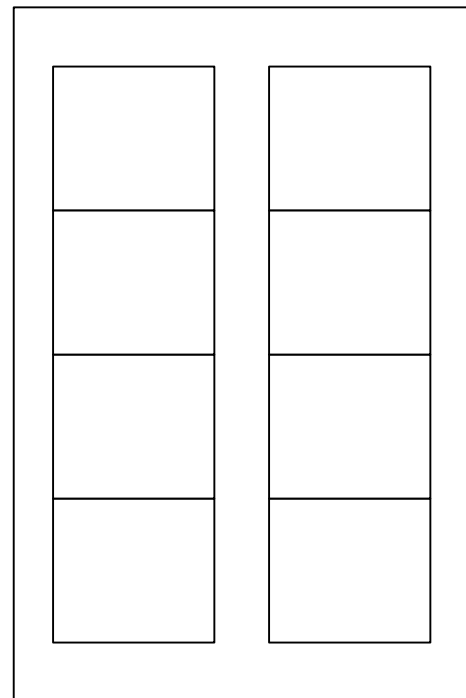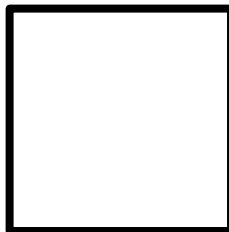
Count how many. Write the number in the box.
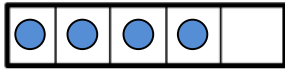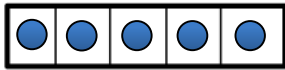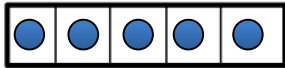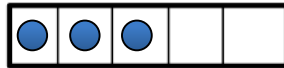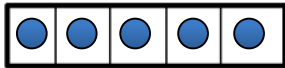
Lesson 22

Objective: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

Suggested Lesson Structure

■ Fluency Practice	(12 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(25 minutes)
■ Student Debrief	(8 minutes)
Total Time	**(50 minutes)**
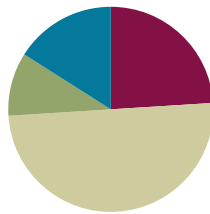
Fluency Practice (12 minutes)

- Making 4 with Squares and Beans **K.CC.4a**   (4 minutes)
- 5-Group Peek-a-Boo **K.CC.2**   (4 minutes)
- 1, 2, 3, Stand on 10 **K.CC.2**   (4 minutes)

Making 4 with Squares and Beans (4 minutes)

Materials: (S) 4 beans, paper or foam squares, personal white board

Conduct activity as outlined in Lesson 16, but now have students write the expression on their personal white boards. Challenge students to list all possible combinations.

5-Group Peek-a-Boo (4 minutes)

Materials: (T) Large 5-group cards (Lesson 8 Template)

T: I'm going to show you my 5-group cards, but only for a second! Like this (hold up the card briefly, and then quickly take it out of view). Quickly count the dots, and raise your hand when you know how many. Remember to wait for the snap. (Wait for all students to raise their hands, and then give the signal.)

S: 5.

Watch closely to see which students immediately recognize the group of 5 in the top row and which must count from 1 each time. A possible sequence is 5, 6, 5, 6, 5, 6, 7, 6, 7, 8, 7, 8, …. Then, show numbers randomly.

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Lesson 22:   Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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1, 2, 3, Stand on 10 (4 minutes)

T: Now, we'll play a fast counting game. Each person says the next 3 numbers. So, if I say 1, 2, 3, what would you say? (Point to the person standing next to you.)

S: 4, 5, 6.

T: And the next person? (Point to the next person.)

S: 7, 8, 9.

T: Right. Now, here's a change. The next person only says 10. (Point.) The game is called 1, 2, 3, Stand on 10. Can you guess what you have to do if you say 10?

S: Stand up?

T: Yes. By the end of the game, everyone will be standing. After you say 10, the next person starts over again with 1, 2, 3. Here we go.

S: 1, 2, 3.

S: 4, 5, 6.

S: 7, 8, 9.

S: 10. (Stand up.)

S: 1, 2, 3.

Continue playing until all students are standing.

Application Problem (5 minutes)

Draw 2 stacks of 4 blocks each. Count your blocks. How many do you have? Compare your drawing to a friend's.

Note: Counting 8 within an array prepares students for counting eights in different configurations in today's lesson.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> For students with special needs, consider breaking down the activity so that students are asked to draw 1 stack of 4 blocks. Then, ask students to repeat the activity by drawing the second stack of 4 blocks only after they have been successful with their first drawing.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board (S) Bag of 10 beans or other small counters (objects should vary from student to student), work mat, plastic cup, personal white board with numeral formation practice sheet 8 (Lesson 22 Practice Sheet)

MP.1

T: Take out 5 of your counters, and then count out 3 more. How many are left in your bag?

S: 2.

T: Put your counters in your plastic cup. Shake them up 8 times, and pour them into the circle on your work mat. (Demonstrate.) Count your objects. How many?

S: 8.

T: Look at your friend's work mat. Does his group of 8 look just like yours?

S: (Varied responses.)

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T: Use your finger to draw an imaginary counting path through your counters to count them again. Show your partner how you counted. Did he count his the same way?

S: (Varied responses. Allow time for sharing and discussion.)

T: Put your cup upside down onto your work mat, and arrange your counters around the edge of the cup. Carefully lift up your cup. What do you see?

S: A circle of counters!

T: Wow, you have a lot of counters in your circle! How could we count them without getting mixed up and counting some twice? (Discuss relevant strategies.)

T: Put 5 of your counters back in the bag. Now, put 3 counters back in the bag. How many counters did you put away? How many do you have left?

S: 8. There are 0 left.

T: Time for some writing! Watch how I write the number 8. Follow along with your fingers in the air. "Make an S, and do not stop. Go right back up, and an 8 you've got!" (Demonstrate several times. Follow by having children write on the rug or other surface for tactile practice.) You are ready to practice writing eights on your personal white boards. When you are ready, you may take out your practice sheet and use your pencils. (Distribute penmanship practice sheets to students.)

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> For English language learners, introduce the word *circle* with a visual of a circle before teaching the lesson.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Guide students to connect the dots as they count to 8. As the students circle groups of 5, be sure that they circle groups and not 5 individual shapes.

Student Debrief (8 minutes)

Lesson Objective: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

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Any combination of the questions below may be used to lead the discussion.

- Talk to your partner about how you connected your shapes. Did you each draw the line that connected your shapes the same way or a different way?
- "I see that Susan circled 4 triangles and 1 star." Show your partner which groups of 5 you circled. Even though you circled different groups of 5, are you both correct? Why?
- How many objects are not in the group of 5?
- Look at the circles you colored. Talk to your partner about the things that are the same and different about the 8 circles that you colored in each set.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 22: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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Name _____   Date _____

Insert this page into your personal white boards. Practice. When you are ready, write your numbers in pencil on the paper.
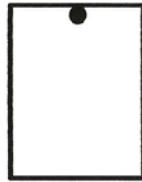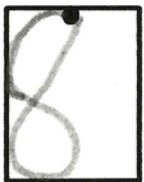
Color 8 happy faces.

Circle a different group of 8 happy faces.

numeral formation practice sheet 8

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Lesson 22: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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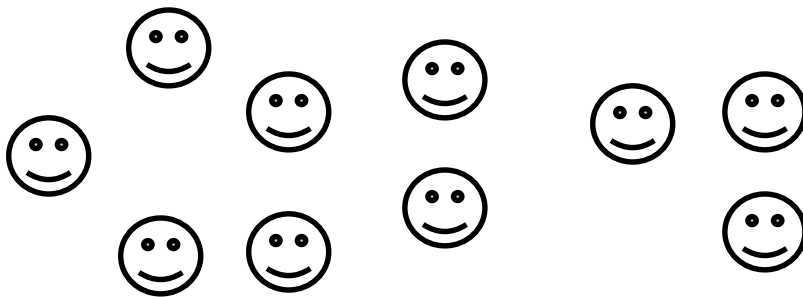
Name _____   Date _____

Draw a counting path with a line to show the order in which you counted.
Write the total number in the box. Circle a group of 5 in each set.
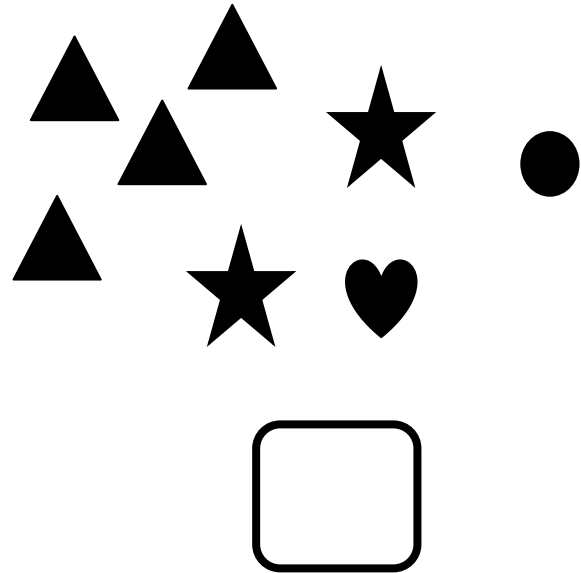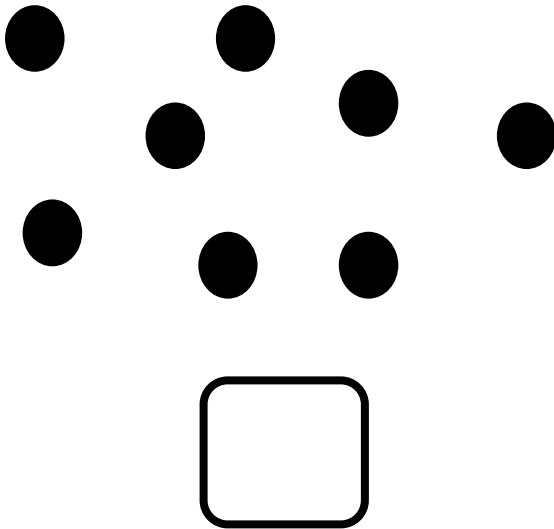
Number the circles from 1 to 8.
Color 8 circles.
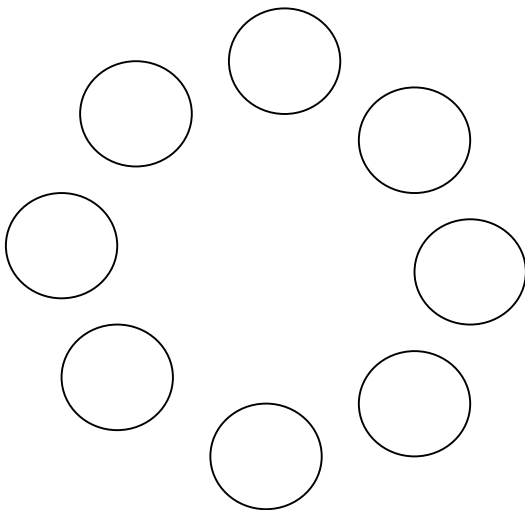
Number the shapes from 1 to 8.

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Lesson 22:   Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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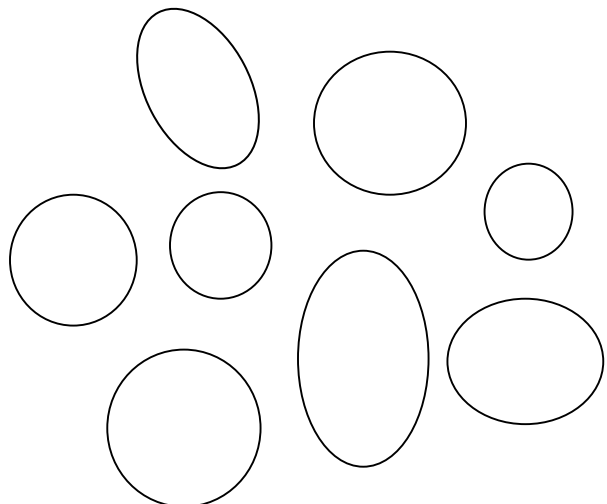
Name _____   Date _____

Count. Write the number in the box.
Draw a line to show your counting path.

Color 8.

Draw a line to show your counting path.

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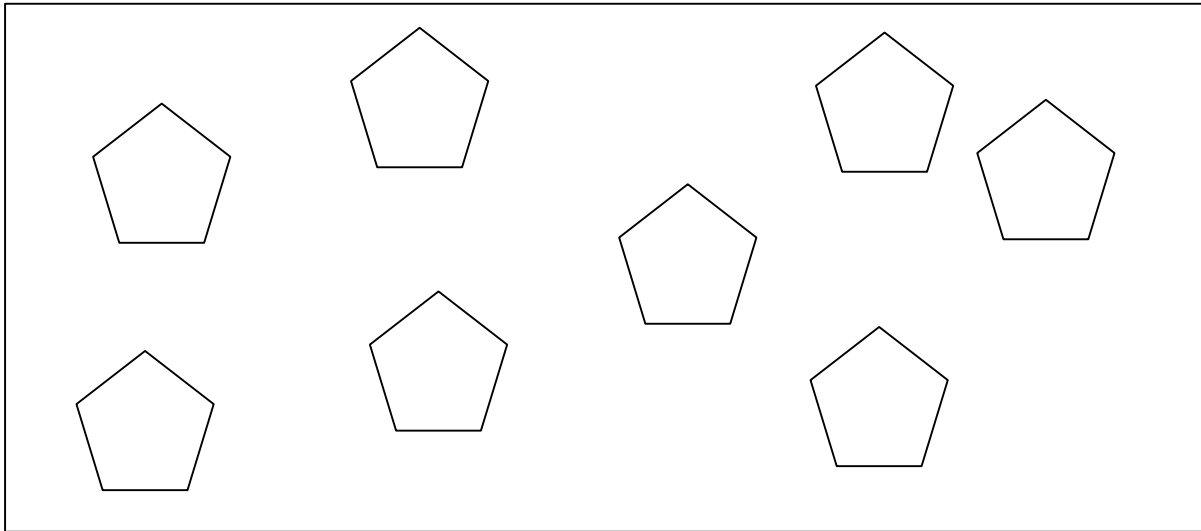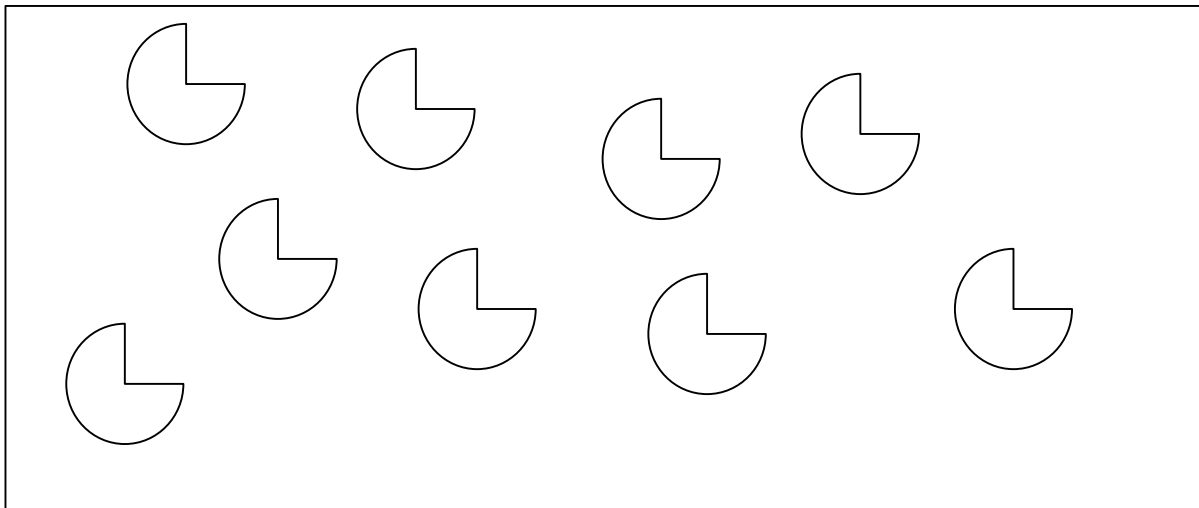
Name _____   Date _____

Draw 8 beads around the circle.

Color 8. Draw a line to show your counting path.

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Lesson 22: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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Count how many. Write the number in the box.

Lesson 22:   Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scatter set, and compare paths with a partner.

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K GRADE

Mathematics Curriculum

Topic F

Working with Numbers 9–10 in Different Configurations

K.CC.3, K.CC.4ab, K.CC.5

Focus Standards:	K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).
	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
Instructional Days:	6	
Coherence -Links from:	GPK–M3	Counting to 10
** -Links to:**	G1–M1	Sums and Differences to 10

In this module, counting becomes more complex as the numbers get bigger and students learn to be flexible with numbers to 10. Students represent, count, and compare different objects in different configurations.

Lesson 23 begins with organizing and counting 9 varied geometric objects. The importance of the unit of five is stressed once again. Asking the students to place 5 of the 9 pattern blocks on a 5-group mat helps them to utilize the five-unit as they count.
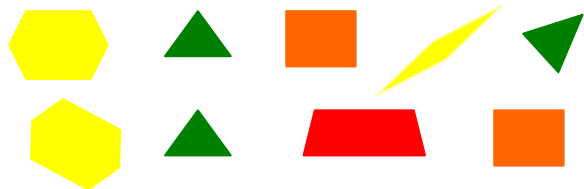
Lesson 24 continues with writing the numeral 9 and counting 9 objects in a circular and scattered configuration printed on paper. Students strategize about how to represent a path through the scattered configuration: "I numbered my objects when I counted so I wouldn't count the same object twice."

The next three lessons focus on these same concepts with the number 10. Students write the numeral 10 and count 10 objects in all configurations, using the 5-group mat to highlight the importance of the five-unit. Once all the numbers have been introduced and explored, the focus becomes developing a profound understanding of the numbers to 10.
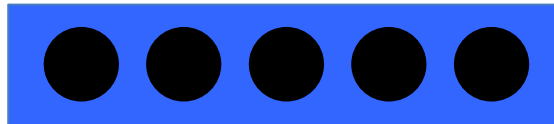
Armed with this profound understanding of the numbers to 10, the students are ready to act out *result unknown* story problems without equations in Lesson 28 (**K.OA.1**). For example, "FIve children were sitting at their desks. Four children come in from outside and sit down at their desks, too. How many children are in the classroom?" At this point students are problem solving by using objects, drawings, or acting only.

A Teaching Sequence Toward Mastery of Working with Numbers 9–10 in Different Configurations

Objective 1: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.
(Lesson 23)

Objective 2: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.
(Lesson 24)

Objective 3: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.
(Lessons 25–26)

Objective 4: Count 10 objects, and move between all configurations.
(Lesson 27)

Objective 5: Act out *result unknown* story problems without equations.
(Lesson 28)

Lesson 23

Objective: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

Suggested Lesson Structure

■ Fluency Practice	(10 minutes)	
■ Application Problem	(5 minutes)	
■ Concept Development	(27 minutes)	
■ Student Debrief	(8 minutes)	
Total Time	**(50 minutes)**	
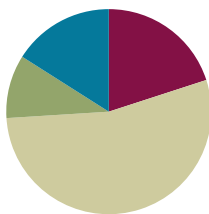
Fluency Practice (10 minutes)

- 5-Groups (Count On from 5) **K.CC.2**   (3 minutes)
- Show Me Beans (Color Change at 5) **K.CC.2**   (3 minutes)
- Rekenrek Wave to 10 **K.CC.4a**   (4 minutes)

5-Groups (Count On from 5) (3 minutes)

Conduct the activity as described in Lesson 19. Continue to 10 if students are ready.

Show Me Beans (Color Change at 5) (3 minutes)

Conduct the activity as outlined in Lesson 19, but reduce teacher language as students develop familiarity with the exercise. For example, ask, "How many red? White? Count on from 5."

Continue to 10 if students are ready.

Rekenrek Wave to 10 (4 minutes)

Conduct the activity as outlined in Lesson 7, but gradually build up to 10. Be careful not to mouth the words or count along with the students. Listen carefully for hesitations or errors, and return to a simpler sequence if necessary. If students demonstrate mastery, consider introducing the 5-group orientation (e.g., 6 as 5 red beads on top and 1 red bead on the bottom).

Application Problem (5 minutes)

Draw a shape that you might see as a fence at a playground. (Demonstrate, if you choose.) Draw 8 balls inside the fence. Count the balls. Share your counting with a friend.

Note: Reinforcing a scatter-count of 8 prepares students to count 9 in today's lesson.


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Lesson 23:   Organize and count 9 varied geometric objects in linear and array
(3 threes) configurations. Place objects on 5-group mat. Match with
numeral 9.

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Concept Development (27 minutes)

Materials: (T) Cardboard writing frame on board (S) 1 bucket of assorted pattern blocks, 5-group mat
(Lesson 17 Template), 5-group cards (1–9) (Lesson 7 Template 2)

T: Put your 5-group mat in front of you. Count out 5 different pattern blocks from your bucket, and put each one on the mat. (Circulate to ensure proper placement.) Now, count out 4 pattern blocks, and put each one on the mat. What do you notice?

S: One row is full. There are 4 on the other one.

T: Look at your mat, and compare it to your friend's mat. If you wanted to fill your mat, how many more blocks would you need?

S: 1.

T: Count the pattern blocks on your mat.

S: 1, 2, 3, 4, 5, 6, 7, 8, 9.

T: You have 9 pattern blocks. The numeral 9 looks like this: "A loop and a line. That's the way we make a 9." (Demonstrate in cardboard writing frame.) Find the number card that shows how many blocks are on your mat. Hold it up, and say the number.

S: (Hold up card.) 9.

T: Right. You have 5 shapes in one row and 4 in the other. Nine is 5 and 4.

T: Take 3 of your blocks and put them in a row on your desk. Now, take more blocks and make another row underneath that is exactly the same size. Look at what is left on your mat. Do you have enough shapes left to make another row?

S: Yes. We can make one more row. → We can make 3 rows. → When I put 3 rows, it kind of makes a square. → We can make 3 rows of 3.

S: (Complete the additional rows.)

T: Look at the first shape in your top row. Take blocks from the bucket, and trade the other shapes in the row so that they are all the same as the first one. Don't take any extra shapes or lose one! Trade the shapes in the other rows the same way. (Circulate to ensure understanding.) Count the shapes again. Do you notice anything?

S: I still have 9 shapes. I have 3 green shapes, 3 pointy shapes, and 3 yellow shapes. (Answers may vary.)

Lesson 23: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

T: Look at your friend's shapes. Do they look the same? (Allow time for sharing and discussion.) Hold up the number card, and say the number that tells how many shapes you have.

S: (Hold up card.) 9.

T: Count your blocks as you put them back into the bucket. We are going to look for more nines on your Problem Set.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

Lesson Objective: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

MP.3

- How did your groups of 9 differ? Lead students to discuss 9 as 5 and 4, as missing 1 to be 2 fives, and as being 3 rows of 3.
- What is different about the first two configurations?
- Discuss with a partner how you drew your dots in 5-groups and in rows. Did your partner draw them the same way?

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Challenge students who are performing above grade level by asking them to draw or demonstrate the different configurations of 9 (e.g., let them draw or show you how 5 and 4 is different from 6 and 3). Analyze 9 as an array of 3 threes, and share with the class. Let them see if they can find shortcuts for changing from the 5-group configuration to the array.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 23: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

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Name _____ Date _____

Color 5 ladybugs. Color the remaining ladybugs a different color.
Count all the ladybugs. Write how many in the box.
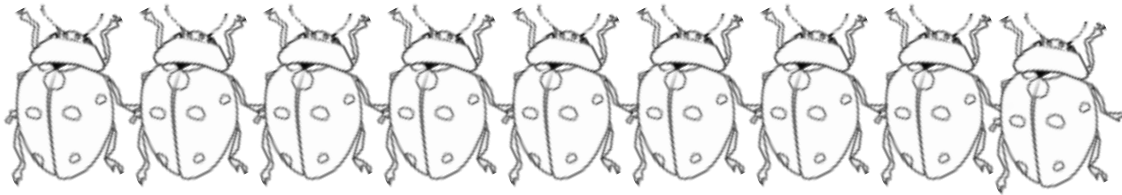
Color 5 diamonds. Color the remaining diamonds a different color.
Count all the diamonds. Write how many in the box.
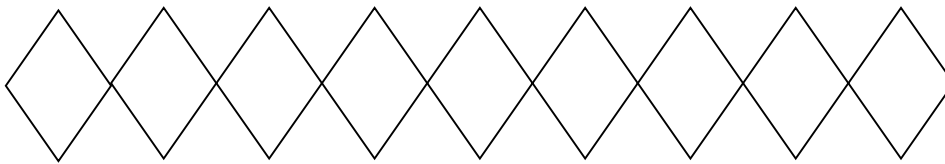
Draw 4 more circles.
Count all the circles.
Write how many in the box.
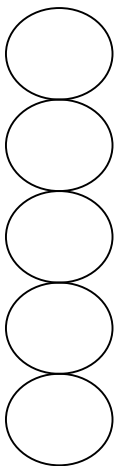
Make 9 dots. Circle a group of 5 dots.

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Lesson 23:   Organize and count 9 varied geometric objects in linear and array
(3 threes) configurations. Place objects on 5-group mat. Match with
numeral 9.

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Color 3 ladybugs. Count all the ladybugs. Write how many in the box.
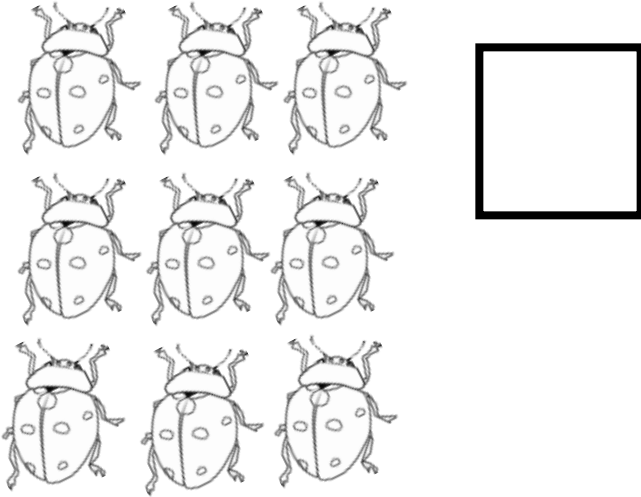
Color 3 rectangles. Count all the rectangles. Write how many in the box.
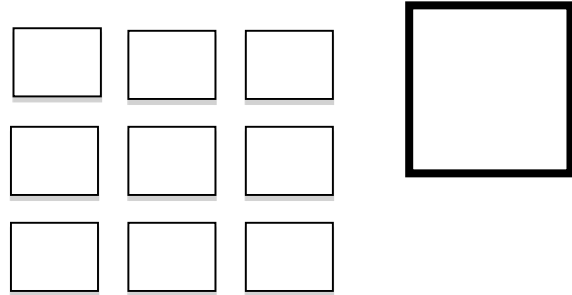
Draw 2 circles to finish the last row to make 9. Color to show the rows. Write how many in the box.

Lesson 23:   Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

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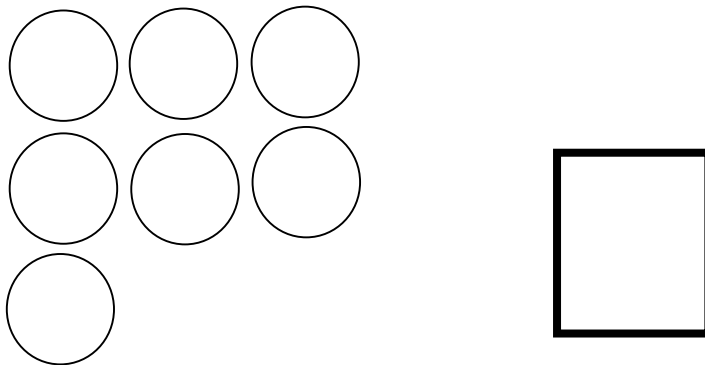
Name _____   Date _____

Color 5 shapes. Count how many shapes in all. Write the number in the box.

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Lesson 23:   Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

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NYS COMMON CORE MATHEMATICS CURRICULUM   Lesson 23 Exit Ticket   K•1
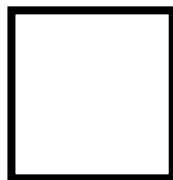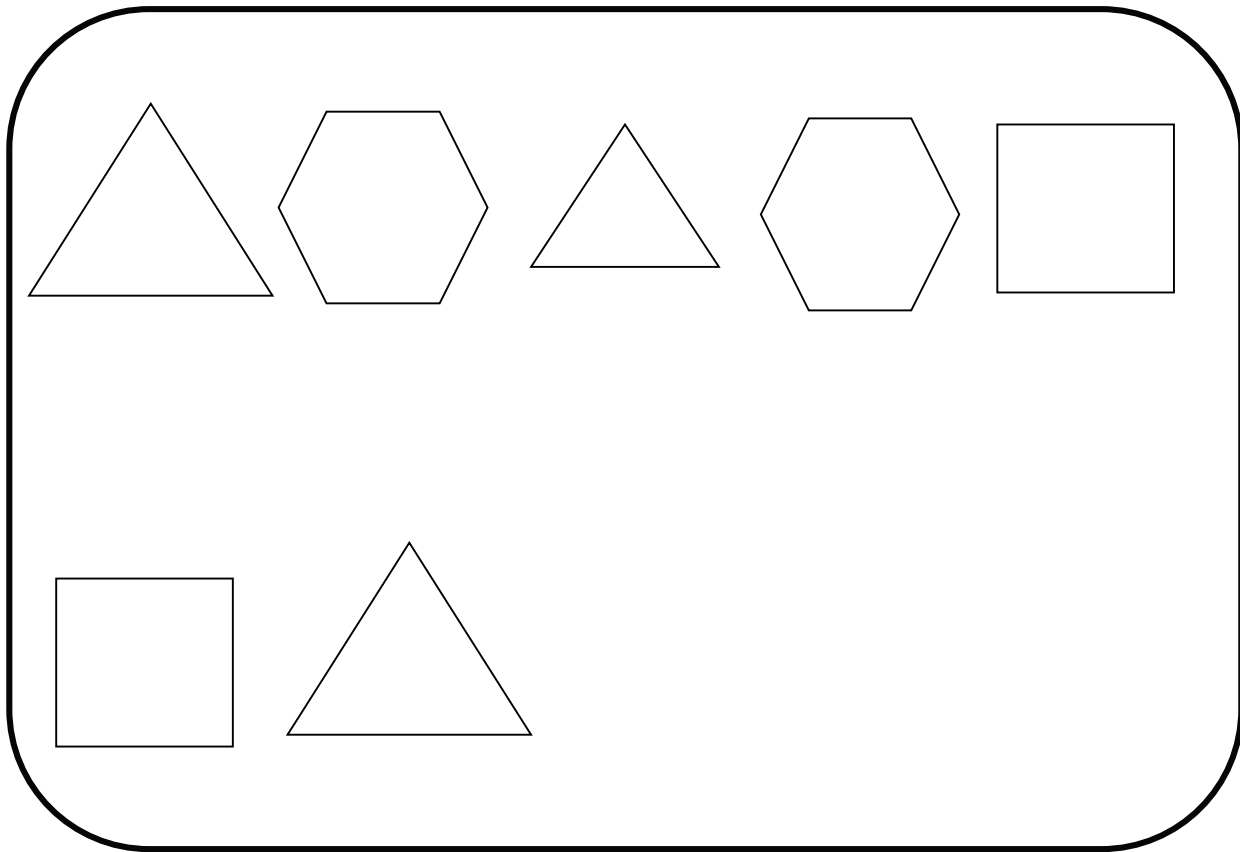
Count how many dots. Write the number in the box.

Name _____   Date _____

Color 9 shapes.
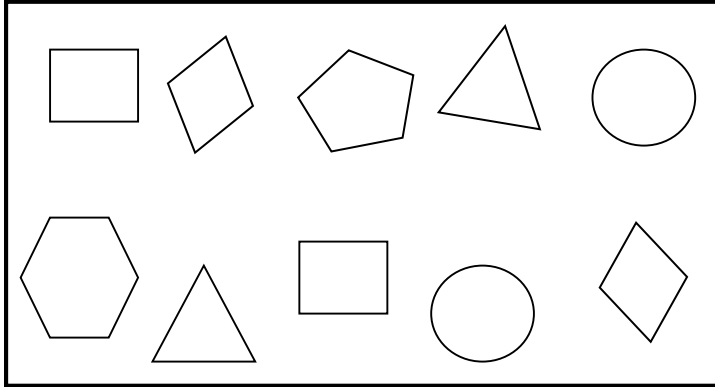
Color 9 shapes.
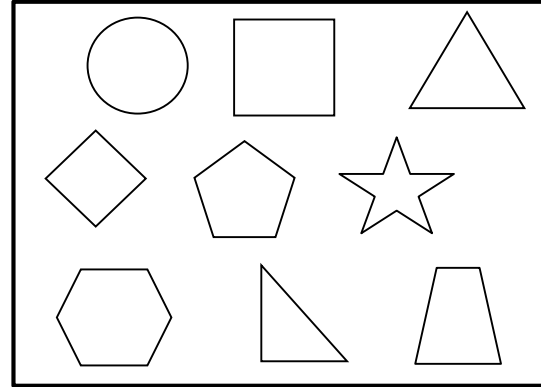
Draw 9 shapes.
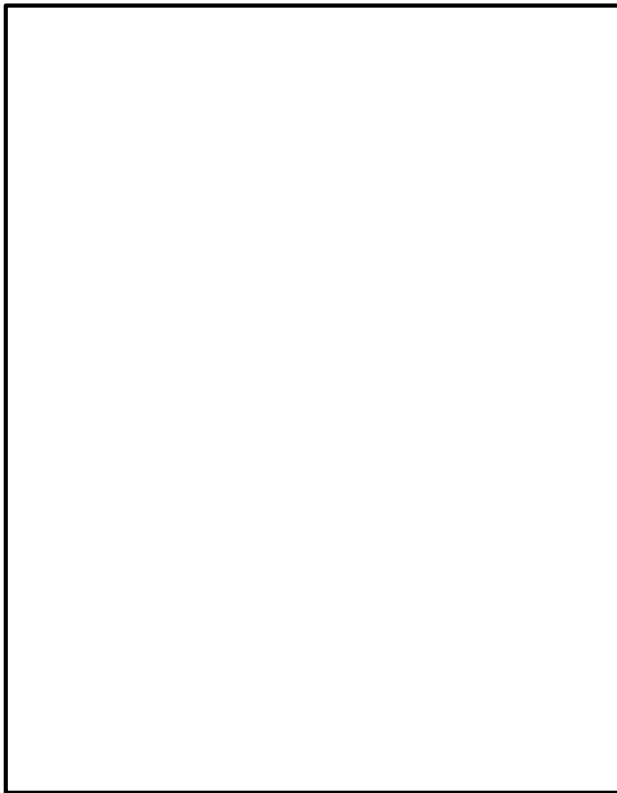
Draw 9 shapes a different way.
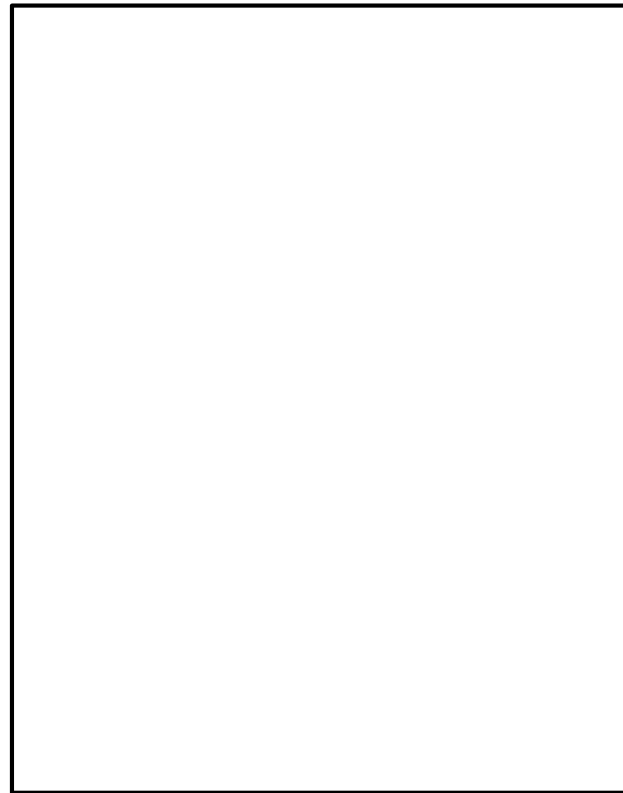
Lesson 24

Objective: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (8 minutes)
-    **Total Time**   **(50 minutes)**
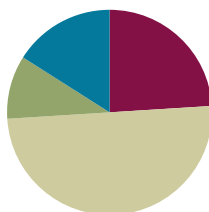
Fluency Practice (12 minutes)

- ▪ Hide and See (5 as the Total) **K.OA.2**   (4 minutes)
- ▪ Hands Number Line to 10 **K.CC.4a**   (4 minutes)
- ▪ Roll, Count, Show the Number **K.CC.4a**   (4 minutes)

Hide and See (5 as the Total) (4 minutes)

Materials: (S) 5 linking cubes, personal white board

Conduct the activity as outlined in Lesson 11, but now have students write the expressions on their personal white boards. Challenge students to list all possible combinations.

Hands Number Line to 10 (4 minutes)

Conduct the activity as outlined in Lesson 2, but now extend the number line to the right hand to show numbers 6–10. Recall that the teacher must start the number line on the pinky of the right hand so that the students do not view it in reverse. Students start from the pinky of the left hand, moving across to the pinky of the right hand without skipping any fingers.

Note: Although this method of finger counting may be tricky at first, the mathematical advantage of seeing the number line progress across the hands far outweighs the fine motor challenges.

Roll, Count, Show the Number (4 minutes)

Conduct the activity as outlined in Lesson 9. Differentiate by providing different types and number of dice for each student. Some students may be ready to use a pair of dice. (Be sure to cover the 6-dot side with a small piece of mailing label to represent 0 to ensure that the total number of dots does not exceed 10.)

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Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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Application Problem (5 minutes)

Draw 5 silly shapes. Draw 4 more silly shapes. How many silly shapes do you have?

Note: This reinforces the concept that objects need not be exactly alike or in certain configurations to make a group of 9, preparing students for today's lesson.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board (S) Bag of 10 small counters (objects should vary from student to student), plastic cup, small paper plate, personal white board with numeral formation practice sheet 9 (Lesson 24 Practice Sheet)

MP.2

T: Take out 5 counters. Count out 4 more. Put them all in your plastic cup. Shake them 9 times, and pour them onto your desk. Count your objects. How many?

S: 9.

T: How many counters are left in your bag? Say the name of what we are counting.

S: 1 counter.

T: Look at your friend's objects, and compare his group to yours. How are they alike? How are they different? (Allow time for observation.)

T: Pretend your finger is a pencil, and make imaginary lines connecting your objects one at a time as you count them. Show your partner how you counted. Did he count his the same way?

S: (Responses vary. Allow time for sharing and discussion.)

T: Now, put your paper plate upside down on your desk. Arrange your counters around the edge of your paper plate, and carefully lift it off. (Demonstrate.) What do you see?

S: A circle of counters!

T: Do you think you need to count them all again to know how many counters are on the circle? (Allow time for discussion. Guide students to realize that because of number conservation, they do not need to recount.)

T: Let's count your circle of 9 to test your idea. Show your friend how you counted. Did you both count the same way?

S: (Allow time for discussion.)

T: How did you make sure that you didn't count one twice? (Again, allow time for sharing and discussion. Point out relevant strategies such as marking the first one counted.)

> **NOTES ON**
> **MULTIPLE MEANS**
> **OF REPRESENTATION:**
>
> Teach students, especially those performing above grade level, to ask higher-order questions. Practice sentence starters such as, "I know because…" with them so that they can carry out higher-level conversations with each other in response to queries. Allow them to be creative (show, draw, or write) in how they respond to the question, "How do you know you didn't count one twice?"

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Lesson 24:   Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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T: Put 5 of your counters back in the bag. Now, put 4 counters back in the bag. How many counters did you put away? How many do you have left?

S: 9. There are 0 left.

T: Watch how I write the number 9. Follow along with your fingers in the air. "A hoop and a line. That's the way we make a nine!" (Demonstrate several times. Follow by having children write on the rug or other surface for tactile practice.) You are ready to practice writing nines on your personal white boards. When you are ready, you may take out your practice sheet and use your pencils. (Distribute penmanship practice sheets to students.)

Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Follow the directions to practice counting and writing 9. Make clear to students that when counting 9 in circular configurations, they should show their strategy for counting the stars and objects (e.g., crossing objects out, numbering each object, connecting objects using a line, etc.).

Student Debrief (8 minutes)

Lesson Objective: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

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Lesson 24:   Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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Any combination of the questions below may be used to lead the discussion.

- Talk to your friend about the two groups of circles. How are they the same? How are they different?
- With your neighbor, can you come up with another way to count the circles? How many different ways do you think we could count the circles?
- Was it easier to count the stars or objects? Why?
- How many black dots were in each group? Did all the groups of dots look the same? Can 9 be shown in different ways? How?
- What do you like about the number 9?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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Name _____   Date _____

Put this page into your personal white boards. Practice. When you are ready, use your pencil to write the numbers on the paper.
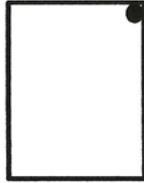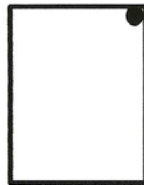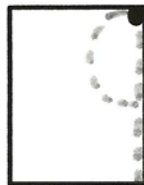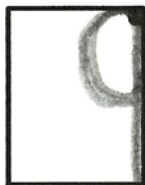
Color 9 happy faces.

Circle a different group of 9 happy faces.

numeral formation practice sheet 9

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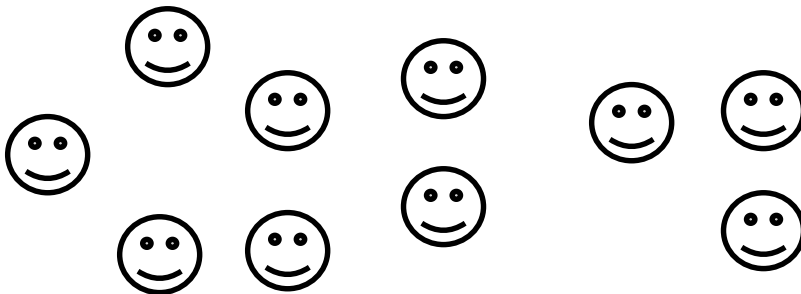
Name _____   Date _____

Draw lines to connect the circles starting at 1.
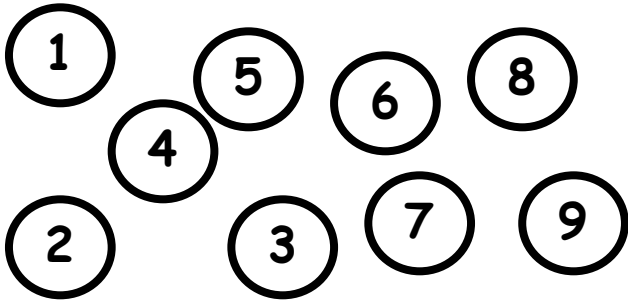
Number the dots 1–9 in a different way. Connect the circles with lines.
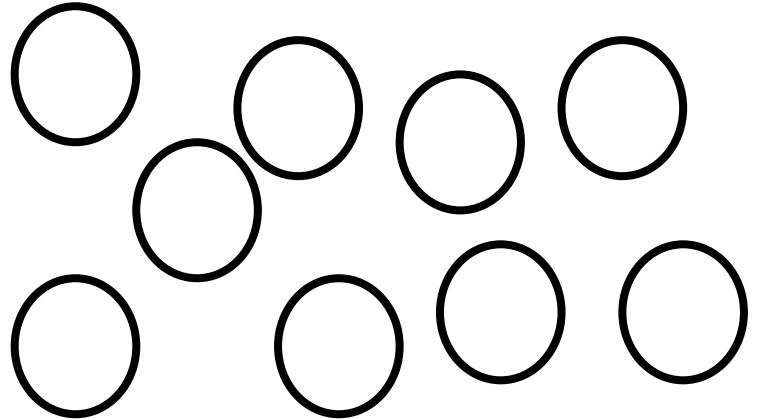
With your pencil, number the objects from 1 to 9 to show how you count the stars and objects. Write the total number of objects in the boxes.

Lesson 24:   Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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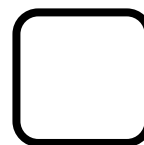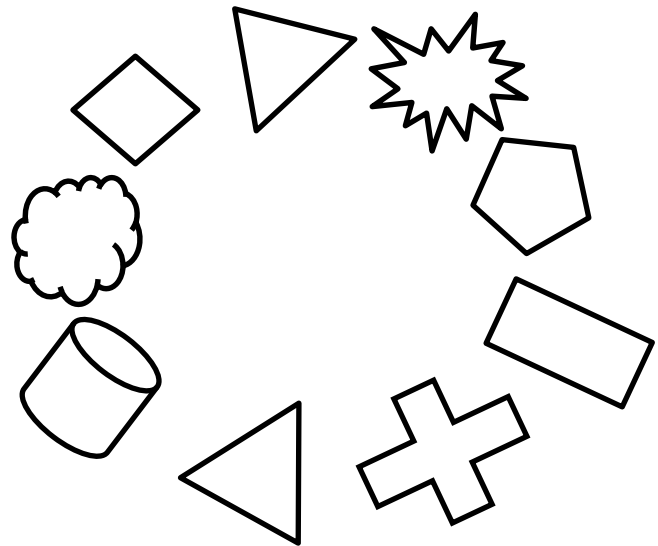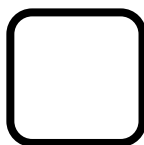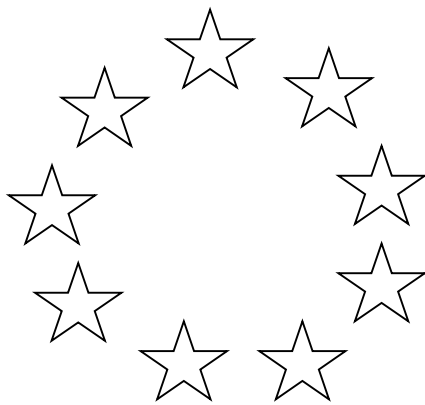
Count the dots.
Write the number.
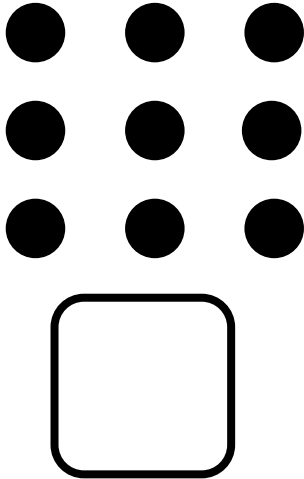
Count the dots. Write the number.
Circle a group of 5.
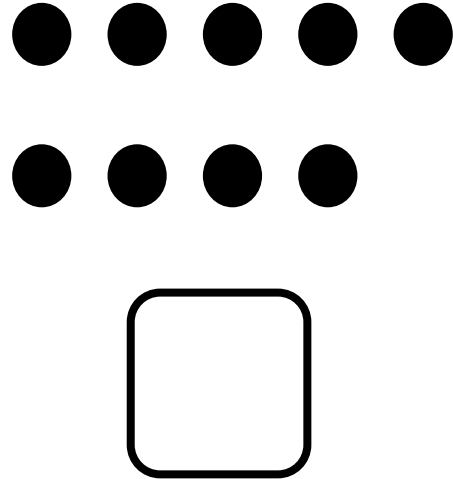
Draw more dots to make 9 in a circle.
Number the dots from 1 to 9.
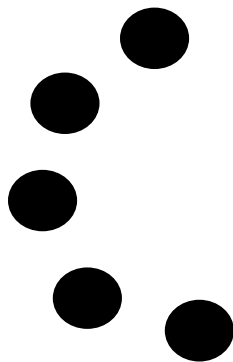
Count the dots. Circle 9 of them.
Within your 9, circle a group of 5.

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Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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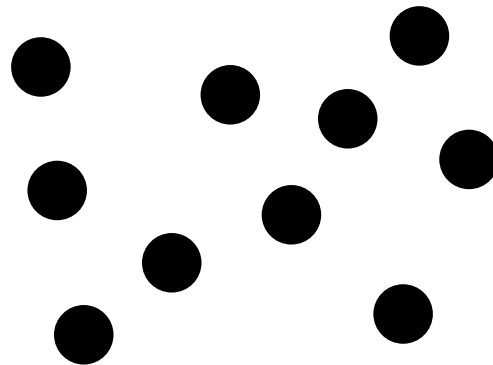
Name _____ Date _____

Color 9 shapes.

Draw 9 beans on the plate.

Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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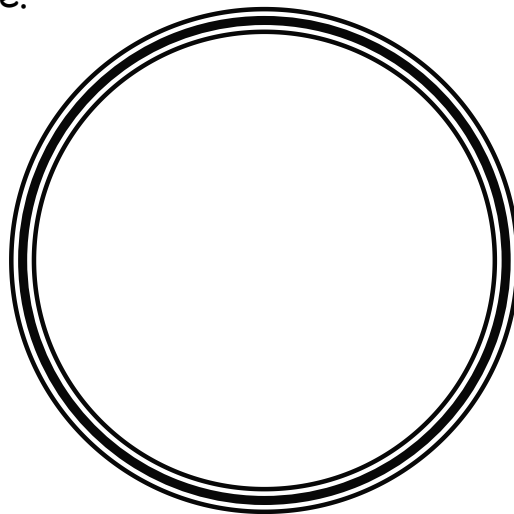
Name _____   Date _____

Number the circles from 1 to 9.   Color 9 circles.
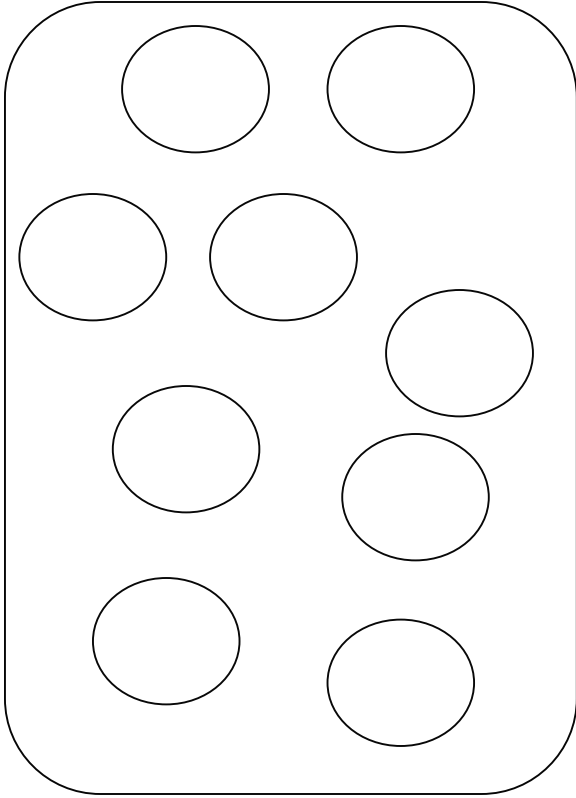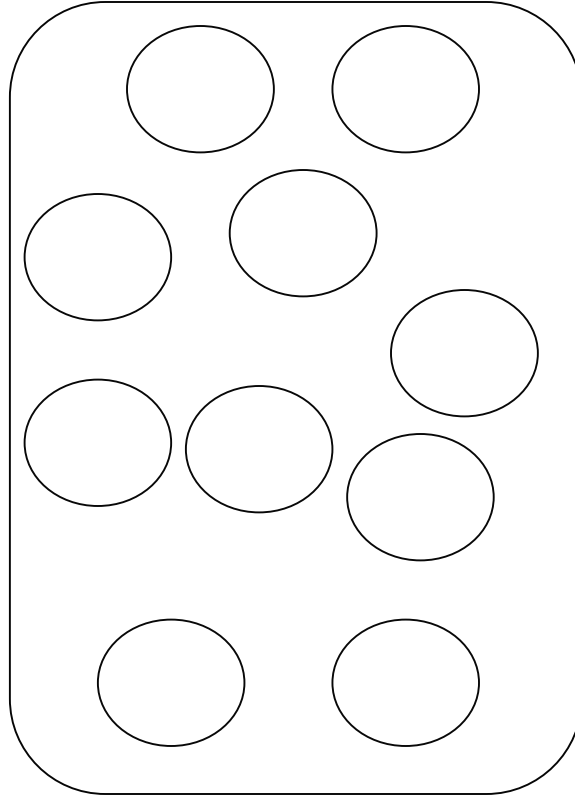
Draw 9 beads on the bracelet.   Count. Write the number in the box.

Lesson 24: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

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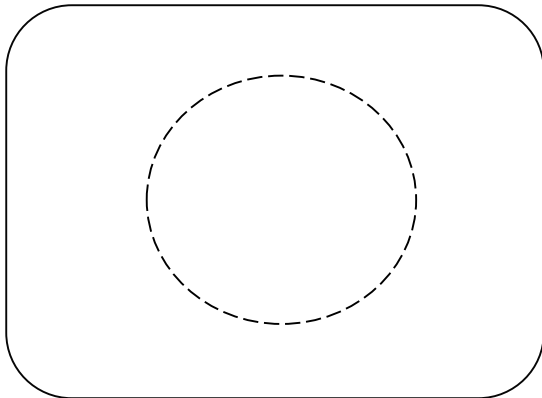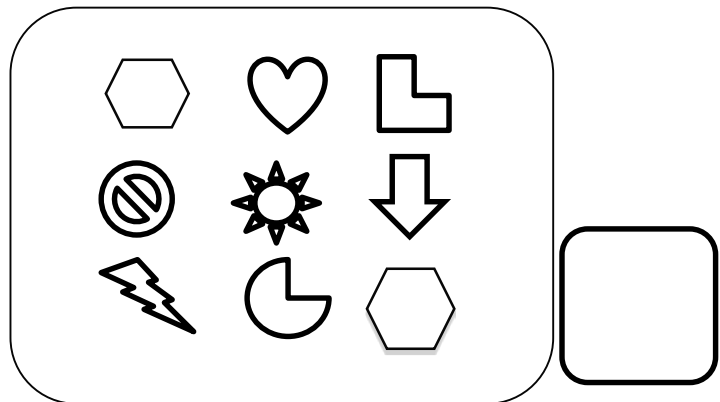
Lesson 25

Objective: Count 10 objects in linear and array configurations (2 fives).
Match with numeral 10. Place on the 5-group mat. Dialogue about
9 and 10. Write numeral 10.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)
  Total Time   **(50 minutes)**
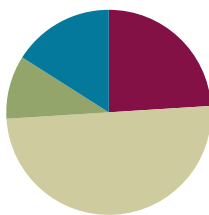
Fluency Practice (12 minutes)

▪ Five Shortcut **K.CC.2**   (4 minutes)
▪ Happy Counting Within 10 **K.CC.2**   (4 minutes)
▪ 1, 2, 3, Stand on 10 **K.CC.2**   (4 minutes)

Five Shortcut (4 minutes)

Materials: (S) Personal white board, blank 5-group (Fluency Template)

T: I'm going to say a number, and I want you to draw that many dots. Remember to start at the top, filling in the rows from left to right, the same way we see on our 5-group cards!

T: Ready? Draw 5 dots.

S: (Draw 5 dots to fill in the top row.)

T: How many dots?

S: 5.

T: Are they on the top row or bottom row?

S: Top.

T: So, if the top row is full, we know there are…

S: 5.

T: Now, show me 6 dots. (Observe carefully, noting which students simply make an additional dot and which must count from 1.)

S: (Draw an additional dot on the bottom row for a total of 6.)

T: How many dots are on the top row?

S: 5.

Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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T: Since we already know there are 5 on top, we can take the five shortcut, like this:
     Fiiiiiive (slide finger across the row of 5), 6 (point to the individual dot). Try it with me.

S: Fiiiiiive (slide finger across the row of 5), 6 (point to the individual dot).

Proceed similarly with drawing and counting 7–10 dots, starting from 5. As students develop familiarity with the exercise, reduce teacher language to increase efficiency in completing the problems.

Variation: For students who require a more concrete experience, allow them to place cubes on the blank 5-group, in lieu of drawing dots.

Happy Counting Within 10 (4 minutes)

Conduct the activity as outlined in Lesson 6, gradually building to sequences within 10. If students hesitate or have difficulty, return to work within 7. If they are ready to be challenged, quicken the pace.

1, 2, 3, Stand on 10 (4 minutes)

Conduct the activity as outlined in Lesson 22. Challenge students to complete a round of play faster than the last time. If students struggle to recall what numbers to say, prompt them by showing the numbers with fingers the Math Way, which by now they can recognize quickly.

Application Problem (5 minutes)

MP.7

Make a group of 9 smiley faces. Write the number 9. Count the smiley faces by connecting them with lines. Make sure you don't count any of them twice! Compare your picture with that of a friend. Discuss what would happen if you had another smiley face in your picture.

Note: This review problem helps students to anticipate the number 10. We call out MP.7 because students are using the structure of 9 to think about what would happen if they added another smiley face.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board (S) Bag of 10 beans, bag of 10 linking cubes (5 red, 5 blue), construction paper work mat, 5-group mat (Lesson 17 Template), 5-group cards (Lesson 7 Template 2)

T: Count 5 beans from your bag, and put them on the 5-group mat. Count out 4 more beans, and put them on the mat. How many beans do you have?

S: 9.

T: Should we fill up our mats?

S: Yes!

T: How many more beans will we need?

S: 1.

T: Go ahead and fill your 5-group mat! Now, you have 1 more than 9 beans. Let's count our beans.

S: 1, 2, 3, 4, 5, 6, 7, 8, 9,…10.

Lesson 25:   Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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T: Yes, 9 and 1 more make 10. You have 10 beans now. What do you notice about your mats?

S: We have 5 in one row and 5 in the other.

T: Ten is the same as 5 and 5. Trade each bean in your first row for a red linking cube.

S: (Trade.)

T: Now, trade each bean in your second row for a blue linking cube. What do you see?

S: The rows are exactly the same size. → We have 5 red and 5 blue. → Our mats are full. → We have 10 cubes.

T: Let's make towers! Put your red cubes together in a tower and your blue cubes in another tower. How many cubes are in each tower?

S: 5.

T: Put your towers together to make a taller one! Count your cubes. How many are there?

S: 10.

T: Let me show you how to write the numeral for 10. (Demonstrate on the classroom board.) Find the number card that shows how many cubes are in your tower. Hold it up. How many?

S: 10.

T: We are going to take our towers apart in a special way. Listen carefully! Make your tall tower into red and blue towers. Take off one red cube and one blue cube, and put them in a little row on your work mat. How many cubes are in your row?

S: 2.

T: Make a row underneath that is exactly the same as your first row. (Repeat.) Do we have enough left to make more rows like this? Keep going until your cubes are gone. What do you notice?

S: We have 5 rows of 2. We have 10 cubes.

T: What happens if you turn your work mat like this? (Demonstrate turning the mat from horizontal to vertical.) What do you see?

S: Now, we have 2 rows of 5, but we still have 10 cubes. (Repeat this exercise a few times to show the different arrays and to reinforce understanding of number conservation.)

T: Hold up the card that shows how many cubes are on your mat. How many?

S: (Hold up the card.) 10.

T: Put 1 cube away. I wonder how many you still have left on your mat? (Allow time for discussion.) Now, put 9 cubes away, and get ready for your Problem Set.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Help English language learners understand the directions by gesturing with arms extended fully to the sides while instructing them to place their linking cubes in a row. Or, point to a visual of *row* while giving directions. Alternatively, ask students to show you a row with their arms to be sure that the instructions are clear.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Increase the pace of learning for students performing above grade level by asking them to show how they would represent an array of the 9 remaining cubes. Pair them up to discuss the differences between an array of 10 linking cubes and an array of 9 linking cubes. Have them find shortcuts to move between the two arrays.

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Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Student Debrief (8 minutes)

Lesson Objective: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write number 10.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Discuss the groups within 9. Nine is 5 and 4. How does 10 change the 5-groups?
- How did you color 5 squares? Did your partner color in the same way?
- How are the ladybugs and squares different in how they are placed on the paper?
- Focus on 10 as being 2 rows of 5 or 5 rows of 2. Also, find hidden partners inside 9 and 10.
- What did you learn today about the number 10?

Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Name _____   Date _____

Color 5 ladybugs in a row. Color the remaining ladybugs a different color. Count all the ladybugs. Write how many in the box.
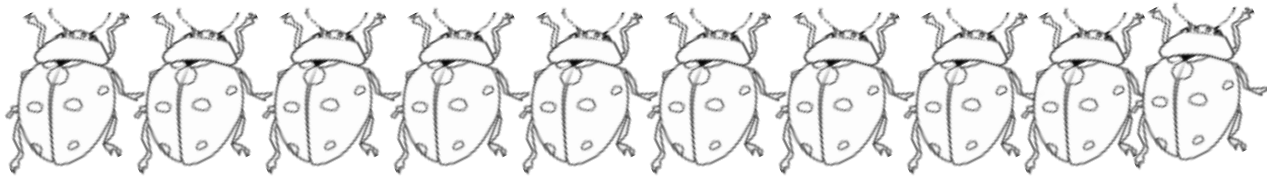
Color 5 diamonds in a row. Color the remaining diamonds a different color. Count all the diamonds. Write how many in the box.
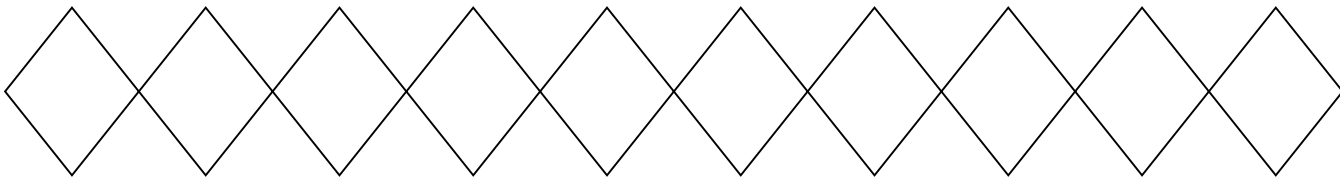
Color 5 circles. Then, draw 5 circles to the right. Count all the circles. Write how many in the box.
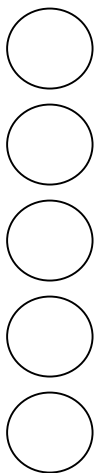
Color 5 circles. Then, draw 5 circles below. Count all the circles. Write how many in the box.

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Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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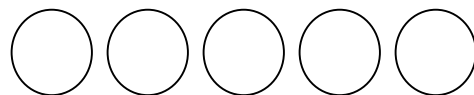
Color 5 ladybugs. Count all the ladybugs. Write how many in the box.
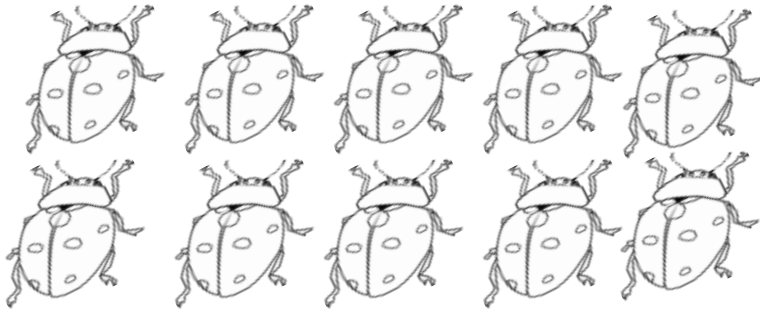
Color 5 squares. Count all the squares. Write how many in the box.
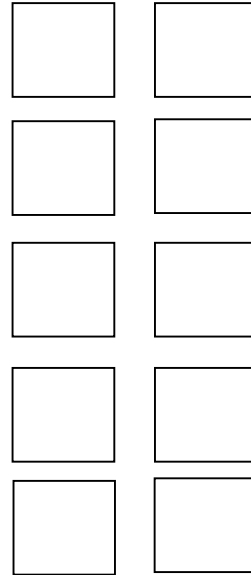
Color 5 circles. Draw 4 circles to finish the row. Color the bottom 5 a different color. Write how many circles in all in the box.

Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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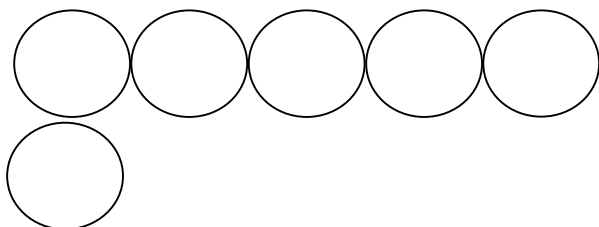
Name _____ Date _____

Draw 5 more circles. How many are there now? Write how many in the box.

Color 5 blocks blue. Color 5 blocks green. Write how many in the box.

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Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Name _____   Date _____

Color 9 squares. Color 1 more square a different color.
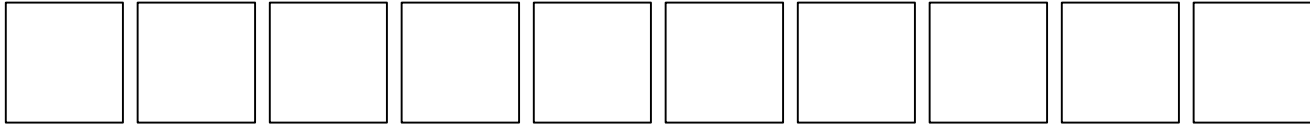
Color 9 squares. Color 1 more square a different color.
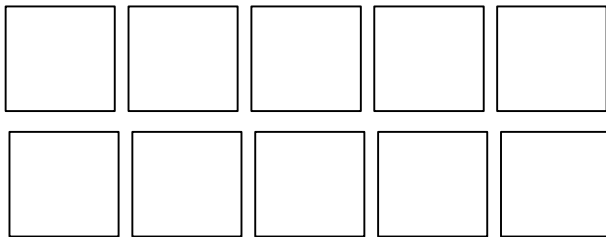
Color 5 squares. Color 5 more squares a different color.
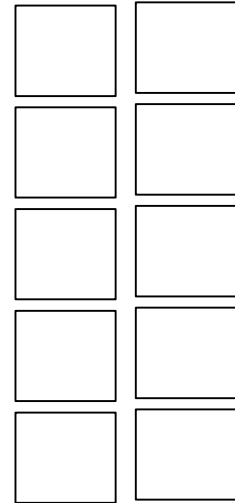
Draw 10 circles in a line. Color 5 circles red. Color 5 circles blue.

Draw 5 circles under the row of circles. Color 5 circles red. Color 5 circles blue.

Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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blank 5-group

Lesson 25: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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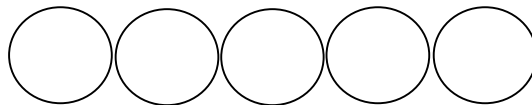
Lesson 26

Objective: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)

  Total Time   **(50 minutes)**
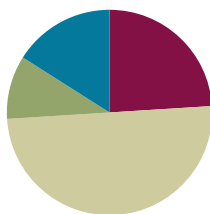
Fluency Practice (12 minutes)

▪ Roll, Count, Show the Number **K.CC.4a**   (4 minutes)
▪ Match Movements to Counts **K.CC.4b**   (4 minutes)
▪ See, Count, Write Numbers to 10 **K.CC.5**   (4 minutes)

Roll, Count, Show the Number (4 minutes)

Conduct the activity as outlined in Lesson 9. Be sure to cover the 6-dot side to represent 0, ensuring that the total number of dots does not exceed 10.

Match Movements to Counts (4 minutes)

Select two students. One student chooses a number from 1 to 10; the other student selects a movement or exercise to do that number of times. For each movement, maintain an even pace. Do not allow students to count too quickly. Do the movement with the class, but do not count with them.

  Student A: The number is 4.

  Student B: Clap hands.

  T: So, what do we do, everyone?

  S: Clap our hands 4 times.

  T: Ready? Go!

  S: 1 (clap), 2 (clap), 3 (clap), 4 (clap).

Choose two more students, and repeat with different numbers and movements.

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Lesson 26:   Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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See, Count, Write Numbers to 10 (4 minutes)

Materials: (S) Personal white board

Conduct the activity as outlined in Lesson 15, but extend to 10. Using the personal white boards allows students to provide immediate feedback—a thumbs up, or try again. Reinforce proper numeral formation as well. Challenge early finishers by asking *what if* questions. For example, "What if there were 2 more dots? What if 1 disappeared?"

Variation: Show objects in different configurations such as those on 5-group cards; name objects in the room for students to count.

Application Problem (5 minutes)

Let's build a wall! Draw a row of 5 bricks. Build your wall by drawing another row of 5 bricks on top. How many bricks did you draw?

Note: The exercise reinforces the count of 10 in an array formation, anticipating today's Problem Set.

Concept Development (25 minutes)

Materials: (T) Cardboard writing frame on board (S) Bag of pony beads (5 red and 5 white), pipe cleaner or lanyard for bracelet, 5-group mat (Lesson 17 Template), personal white board with numeral formation practice sheet 10 (Lesson 26 Practice Sheet)

MP.7

T: Take 5 red beads from your bag, and put them onto the mat. Take 5 white beads from your bag, and put them onto the mat. What do you see? How many beads do you have?

S: We have two groups of 5 → We have 10 beads.

T: Yes! 10 is the same as 5 and 5. Turn your mats so the rows become columns. How many beads?

S: Still 10.

T: Now, take your red beads, and make a row on your desk. How many red beads?

S: 5.

T: Make another row with your white beads underneath your first row. Do you still have 10 beads? How do you know? (Allow time for discussion. Help students to line up the rows carefully so they are prepared to draw fairly accurate rows on the Problem Set.)

T: Can you move your red beads so they make a column? (Demonstrate if necessary.) Now, make a column with your white beads next to it. What do you notice? (Encourage students to notice that there are now 5 rows of 2. They may need to separate the rows a bit to make this more intuitive.)

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> Help English language learners understand the instructions by gesturing with arms extended fully above the head while instructing students to make their beads into a column. Or, point to a visual of *column* while giving directions. Alternatively, ask students to show a column with their arms to be sure that the instructions are clearly understood.

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Lesson 26:   Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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T: How many beads?

S: 10.

T: We are going to make bracelets to celebrate the number 10. Take your 5 red beads, and put them onto the pipe cleaner. (Demonstrate.) How many are left on your desk?

S: 5.

T: Now, put 5 white beads on your bracelet. Close it like this. (Demonstrate and assist if necessary.) Push your beads all together on your bracelet. How many beads are in the row?

S: 10.

T: I wonder what happens if we move one bead to the other side of your bracelet. (Demonstrate.)

S: We have 9 beads on 1 side and 1 bead on the other.

T: What if we separate the red and white beads into groups on our bracelet?

S: The bracelet looks different. → The groups are exactly the same size. → We have a red and a white part. → We have two groups of 5. → We still have 10 beads.

T: You can put your bracelets on and take them home to show your family about your bead groups. Show your bracelet to a friend, and tell her about your beads!

S: (Allow time for comparison and discussion.)

T: Let's write the number that shows how many beads are on your bracelet. We write the number 10 like this. (Demonstrate in the cardboard writing frame. Use the rhymes for numeral formation, if desired.)

T: Try it with your skywriting while I show you again on the board. (Repeat. Follow by having children practice with their fingers on the rug or table for tactile reinforcement.) You may practice writing tens on your personal board. When you are ready, take out your practice page, and write tens with your pencil. (Distribute penmanship practice sheet to students.)

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Because understanding the number 10 deserves special attention, help special needs students by using different representations of 10 (fingers, pennies, ten frames of different objects, pictures, and other visuals of 10 objects scattered and on 5-group mats) to assist students in mastering this important milestone. Use interactive technology such as the activity found at:
>
> http://illuminations.nctm.org/ActivityDetail.aspx?ID=75.
>
> Note that the website uses the 10-frame (rather than the 5-group configuration), which keeps the two fives very close together. This will be used more in Module 5 as students work with 10 ones within teen numbers.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Have students color, count, and draw the groups of 10. Have them draw a picture of their bracelet on the back.

| | **Lesson 26:** | Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10. | | **261** |

Student Debrief (8 minutes)

Lesson Objective: Count 10 objects in linear and array configurations (5 and 5). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write number 10.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Show your partner how you made your yellow and blue circles.
- With your partner, count the gray cubes. Then, count the white cubes. What was the last number you said when you counted each group?
- Look at one of your hands. Is there anything the same about your fingers and the things we just counted?
- Think about when we matched our fingers on one hand to our other hand. Is there something on your Problem Set that is like what we did with our fingers? How?
- Tell your friend about the beads on your bracelet. Count them together. Can you count them another way?
- What do you like about the number 10?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 26:   Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Name _____   Date _____

Put this page into your personal white boards. Practice. When you are ready, write your numbers in pencil on the paper.

_____

_____

_____

_____
numeral formation practice sheet 10

Name _____   Date _____

Draw 10 circles in a row. Color the first 5 yellow and the second 5 blue.
Write how many circles in the box.

Draw 5 circles in the gray part. Draw 5 circles in the white part.
Write how many circles in the box.

Draw two towers of 5 next to each other. Color 1 tower red and the other tower orange. Circle groups of two.

Draw a row of 5 cubes. Draw another row of 5. Count. Write how many cubes.

Draw a picture of your bracelet on the back of the paper.

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Lesson 26: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Name _____   Date _____

Color 5 blocks red and 5 blocks green. How many blocks? Write how many in the box.
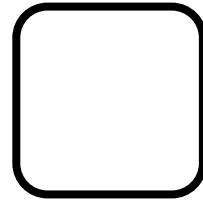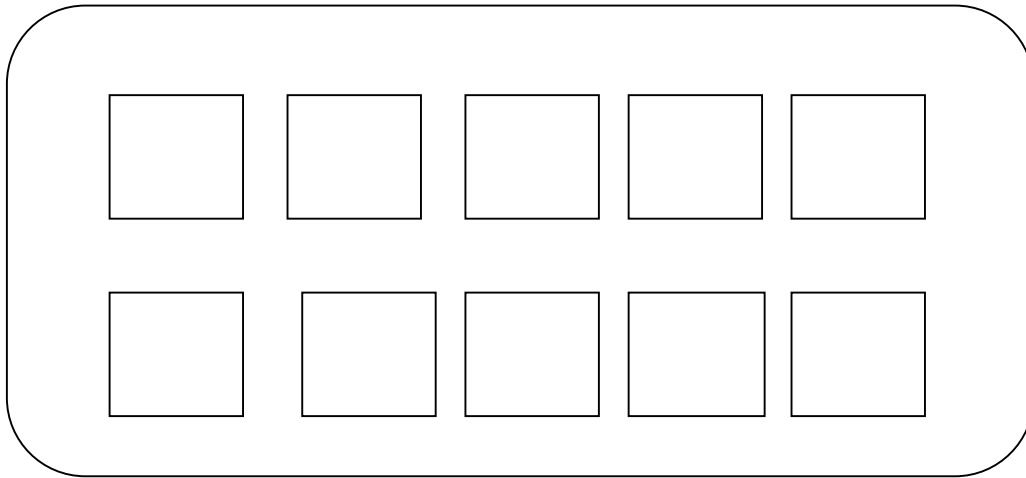
Color 5 blocks brown and 5 blocks yellow.
How many blocks?

Write how many in the box.
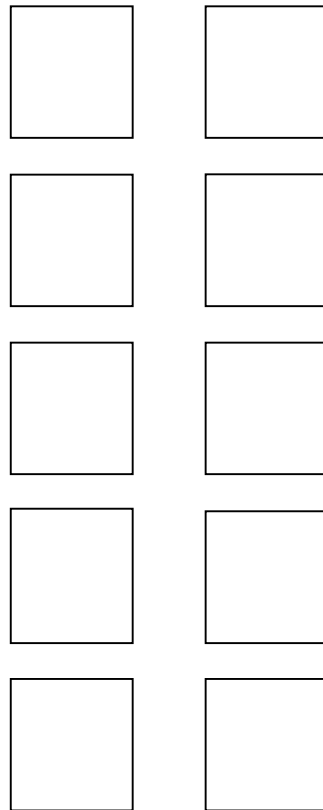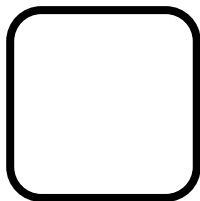
Name _____   Date _____

Draw 5 triangles in a row. Draw another 5 triangles in a row under them.

How many triangles did you draw?

Write the number in the box.

Write how many in the box.

Write how many in the box.

Lesson 26: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

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Lesson 27

Objective: Count 10 objects, and move between all configurations.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)
   Total Time   **(50 minutes)**

Fluency Practice (12 minutes)

▪ Four Corners (Pairs of 5-Groups) **K.CC.4b**   (4 minutes)
▪ Rekenrek Roller Coaster to 10 **K.CC.4a**   (4 minutes)
▪ Line Up, Sprinkle, Circle **K.CC.5**   (4 minutes)

Four Corners (Pairs of 5-Groups) (4 minutes)

Conduct the activity as outlined in Lesson 18, but form groups of 10 instead. Have students first form groups of 5, and th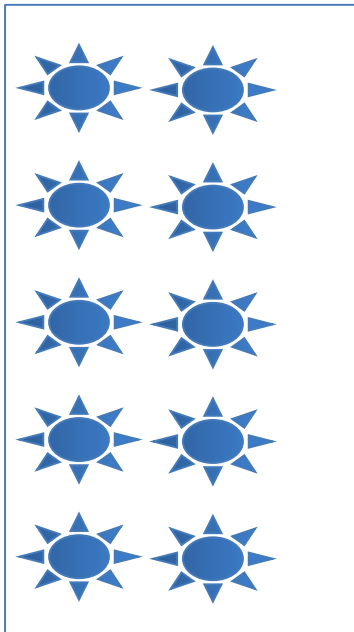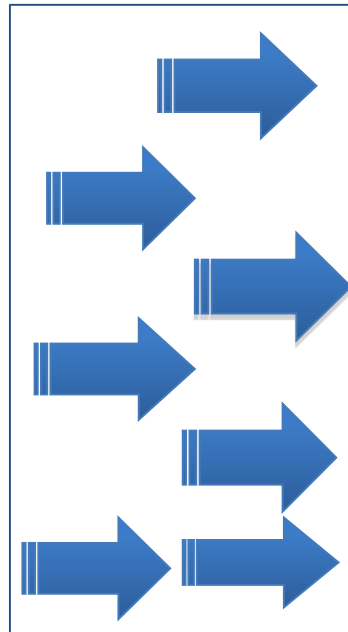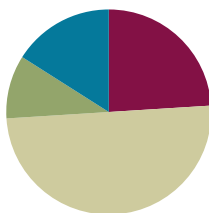en pair each 5-group with another 5-group to make 10. If the number of students present does not allow for forming equal groups, use puppets or stuffed animals as stand-ins. Just be sure to explain that they are to be counted as additional *students*. The activity can be done with counters instead.

Rekenrek Roller Coaster to 10 (4 minutes)

Conduct the activity as outlined in Lesson 7. Consider alternating between the 5-group orientation (e.g., 6 as 5 red beads on top and 1 red bead on the bottom) and the color change orientation (e.g., 6 as 5 red beads and 1 white bead on the top row). Just be sure to alert students to the different types of orientation so that they know what to expect. ("Now, I'll show you the 5-group way.")

Line Up, Sprinkle, Circle (4 minutes)

Conduct the activity as outlined in Lesson 10. This can also be played as a partner game, with two partners showing the same number of beans but in different configurations.

Application Problem (5 minutes)

Create a snowman that is 5 snowballs high. Make a friend next to him that is also 5 snowballs high. How many snowballs did you use? Write the number.

Note: In this problem, students draw 10 in an array configuration to prepare for drawing 10 in different ways in today's lesson.

Concept Development (25 minutes)

Materials: (S) Bag of 10 small counters (objects should vary from student to student), 5-group mat (Lesson 17 Template), work mat inscribed with a large circle, plastic cup

T: Take out 5 of your counters, and put them on the 5-group mat. Now, count out 5 more, and put them on the mat. How many?

S: 10.

T: Show your friend how you counted. Did you both count the same way? How did you make sure you didn't count one twice?

S: (Responses vary. Allow time for sharing and discussion.)

T: Let's pretend these are beads like the ones we used on our bracelet yesterday. Arrange your counters on the big circle to look like a bracelet. Do you think you need to count them all again to know how many counters are on your bracelet? (Allow time for discussion. Guide students to realize that because of number conservation, they don't really need to recount.)

T: Let's count to test your idea. With your pencil, make a mark by the bead you will use to start your counting, and then count. How many?

S: 10.

T: Show your friend how you counted. Did you both count the same way? How did you make sure you didn't count one twice?

MP.7

S: (Responses vary. Allow time for sharing and discussion.)

T: This time, start with a bead on the other side of the bracelet and count again. Do you have the same number? How do you know?

S: (Responses vary. Guide students to again discuss the conservation of number.)

T: This time, let's put our counters in a long row across the paper. How many counters do you have now? This is a long row! Let's make some smaller ones. Take all your counters off.

T: Now, put five of your counters in a row on your work mat. Make another row of counters underneath the first one. (Demonstrate.) What do you notice?

S: We have 2 fives. → We have two 5-groups. → The rows are exactly the same. → We have 10.

T: Turn your mat so your rows look like towers. (Demonstrate.) What do you see now?

S: We have little rows. → The rows have 2 counters. → There are 5 little rows. → We still have 10.

T: Put your counters in the plastic cup. Shake them up 10 times, and pour them onto your work mat. (Demonstrate.) Count your objects. How many?

S: 10.

T: Look at your friend's work mat, and compare his set to yours. How are they the same? How are they different? (Allow time for observation.) Show each other how you counted. Did you count them the same way?

S: (Responses vary. Allow time for sharing and discussion.)

MP.7

T: Put 5 of your counters back in the bag. Now, put 5 more counters back in the bag. How many counters did you put away? How many do you have left?

S: 10. There are 0 left.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> For the students who are still counting their beads after every change, repeat the process by asking them to organize their beads into two rows and count them, and then move them into a circle and recount. Let students try as many times as they need in order to be convinced that they no longer need to recount and are able to say that they have 10 beads, no matter how they display them. This may take many weeks. Be patient!

Problem Set (6 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Guide students to color the first shape counted in the circular configuration. Read the directions step by step for drawing the cookies and the flowers.

Remind students to connect the apples as they are counting. Make a different counting path for each set of apples.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Challenge students by asking them to find different hidden partners inside 10.

Student Debrief (8 minutes)

Lesson Objective: Count 10 objects, and move between all configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

Have students come to the carpet and discuss the Problem Set.

- With which circle did you begin counting? Was it different from your partner's?
- How did you draw your 10 circles? Compare your drawings with your partner's.
- (Discuss the pattern of counting in the scattered array.) How was this counting path different from the first path? How was your partner's counting path different?

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Lesson 27: Count 10 objects, and move between all configurations.

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- Lead a discussion for the best path students used to count the scattered configuration.
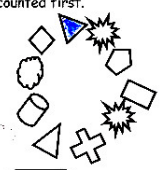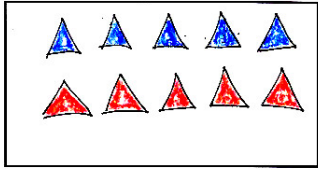- The number 10 is very special for our bodies. Why do I say that?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 27:   Count 10 objects, and move between all configurations.

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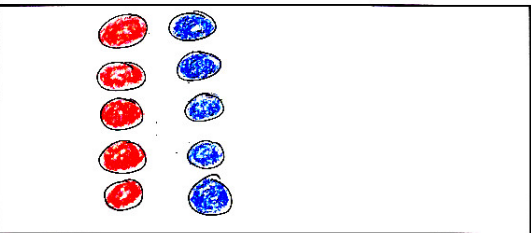Name _____   Date _____

Count the shapes, and write how many. Color the shape you counted first.
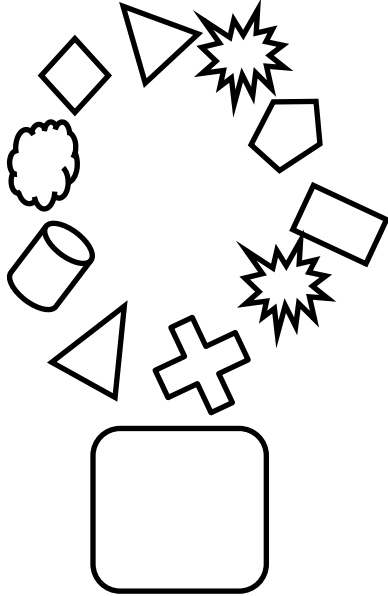
Draw 10 things. Color 5 of them. Color 5 things a different color.
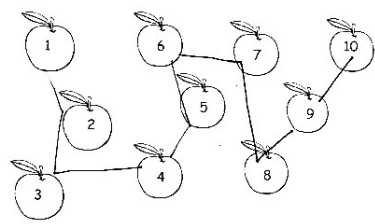
Draw 10 circles. Color 5 circles. Color 5 circles a different color.
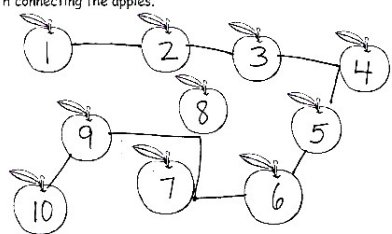
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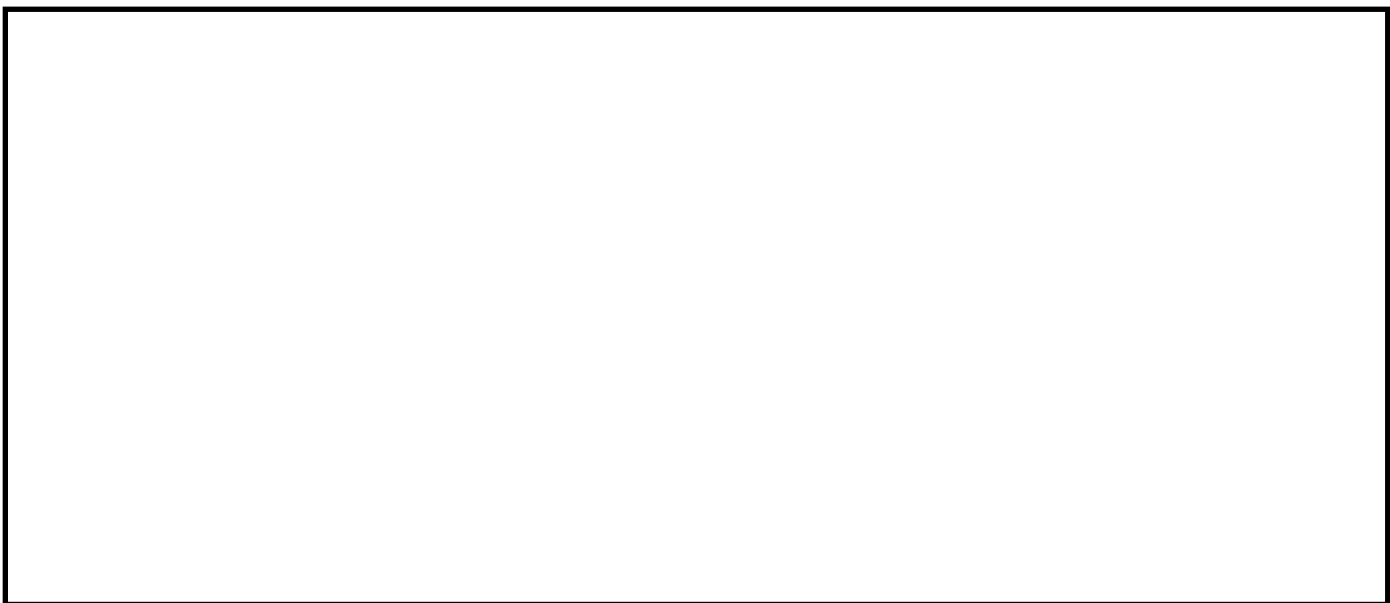
Show how many apples by drawing a path between them as you count.
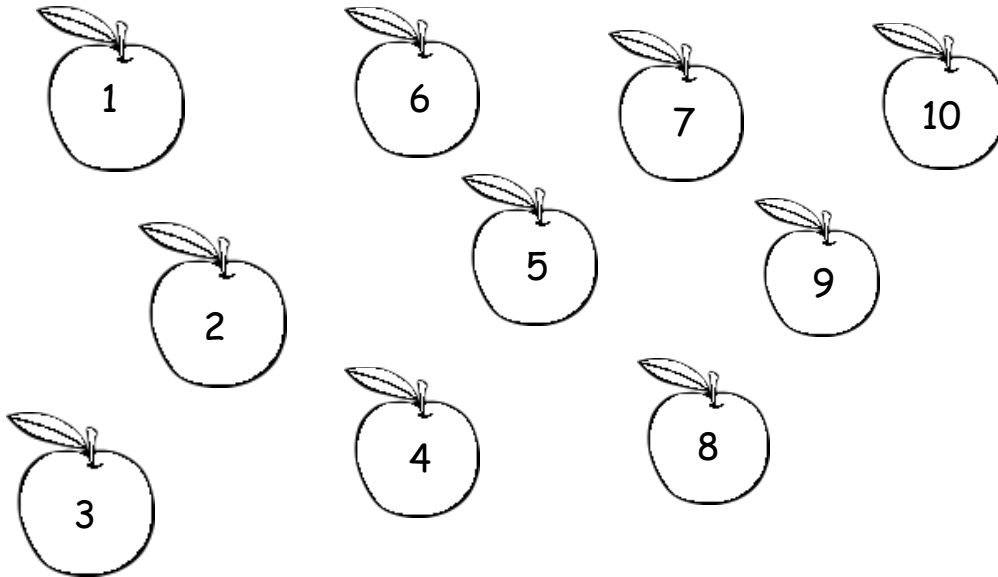
Write the numbers 1 to 10 in the apples a different way. When you count, draw a path connecting the apples.

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Lesson 27:   Count 10 objects, and move between all configurations.

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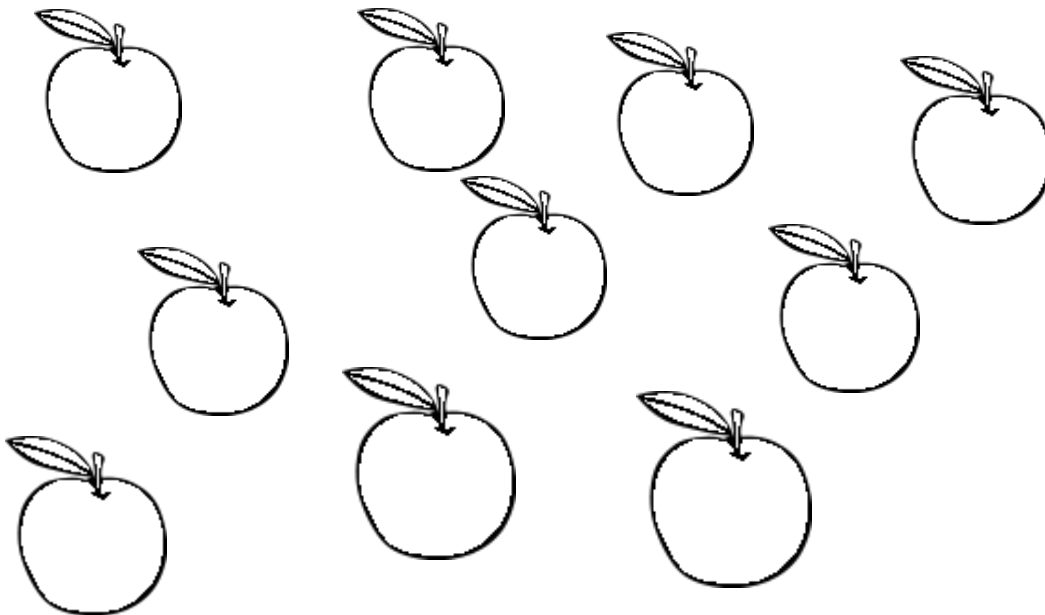
Name _____   Date _____

Draw 10 beads on the bracelet.
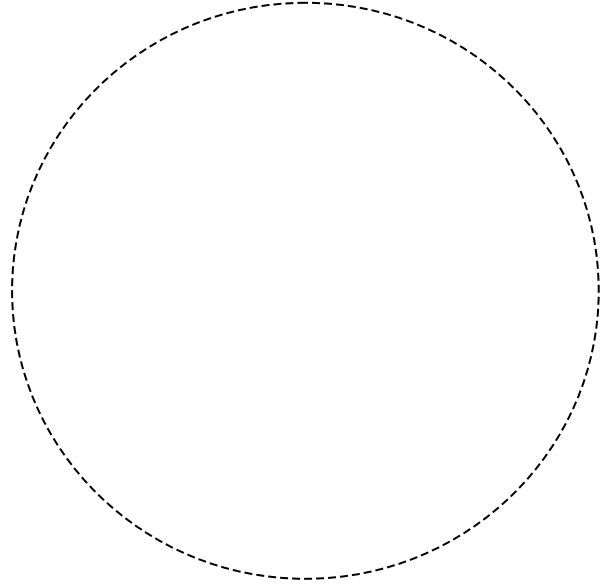
Count and write the numbers 1 to 10 in the ⬠ . Write how many in the box.

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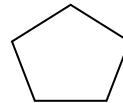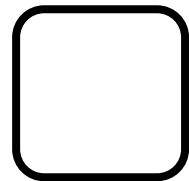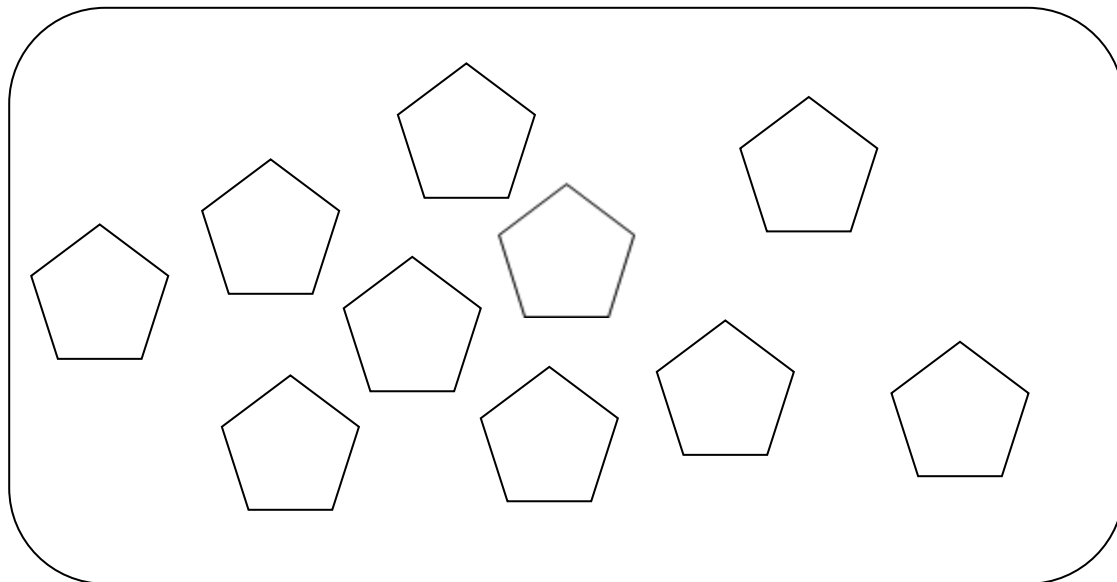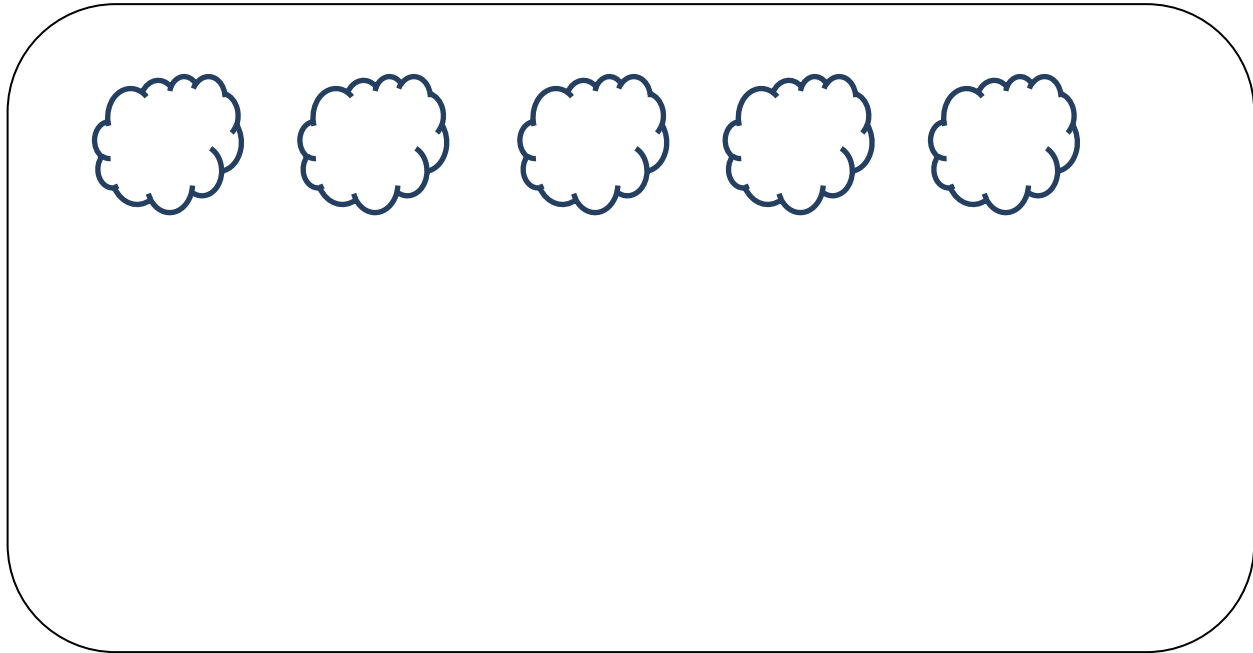
Name _____   Date _____

Draw enough ☁ to make 10.

Draw enough ☺ to make 10.

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Lesson 27:   Count 10 objects, and move between all configurations.

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Lesson 28

Objective: Act out *result unknown* story problems without equations.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (8 minutes)

  Total Time   **(50 minutes)**
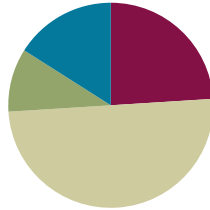
Fluency Practice (12 minutes)

- ▪ How Many? **K.CC.4b**   (4 minutes)
- ▪ Wet Dog Counting **K.CC.4a**   (4 minutes)
- ▪ Rekenrek Counting **K.CC.2**   (4 minutes)

How Many? (4 minutes)

Materials: (S) Bags of red and white beans, construction paper work mat, die

1. Partner A rolls a die, and places that many beans on his mat.
2. Partner B rolls a die, and places that many beans on her mat.
3. Partner A counts how many beans on both of their mats.
4. Partner B counts to verify or disagree, and then recounts with Partner A, if necessary.

Circulate to observe and provide support.

Wet Dog Counting (4 minutes)

T: Pick a number between 1 and 10. (Call on a student.)

S: 4.

T: Wet dog for 4. Ready?

S: 1, 2, 3, 4 (while shaking the right arm); 1, 2, 3, 4 (while shaking the left arm); 1, 2, 3, 4 (while shaking the right leg); 1, 2, 3, 4 (while shaking the left leg).

Select another student to choose another number, and repeat.

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Lesson 28:   Act out *result unknown* story problems without equations.

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Rekenrek Counting (4 minutes)

Conduct the activity as outlined in Lesson 4, but introduce a layer of complexity by having students whisper the numbers. Here is a suggested way to introduce the whisper/talk counting activity.

> T: Let's whisper/talk. When I do this (demonstrate whisper signal as finger to lip), whisper how many beads you see, but if I do this (extend hand toward students), say how many out loud.

Having students *think* the numbers forces them to hold the counting sequence in their mind, relying on an internal number line until they can say the numbers aloud again. Here is a suggested way to introduce the think/talk counting activity.

> T: Let's think/talk. When I do this (touch temple), say the number in your mind; but if I do this (extend hand toward students), say how many out loud.

Application Problem (5 minutes)

Draw a bracelet with 10 beads. Make sure that your bracelet is closed so the beads don't fall off! Show your bracelet to a friend, and have her count your beads. Did you both count them the same way? Are there any smaller numbers inside your bracelet?

Note: Requiring the students to articulate their counts of 10 and to observe numbers within their count prepares them for more precise discussions in today's lesson.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Help English language learners participate and discuss strategies for counting their beads by providing them with sentence starters such as, "I counted my beads by…" Giving students a place to start reduces their anxiety about using the language.

Concept Development (25 minutes)

Materials: (T) 10 sheets of construction paper, each labeled with a large number (1–10) placed in a row on the floor in the front of the room to make a number path, set of number cards (1–10) (S) Bag of 20 loose linking cubes (10 red, 10 white)

Note: In preparation for the opening activity, give ten students one of the number cards.

> T: We are going to have a math play! First, I need some actors. If I have given you a card, please come up to stand in that place on the **number path**.
>
> S: (Find their places.)
>
> T: (Check for accuracy, and collect cards.) Now, actors, listen to my story, and do what I say. I will need help from the audience, too. (A sample story is outlined here; it may be modified to reflect other activities currently taking place in class.)
>
> T: Once upon a time, there were some lovely children on a path in the village. How many children were on the path? (Wait for audience to count.)
>
> S: There were 10.
>
> T: There are 10 children and 10 squares on the number path. The children were walking to a birthday party. (Have students march in place.)

Lesson 28:   Act out *result unknown* story problems without equations.

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T: On the way, 5 of them got tired and had to sit down. (Indicate that the first 5 students should sit on their numbers.) How many children are on the path?

S: There are 5 sitting and 5 standing. → There are 10 on the path.

T: After they rested for a little while, they got up, and the group continued on its way. (Have children march in place again.) Suddenly, the last 2 children had to stop to tie their shoes. (Have two children pretend to tie their shoes.) How many children are tying their shoes?

S: 2.

T: How many are still walking?

S: 8.

T: How many children in all?

S: 10.

Repeat various scenarios to reflect a variety of number combinations within 10.

T: Finally, the children got to the party and had a wonderful time eating cake!

S: (Pantomime eating cake.)

T: After they played some games, the first child had to go home. (Have the child standing on the number 10 return to her seat.) Look at our number path now! How many squares are empty?

S: 1.

T: How many are still full?

S: 9.

T: How many squares are on our path?

S: There are still 10 squares.

T: Soon, the next child had to go home. (Have the student standing on the number 9 go back to her seat.) How many children left the party?

S: 2.

T: How many are still here?

S: 8.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Challenge students who are performing above grade level by asking questions that move their comprehension to higher levels such as, "What would happen if two more children had to tie their shoes?" and "How many children are still walking?"

Repeat until all children are in their seats. If time permits, redistribute the cards, and allow another group of students to participate.

T: Now, let's tell some stories with our linking cubes. Take out your linking cubes, and put a row of 4 red cubes on your desk. Put another row exactly like it underneath. How many cubes?

S: There are 8 cubes.

MP.2

T: Listen to my story: "There were 8 beautiful roses planted in the garden. One day, there was a terrible snowstorm that covered 4 of the roses with snow." What can we do to show this with our cubes?

S: Let's trade 4 of the red cubes for white ones! → We will have a row of red flowers and a row of white snowy ones.

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Lesson 28:   Act out *result unknown* story problems without equations.

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T: Good idea! Now, what do you see?

S: There are 4 red and 4 white. → There are 8.

T: (If time permits, continue other stories with groups of 7 and 9, showing various decompositions. As students grow more comfortable with the exercise, allow them to contribute stories as well.)

Suggested story starters: In a bike shop, there were 6 blue bikes and 3 red bikes, etc. We are looking for baseballs. In the closet, we found 5 baseballs, and then in the garage we found 4 more, etc.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Read each of the stories. As you read, guide the students to color the pictures according to the story.

Student Debrief (8 minutes)

Lesson Objective: Act out *result unknown* story problems without equations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did the **number path** help us act out our story?

- How many red and purple flowers did it take to make 6 flowers? Talk to your neighbor: Could we color the flowers a different way and still have 6 flowers? (Discuss the donuts, shirts, and marbles the same way.)

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- Look at the 9 donuts Janet bought. Imagine that Janet bought 8 chocolate donuts. How many strawberry donuts could Janet buy? What if Janet bought 1 chocolate donut?

- Tell your partner about the story you created with the bears. Listen to your partner's bear story. How are they different? How are they the same?

- Tell your partner about the story you created. Listen to your partner's story. Tell your math story to your family tonight.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 28:   Act out *result unknown* story problems without equations.

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Name _____   Date _____

Listen to my stories. Color the pictures to show what is happening. Write how many in the box.

Bobby picked 4 red flowers. Then, he picked 2 purple flowers. How many flowers did Bobby pick?

Janet went to the donut store. She bought 6 chocolate donuts and 3 strawberry donuts. How many donuts did she buy?
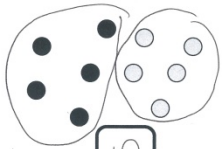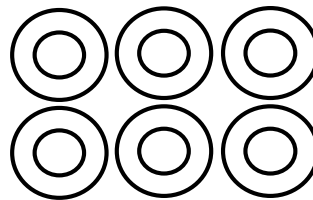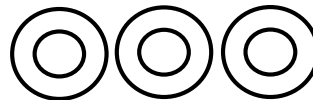
Some children were sitting in a circle. 4 of them were wearing green shirts. The rest were wearing yellow shirts. How many children were in the circle?
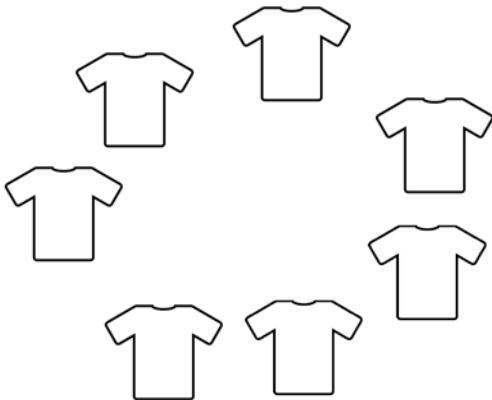
Jerry spilled his bag of marbles. Circle the group of grey marbles. Circle the group of black marbles. How many marbles were spilled?

Lesson 28:   Act out *result unknown* story problems without equations.
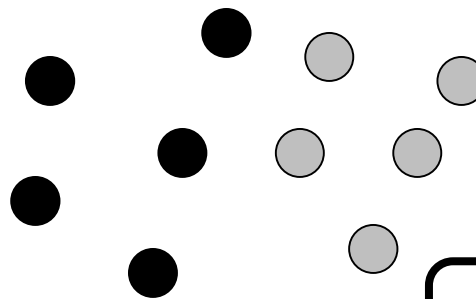
Make up a story about the bears. Color the bears to match the story.
Tell your story to a friend.

Make up a new story. Draw a picture to go with your story. Tell your
story to a friend.

Lesson 28:   Act out *result unknown* story problems without equations.

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Name _____   Date _____

How many ⬠ ?   Write how many in the box.   ☐
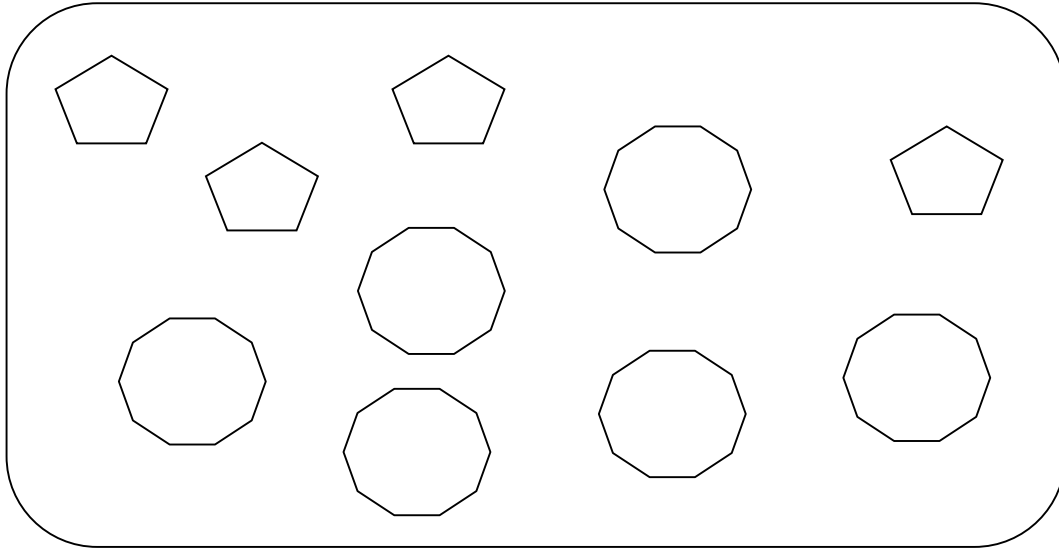
Draw 6 circles. Draw 4 triangles.   ☐

How many shapes did you draw? Write how many in the box.
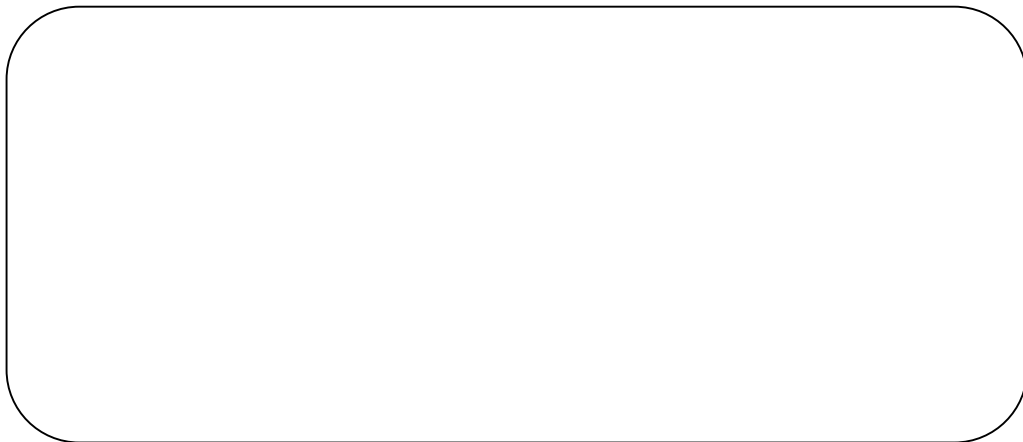
Name _____   Date _____

Make up a story about 10 things in your house. Draw a picture to go with your story. Be ready to share your story at school tomorrow.

Mathematics Curriculum

Topic G
One More with Numbers 0–10

K.CC.4abc, K.CC.2, K.CC.5

Focus Standard:	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
		c. Understand that each successive number name refers to a quantity that is one larger.
Instructional Days:	4	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

In the previous topics, students counted groups of three-dimensional objects, concretely seeing that numbers represented quantities of those objects. Topic G transitions to pictorially (two-dimensional objects) ordering and matching numeral and dot cards (dots are in a 10-frame format) for numbers 1–10.

In Lesson 29, students begin to learn, practice, and understand that each successive number name refers to a quantity that is 1 greater. This important insight leads later in the year, and in Grade 1, to the Level 2 strategy of counting on, rather than counting all (**K.CC.4c**).

Lesson 30 helps children to kinesthetically internalize the concept of 1 more by building linking cube stairs. From this concrete exercise, the students are then asked to arrange, analyze, and draw 1 more up to 10 in configurations other than the stair or tower format. They might be given a group of objects to count on paper in a scattered or circular formation and then asked to add 1 more object to the group and count again.

This concept is extended in Lesson 32 as students analyze and draw sequences of quantities of 1 more, beginning with numbers other than 1. "Susan has three apples. Jerry has one more apple than Susan. Draw Jerry's apples."
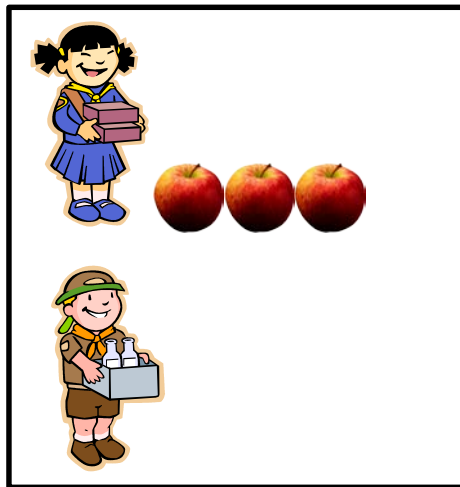
A Teaching Sequence Toward Mastery of *One More* with Numbers 0–10

Objective 1: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.
(Lesson 29)

Objective 2: Make math stairs from 1 to 10 in cooperative groups.
(Lesson 30)

Objective 3: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.
(Lesson 31)

Objective 4: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.
(Lesson 32)

Lesson 29

Objective: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

Suggested Lesson Structure

- ■ Fluency Practice   (11 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (26 minutes)
- ■ Student Debrief   (8 minutes)
-   **Total Time**   **(50 minutes)**
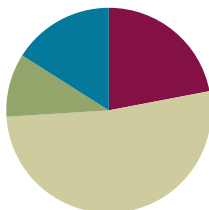
Fluency Practice (11 minutes)

- ▪ Guess the Hidden Number **K.CC.2**   (4 minutes)
- ▪ Piggy Bank Pennies **K.CC.2**   (5 minutes)
- ▪ Beep Number **K.CC.4a**   (2 minutes)

Guess the Hidden Number (4 minutes)

Materials: (S) Pennies, number path (Lesson 15 Fluency Template)

Note: Partner A closes her eyes. Partner B hides one of the numbers on the number path with a penny, and then tells Partner A to open her eyes. Partner A tells the hidden number. Partners switch roles and play again. Circulate and provide support to students who must count from 1 to determine the hidden number each time.

Variation: Cover two or three numbers with pennies.

Piggy Bank Pennies (5 minutes)

Materials: (T) Magnets or brown circles of paper to represent pennies (S) Baggie of pennies, piggy bank mat (Fluency Template)

- T: Here is a wallet (baggie) with some money in it. When I put money in my bank (model), you put the same amount in your bank. (Put 5 pennies in the bank.) Show me exactly the same number of pennies in your bank.
- S: (Place 5 pennies on their piggy bank mat.)
- T: How many pennies are in your bank?
- S: 5 pennies.

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Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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T: (Take 1 off.) Now, show this many. Raise your hand when you know how many pennies are in your bank now. (Wait for students to raise hands, and then signal.) Ready?

S: 4 pennies.

T: (Put 1 penny on the mat.) Now, show this many. Raise your hand when you know how many pennies are in your bank now. (Wait for students to raise hands, and then signal.) Ready?

S: 5 pennies.

Continue in this way, putting on and taking off small amounts, not to exceed 10. Insist that students state the unit (pennies) each time. Watch carefully to see which students must recount each time. Support them by making connections to the counting exercise sequences. Continue with the following possible sequence: 1, 2, 3 and 2, 3, 4.

Beep Number (2 minutes)

Optional Materials: (T) Personal white board (S) Number path (Lesson 15 Fluency Template)

Conduct the activity as outlined in Lesson 15, but this time, focus on sequences beyond 5. Here is a sample sequence that goes from simple to complex:

 7, 8, beep!

 7, beep, 9.

 Beep, 8, 9.

Variation: Extend the sequences to four numbers, for example 7, 8, beep, 10.

Application Problem (5 minutes)

Draw 10 little dishes on your paper. Write the numbers 1–10 on your dishes. On some of your dishes, draw 1 scoop of strawberry ice cream. In the rest, draw 1 scoop of chocolate ice cream. Show your treats to a friend. Do your treats look alike?

Note: The review of writing numerals 1–10 prepare the students for today's Problem Set.

Concept Development (26 minutes)

Materials: (S) 1 set of 5-group cards (Lesson 7 Template 2)

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

English language learners might not be familiar with a scoop of ice cream. Show a picture of a scoop of ice cream, or, depending on the number of English language learners in the class and their backgrounds, suggest that they draw a comparable but culturally familiar object to allow the lesson to proceed.

Note: Remember to practice restraint. In Module 3, we introduce the complexity of 4 is *1 less than* 5.

T: We are going to play the game Mix and Fix Numbers 1–10. Do you remember how to play? (Review directions found below, if necessary.)

T: Good! Mix up your cards, and scatter them on your desk in front of you. Make sure that each card has the numeral facing up. When I say go, put your cards in increasing order in a straight row on your desk. What should your row of cards say?

S: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

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T: Ready? Set. Go! (Circulate to ensure accuracy.)

S: (Arrange cards, numeral side up, in a row in front.)

T: Turn over the card that says 1. What do you see?

S: 1 dot.

T: What do you think you might see when you turn over the next card?

S: 2 dots.

T: Let's check your prediction. Turn over your 2. Were you correct?

S: Yes. There is another dot.

T: Now, turn over your 3, 4, and 5. What do you notice?

S: We see the right number of dots in a row on each card.

T: It's just like our Math Way of counting on our fingers, isn't it? Let's do that. (Quickly complete finger count with students.) What would six look like on our fingers?

S: 5 fingers and then 1 more.

T: I wonder what will be on the back of the 6 card?

S: We will have a row of 5 dots and then 1 more, just like with our fingers.

T: Let's check! Turn over your 6 card. Were you right? (Discuss.) What do you think you will see on the back of the 7? (Continue to lead discussion in this way until all cards have been turned over.)

T: Let's play another game with our cards. Make sure that your cards are still in order in a row with all the 5-group dot sides facing up. I will show you how to play: Hold up your dot for 1. Echo me: I have 1. **One more** is 2.

S: I have 1. One more is 2.

T: Now, put down the 1, and hold up your dots for 2. Echo me: I have 2. One more is 3. (Echo.) Then, you will put down your 2. We will continue with the rest of our cards. Do you understand? Are you ready?

T: (Work through the sequence to 10 rapidly and rhythmically with students. Repeat several times.)

T: We have time for one last game. Choose a partner. One of you will put your cards in front of you with the numerals facing up; the other will put his cards by yours with the dots facing up. Take turns choosing a numeral card and then quickly finding the dot card that has *1 more than* your numeral card. You may play until I say game time is over, and then you may put your cards away. (Demonstrate if necessary. Circulate to check for understanding.)

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> In order to encourage all to participate in echoing the teacher and in order to assess who is able to follow, have students take turns by asking the boys to echo it alone and then the girls or by asking only a small group of students to echo the teacher. This allows weaker students to be heard because they are not being drowned out by the sound of the whole group.

Problem Set (7 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to the class. Students color and count the dots, and then write how many. Then, they draw the same number of dots below the box. Show students the 4 dots that are modeled.

Students count the balloons and basketballs. They draw 1 more, count the balloons and basketballs, and write how many.

Note: In the homework, when students draw numbers 6–10 in 5-group formation, they might build the second 5-group from the top down. It is preferred that the second 5 grow from the bottom up, but there is nothing wrong with this, just as there is nothing wrong with showing fingers in ways other than the Math Way. Explain to students the reasoning: Usually, things grow up. The number of dots is growing, so when drawing the number going up, starting from the bottom is more common.

Student Debrief (8 minutes)

Lesson Objective: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How many balloons did you count before drawing **1 more**? What did you notice when you drew 1 more?
- How many basketballs did you count before drawing 1 more? What did you notice when you drew 1 more?

Lesson 29: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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- Have students discuss how they counted their dots: Did you count each one? Observe strategies students are using to count.
- Did you notice anything about the dot cards that helped you to count?
- Would you rather show a number by using the numeral or by showing the dots? Why?
- Which would you rather use if your number were really, really big?
- Do you think there is always a number that is 1 more than the number you are saying?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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Name _____   Date _____

Count the dots. Write how many in the circle. Draw the same number of dots below the circle, but going up and down instead of across. The number 4 has been done for you.
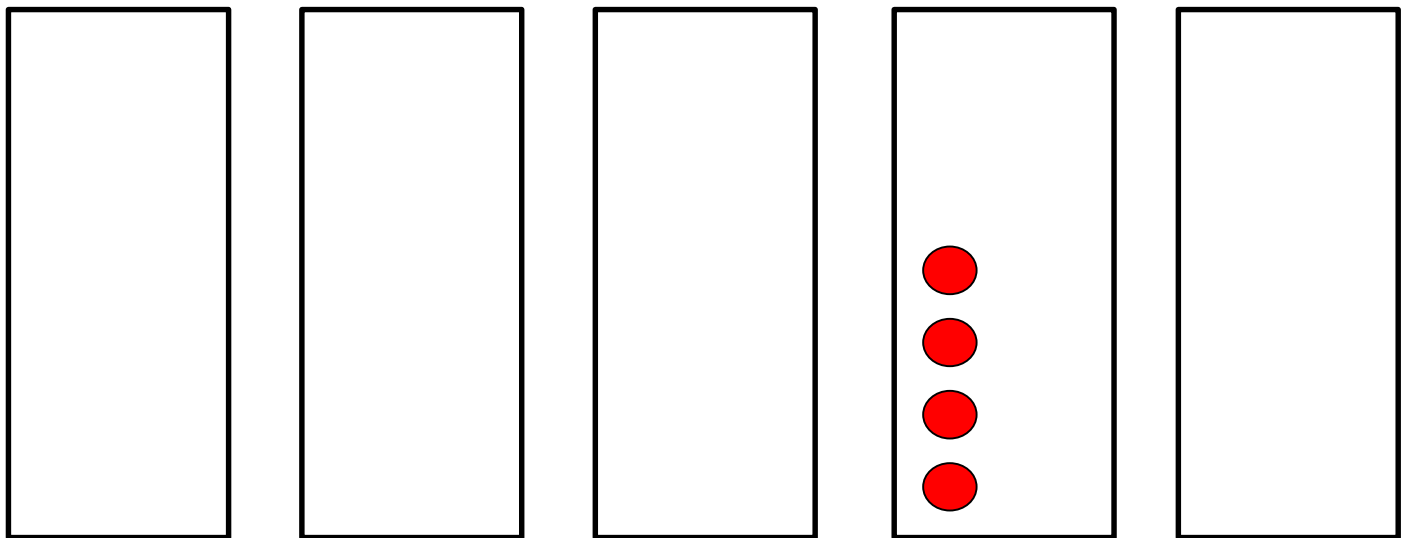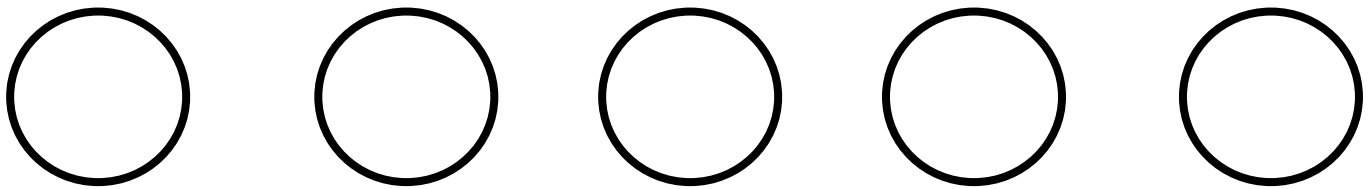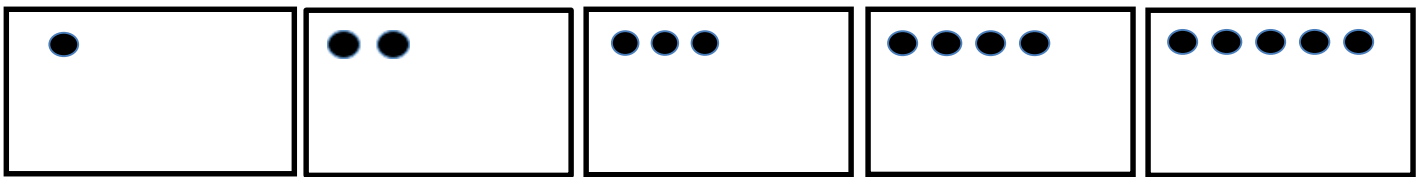
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Count the balloons. Draw 1 more balloon. Count and write how many balloons.

Count the basketballs. Draw 1 more basketball. Count and write how many basketballs.

Count the balloons. Draw 1 more balloon. Count and write how many balloons.

Count the basketballs. Draw 1 more basketball. Count and write how many basketballs.

Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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Name _____   Date _____

Fill in the missing numbers.

1	2			5

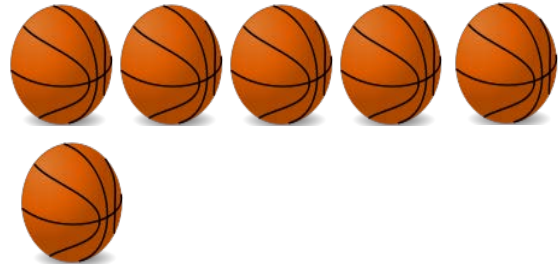| 6		8	9	

Name _____   Date _____

Count the dots. Write how many in the circle. Draw the same number of dots below the circle, but going up and down instead of across. The number 6 has been done for you.

Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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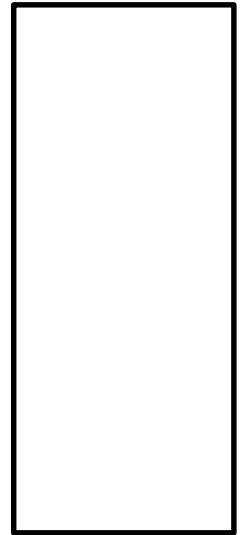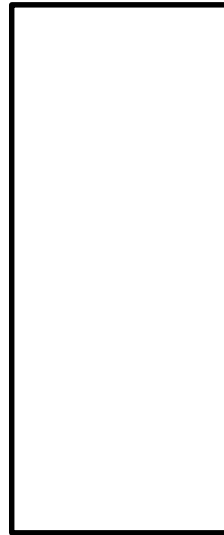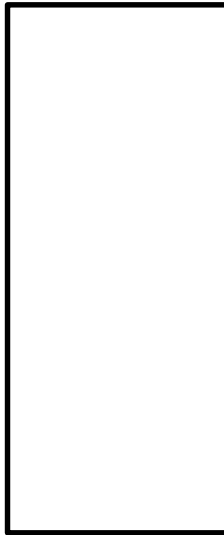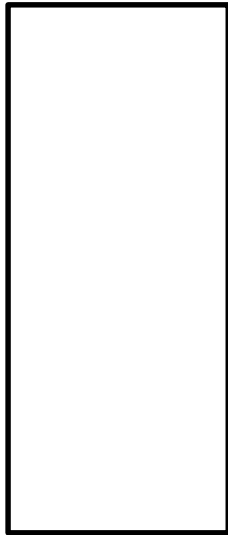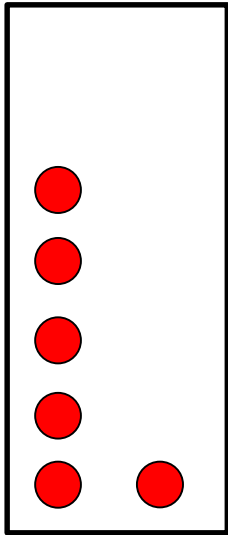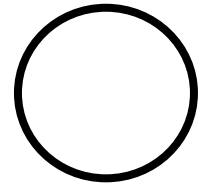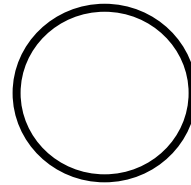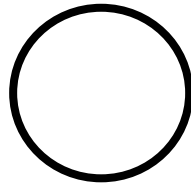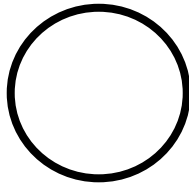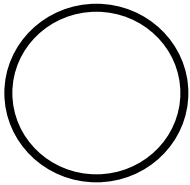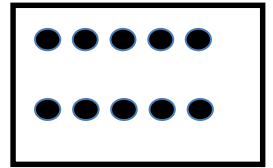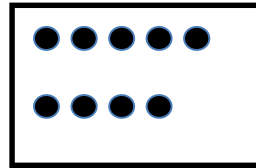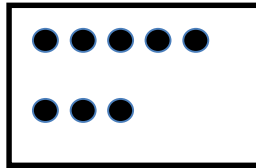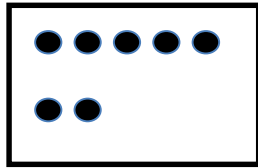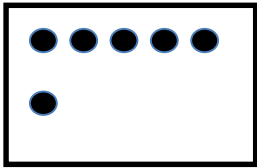
Make your own 5-group cards! Cut the cards out on the dotted lines. On one side, write the numbers from 1 to 10. On the other side, show the 5-group dot picture that goes with the number.

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Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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piggy bank mat

Lesson 29:   Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

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Lesson 30

Objective: Make math stairs from 1 to 10 in cooperative groups.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)

   Total Time   **(50 minutes)**
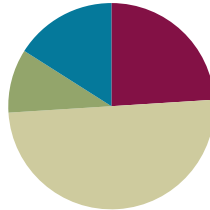
Fluency Practice (12 minutes)

▪ Sunrise/Sunset Counting to 10 **K.CC.2**   (4 minutes)
▪ Tell the Missing Number **K.CC.2**   (5 minutes)
▪ Show Me 1 More **K.CC.4c**   (3 minutes)

Sunrise/Sunset Counting to 10 (4 minutes)

Conduct the activity as outlined in Lesson 7, but instruct students to reach 5 as the midpoint and 10 at the highest position. Some modeling may be required initially.

Tell the Missing Number (5 minutes)

Materials: (S) 5-group cards (Lesson 7 Template 2)

Partners work together to put the numeral cards in order. Partner A closes her eyes. Partner B removes one of the cards, and then tells Partner A to open her eyes. Partner A tells which numeral card is missing. Switch roles and play again.

Variation: Remove two or three cards; determine the missing number in a short counting sequence. Continue with the following suggested sequence: 4, 5, 6, and 7.

Show Me 1 More (3 minutes)

Materials: (S) Bag of red and white beans, left hand mat (Lesson 1 Fluency Template)

   T: Show me 3 beans.
   S: (Place a red bean on the left pinky, left ring finger, and left middle finger to show 3 beans.)
   T: Now, show me 1 more.
   S: (Place a red bean on the left index finger, for a total of 4.)

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Lesson 30:   Make math stairs from 1 to 10 in cooperative groups.

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T: How many beans are on your mat now?

S: 4.

Note: Stay within a predictable pattern until students are comfortable with this exercise, and then skip around. Carefully observe to see which students must recount all of the beans in order to tell the number that is 1 more.

Application Problem (5 minutes)

There are 4 flowers in your vase. Your friend brings you 1 more flower to put in your vase. Draw your vase with all the flowers. Write the number.

Note: This problem anticipates the *1 more* pattern of today's lesson.

Concept Development (25 minutes)

Materials: (T/S) Bears (Template) (S) Bag of 30 loose red linking cubes, bag of 25 loose blue linking cubes per pair

Draw a pictorial growth chart similar to the following. Print the template to use in the activity on the board. Affix them to the board with tape.

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Lesson 30: Make math stairs from 1 to 10 in cooperative groups.

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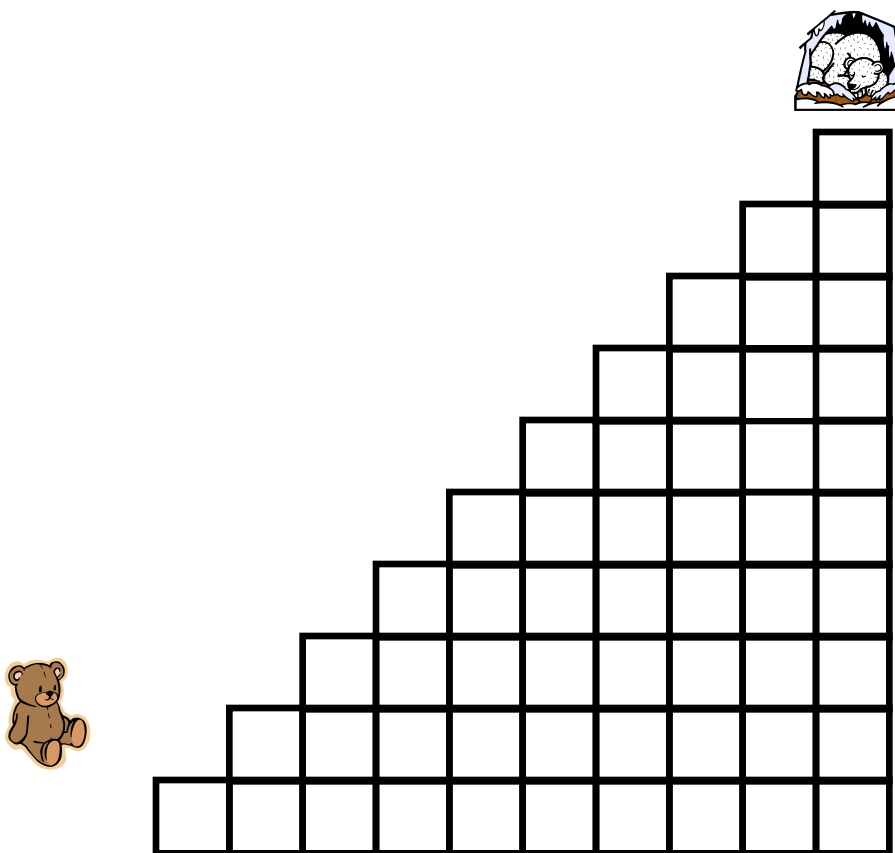
T: Baby bear is tired, and he wants to go home to his mother in his den! We need to show him the way. How should he go home?

S: He should go up the stairs.

T: Let's help him. Where should he go first?

S: To the first stair.

T: (Move the baby bear to the top of the first step.) What should we call this step?

S: 1.

T: (Label the first step.) Where should he go next?

S: To the next step. → To the higher stair. → To the 2. → To the stair with two squares.

T: 1. One more is 2. (Move the bear, and label the next step.) Now, where should he go?

S: 3.

T: Move him with me. 2. One more is 3. Repeat.

S: 2. One more is 3.

T: (Move the bear, and label the step 3. Continue until the bear has been reunited with his mother on step 10.)

T: Great job! Let's count our steps again the *1 more* way.

S: 1. One more is 2. 2. One more is 3. 3. (Continue through 10.)

T: Now, let's make some stairs like this with our cubes. You can work with your partner to help each other. Find your bag of red linking cubes, please.

T: Take a red cube, and put it at the top of your desk. What is the name of this stair?

S: 1.

T: Make the next stair. Take out another red linking cube. Add 1 more. Repeat after me: 1. One more is 2. 2.

S: 1. One more is 2. 2.

T: Put the stair for 2 next to the one on your desk. Let's make the next one. (Continue making the stairs 1–5. Circulate to ensure understanding.)

T: Great job! Can you make another set of red stairs just like that? Let's see how fast you can do it! I will time you.

S: (Create another set of stairs 1–5, and align on desk.)

T: Compare your stairs to the ones on the board. Will your stairs work to get the baby bear home?

S: They are not tall enough. → We don't have any more red cubes. → We need some of our stairs to be higher. → We need to use some of the blue cubes.

T: What should we do? (Guide students to make towers of 5 from the blue cubes. They can put one set of the red stairs on the 5 towers to complete the sequence to 10. Demonstrate and assist as necessary.)

T: Put all of your stairs in order on your desk. Now, could the baby bear get home? Count with me. 1. One more is 2. 2. One more is 3. 3. (Count and demonstrate on the board while students count on their stairways.)

S: (Repeat counting language.) Yes, he is home now!

T: You will need your stairs for tomorrow, so put them away carefully in your bags.

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Lesson 30:   Make math stairs from 1 to 10 in cooperative groups.

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Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Have students use a red crayon to color the white cubes of each step. When the students draw the cubes on the second sheet of the Problem Set, remind them that stairs have to rise. Therefore, a preceding step cannot be taller than the next one. Some children still struggle to draw a step one higher than the preceding step.

Student Debrief (8 minutes)

Lesson Objective: Make math stairs from 1 to 10 in cooperative groups.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at the first staircase. What do you notice about the red steps? How many numbers have a group of 5 red steps? Which numbers are they?
- Do the numbers 1, 2, 3, and 4 have a 5-group of red steps? Why or why not?
- Look at the next staircase. What is similar or different about the red steps? What do you notice about the gray step at the top of the steps?
- Look at the steps you drew. With your words, say to your friend what happened each time you drew another step.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 30:   Make math stairs from 1 to 10 in cooperative groups.

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Name _____   Date _____

Count and color the white squares red. Count all the cubes in each step. Write the missing numbers below each step.

1   2   3   ☐   5   6   ☐   8   9   ☐

☐   2   3   4   5   ☐   7   8   ☐   10
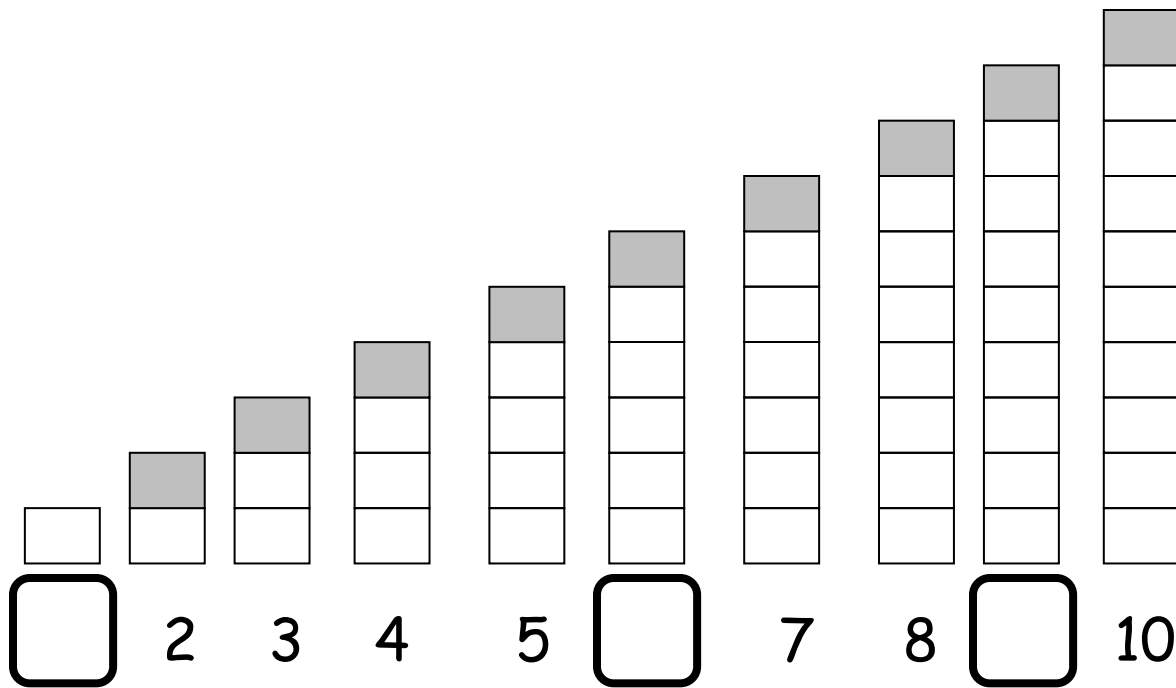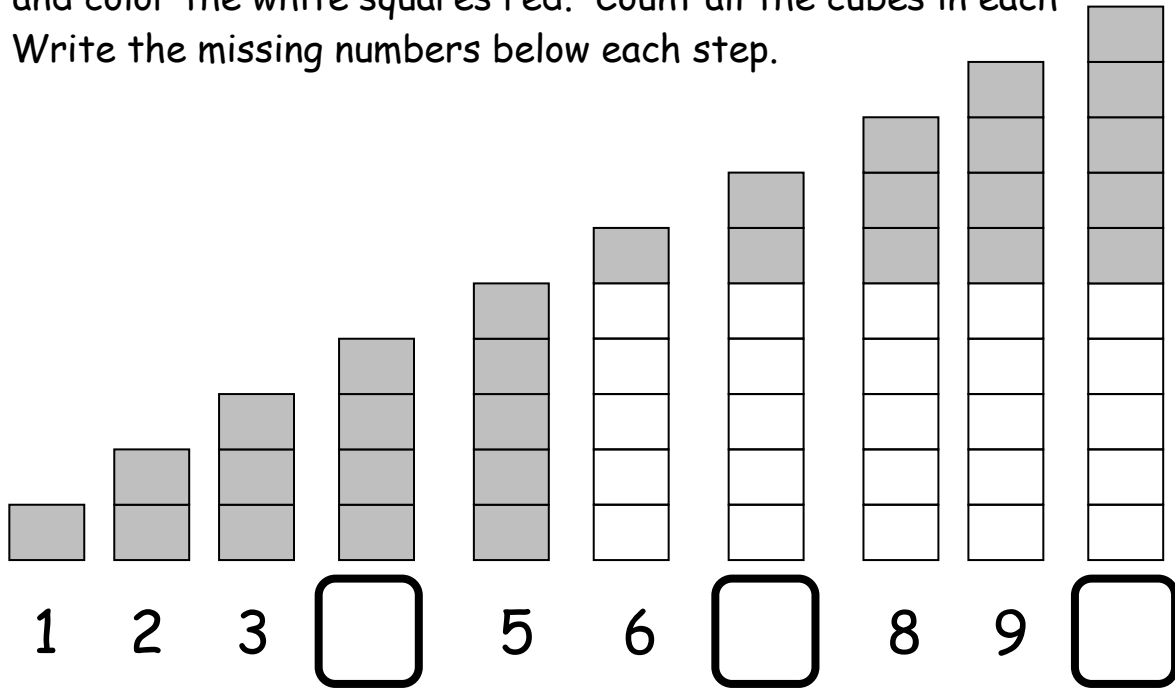
Name _____   Date _____

Draw a stair that shows 1 more, and write the new number in the box.

Name _____   Date _____

Draw the missing stairs. Write the numbers below each step.
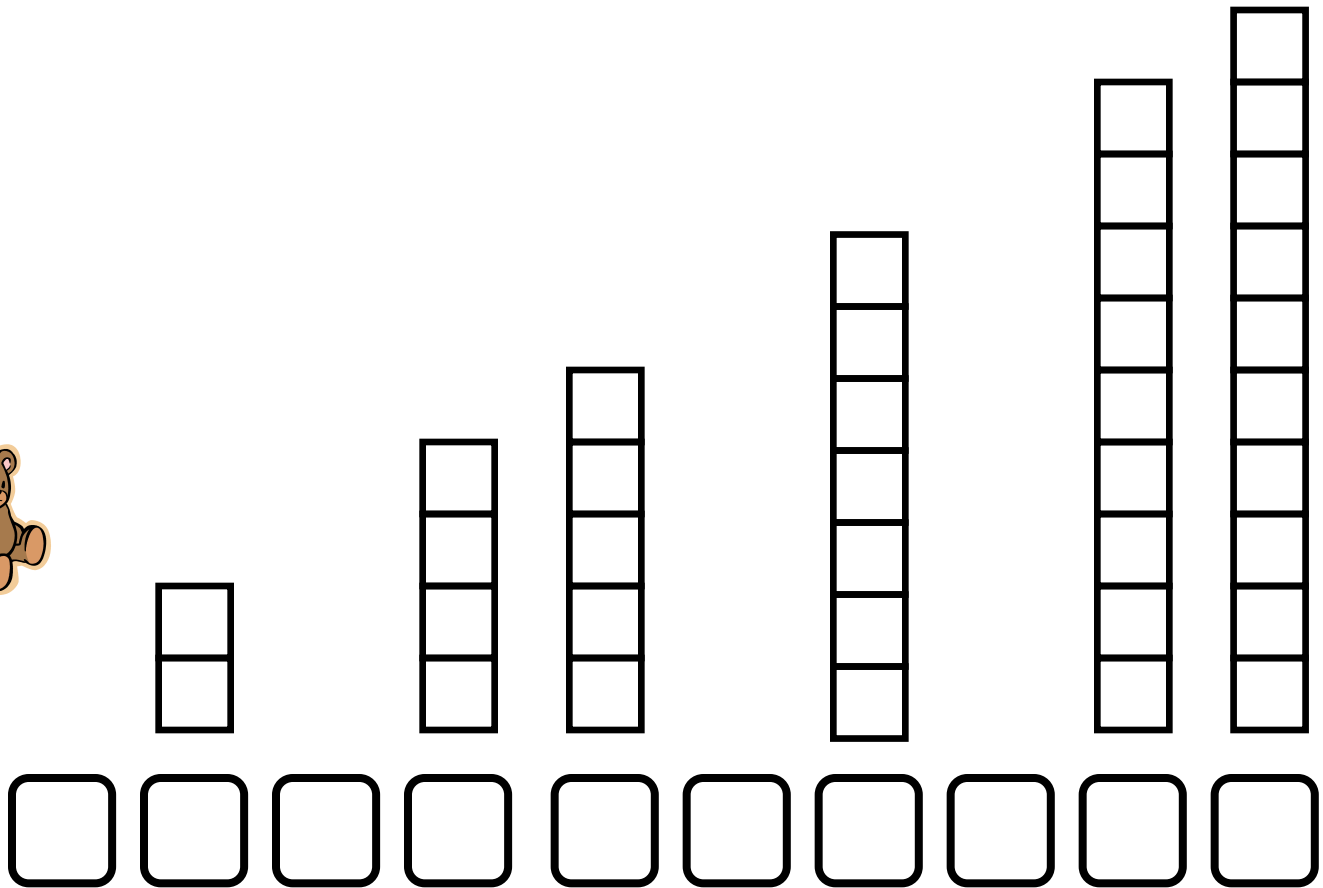
Ask someone to help you write about what you think baby bear will do now that you have helped him to get home. Use the back of this paper.

Draw 1 more cube on each stair so the cubes match the number. Say as you draw, "1. One more is two. 2. One more is three."

1 2 3 4 5 6 7 8 9 10

bears

Lesson 30:   Make math stairs from 1 to 10 in cooperative groups.

305
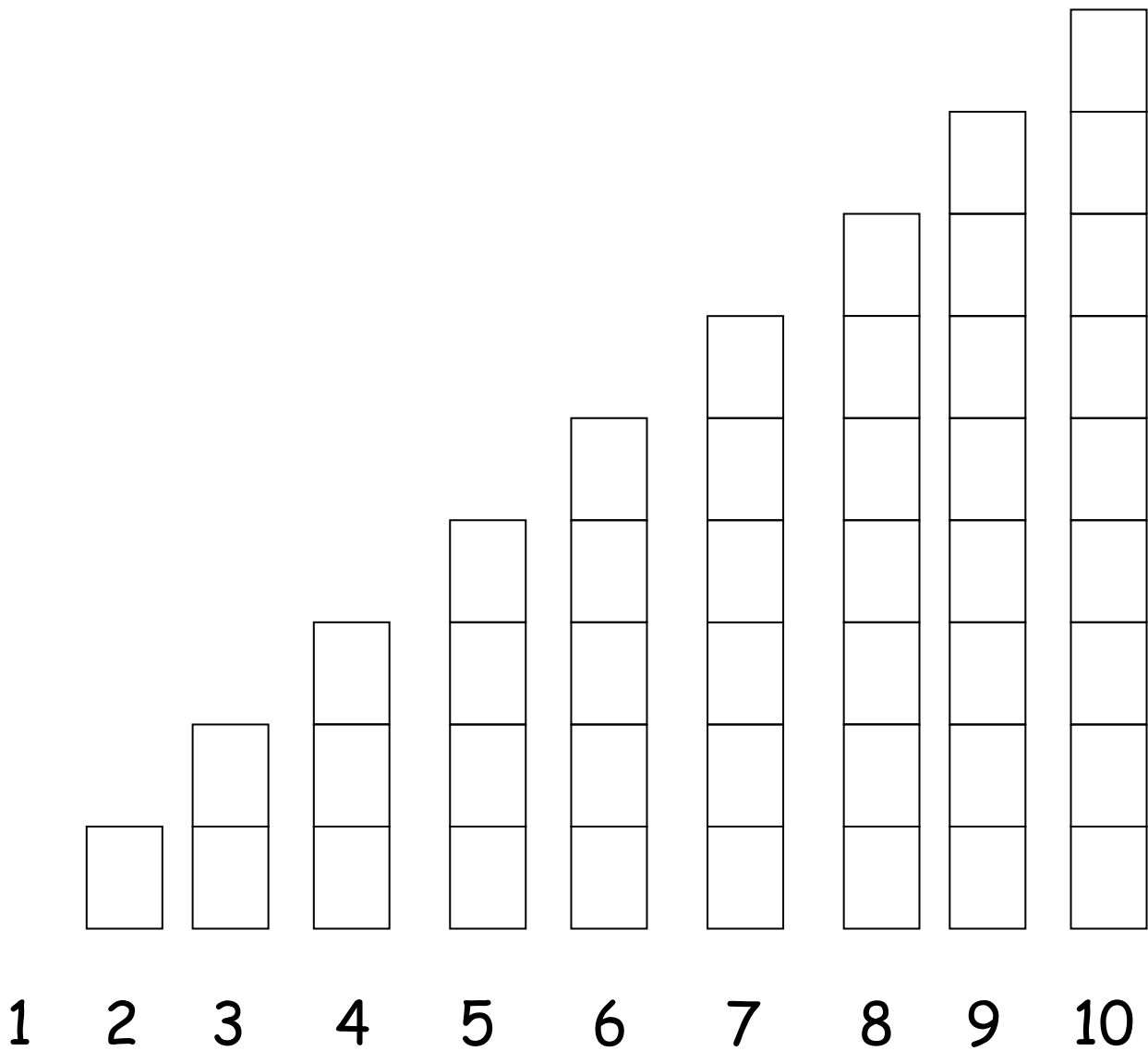
Lesson 31

Objective: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

Suggested Lesson Structure

■ Fluency Practice   (10 minutes)
■ Application Problem   (5 minutes)
■ Concept Development (27 minutes)
■ Student Debrief   (8 minutes)
    Total Time   **(50 minutes)**

Fluency Practice (10 minutes)

▪ Beep Number **K.CC.4a**   (2 minutes)
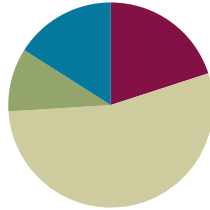▪ Show Me 1 More **K.CC.4c**   (3 minutes)
▪ Roll and Write 1 More **K.CC.4c** (5 minutes)

Beep Number (2 minutes)

This activity is repeated from Lesson 29 to continue the focus on sequences beyond 5. Remember that the sample sequence goes from simple to complex.

    7, 8, beep!
    7, beep, 9.
    Beep, 8, 9.

Variation: Extend the sequences to four numbers, for example 7, 8, beep, 10.

Show Me 1 More (3 minutes)

Show me 1 more with your fingers the Math Way:

    T: Show me 3 fingers, the Math Way.
    S: (Hold up the left pinky, left ring finger, and the left middle finger to show 3 fingers the Math Way.)
    T: Now, show me 1 more.
    S: (Hold up the left pinky, left ring finger, the left middle finger, and the left index finger to show 4 fingers the Math Way.)
    T: How many fingers are you showing me now?
    S: 4.

Avoid showing the finger combinations. The Math Way soon becomes an immediately recognizable configuration that decreases the need for students to recount each time. Allow time to recount for students who still need to do so.

Lesson 31:   Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Roll and Write 1 More (5 minutes)

Materials: (S) Die, paper and pencil or personal white board

Partner A rolls the die.   Both partners count the dots.   Partner B determines the number that is 1 more and writes the numeral.   Partner A verifies that the number is 1 more.   Switch roles, and play again.

Application Problem (5 minutes)

Caleb had a plate of 7 oranges to share with his friends.   Draw the oranges.   Draw 1 more orange in case someone is extra hungry.   How many oranges are on the plate?   Write the number.   Tell your friend: There were 7 oranges.   One more is (___).

Note: In this and other problems in this topic, remember to emphasize with students the language pattern of (___). *One more* is (___).   They use that pattern again in this lesson.   A further reminder to practice restraint: In Module 3, we introduce the complexity of 4 is *1 less than* 5.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Challenge advanced students by asking them to draw more problem situations. For example, "Draw 8 oranges and 2 more, or draw 9 oranges and 1 more to share."

Concept Development (27 minutes)

Materials: (S) Large construction paper work mat (21" x 24") per 2 students inscribed as shown below (circles should have a diameter of at least 4"), set of linking cube stairs from yesterday, red and blue crayon

T: Put your number stairs on your desk in front of you.   Make sure they are in order!   Let's check.   Point to the correct stair, and echo me: 1. 1 more is 2. 2. 1 more is 3. 3. 1 more is 4.

S: 1. 1 more is 2. 2. 1 more is 3. 3. 1 more is 4. (Continue through all the stairs.)

T: We are going to make some bracelets today.   Take your first stair, and put it inside the first circle on your work mat. (Demonstrate.) How many cubes are inside your first circle?

S: 1.

T: We have 1 cube. *One more* is (___). (Wait for answer.) 2. Please show me your stair for 2. Take the cubes apart, and put them in the second circle. (Demonstrate.) How many?

S: 2.

T: We have 2 cubes. *One more* is (_). (Wait for answer.) 3. (Continue with this sequence until the cubes of each stair are inside the students' circle on the work mat.   Circulate to ensure accuracy.)
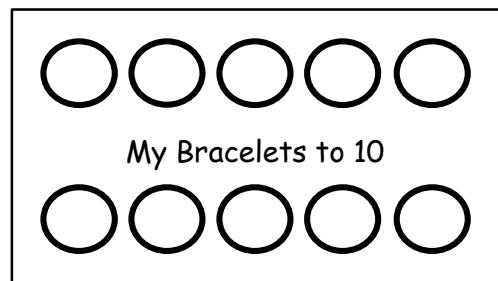
My Bracelets to 10

T: Let's count the cubes in our circles. Do we have to count every one of the cubes to know how many there are in each circle?

S: No. We put them in order, so we can just count circles. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

T: Did the number change just because we broke apart our tower? (Discuss briefly.)

T: Pretend we are making bracelets now. Move the cubes to the edge of the circle so that they are like beads on a bracelet. What do you notice?

MP.7

S: The beads from bigger towers can make circles. → Just like our bracelets. → Some of the beads are red, and some are blue.

T: On the bracelets we made before, were the colors all mixed up, or were our beads in groups of colors?

S: We had red beads and then white beads. → They were not mixed up. → We should make sure that the blue cubes are on one side of the circle, and the red ones are on the other side.

T: Good idea! Let's do that. (Circulate to check for understanding.) What do you notice?

S: All of them have red cubes. → The bottom bracelets all have 5 blue cubes. (Guide students to see that the colors of the cubes can help them to identify the numbers.)

T: These are great. I wish you could put them on the bulletin board. Maybe you could. If we drew beads instead of using the cubes, we could put them on our bulletin board. Take the cube off the first circle, and draw a blue bead there instead. (Demonstrate.) What would we do on the next circle?

S: Take off each cube, and draw a blue bead instead. → When we get to the bigger numbers, we can use our red crayons, too.

T: Great ideas! Go ahead and carefully replace each of the cubes with a crayon bead. (Circulate to ensure accuracy.)

T: Now, we need to name our bracelets. Let's call our first bracelet 1. What should we call the next one?

S: 2.

T: Yes, we can name each one after its number of beads. Choose a crayon, and label all of your bracelets. Now, you can take them home and show them to your family!

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Encourage English language learners to respond to the question: "What would we do on the next circle?" This allows students to show their thinking rather than verbalize it.

Lesson 31: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Guide students to first color the empty circles orange and count. Then, count the grey circles, and write how many in the box. On the second page, count and color the white circles blue. Draw 1 more, and count all the circles. Write how many.

Student Debrief (8 minutes)

Lesson Objective: Arrange, analyze, and draw *1 more* up to 10 in configurations other than towers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What do you notice about the first three bracelets? (Lead discussion so students see that all of the orange circles are 5.) How can this help with counting?
- How did you count the scattered configurations?
- What do you notice about the circles you colored orange? How did this help you count?
- What did you notice on the second page of the Problem Set when you added 1 more?
- Tell your partner how many you counted in each problem. What happened when you added 1 more?
- Why was it so easy to count the cubes on our bracelets? How did the colors of the cubes help us? (Lead them to mention number conservation from linear to other configurations. Help them to notice that identifying the groups of 5 within the sets was very helpful in counting.)

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Lesson 31: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 31:   Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Name _____   Date _____

Color the empty circles orange, and count. Count the gray circles, and write how many gray circles in the box.

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Lesson 31: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Count the white circles, and color them blue. Draw 1 more, and count all the circles. Write how many.

Lesson 31:   Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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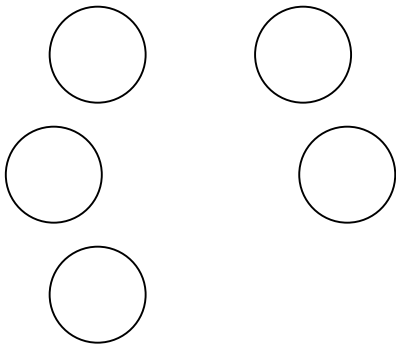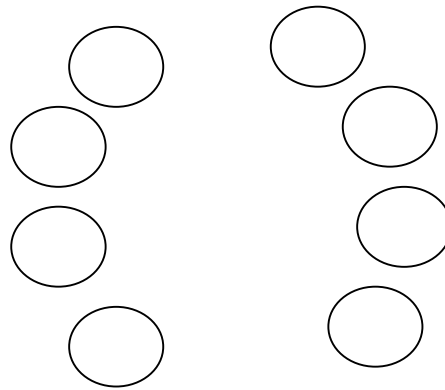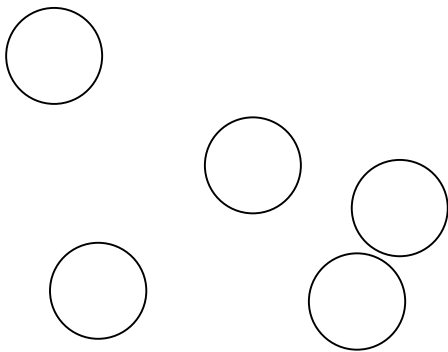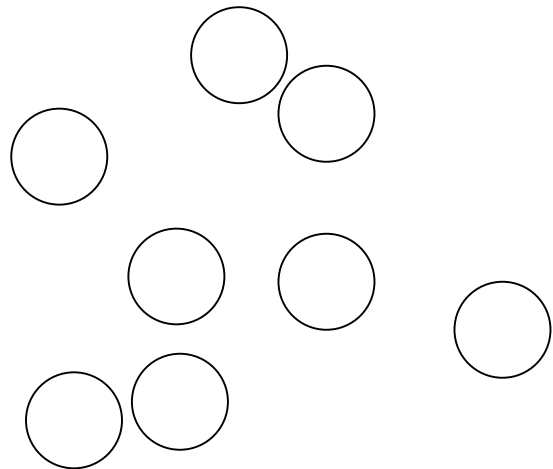
Name _____   Date _____

Color the stars blue. Draw 1 more star. Color it blue, and write how many.
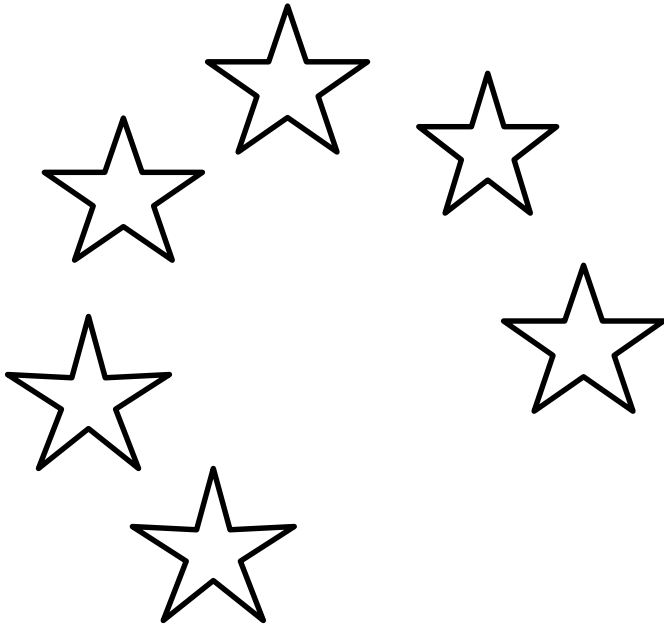
Color the happy faces red. Draw 1 more happy face. Color it red, and write how many.

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Lesson 31:   Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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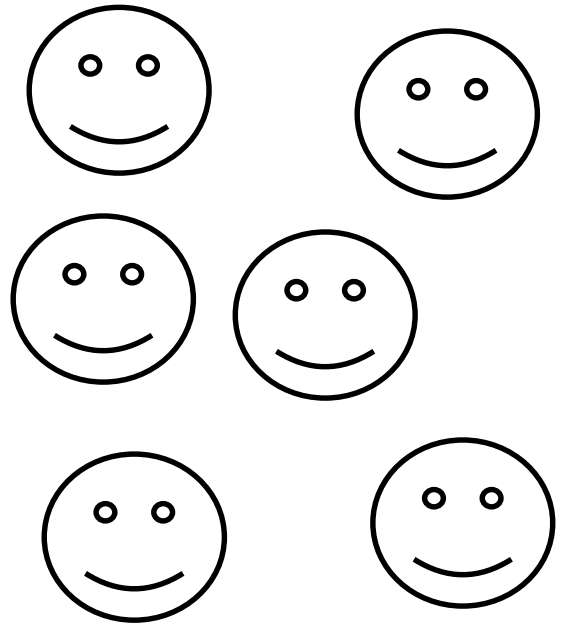
Name _____ Date _____

Draw one more square. Color all the squares, and write how many.
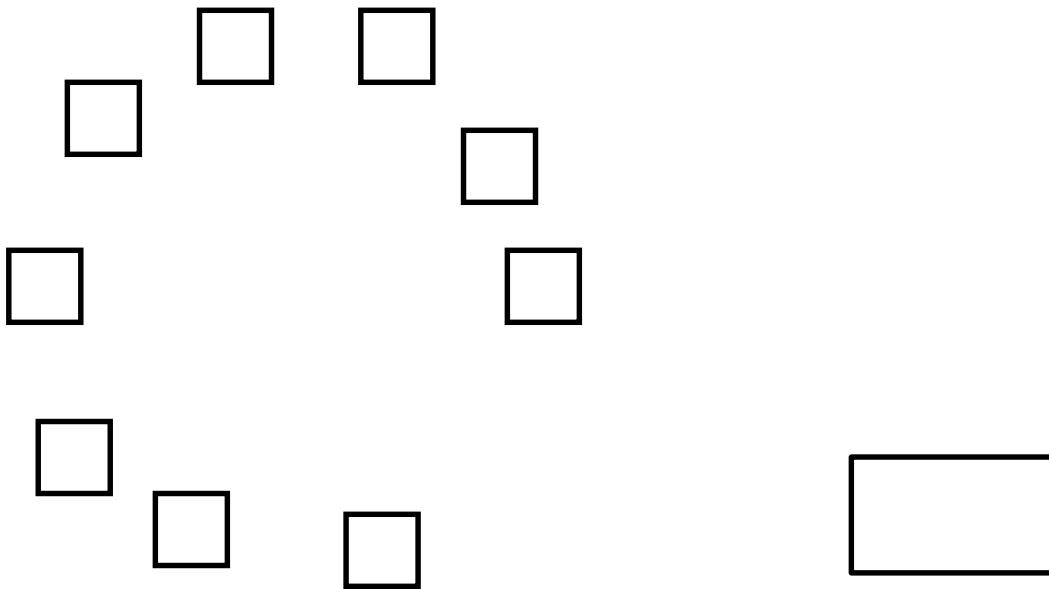
Draw one more cloud. Color all the clouds, and write how many.

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Lesson 31: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

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Lesson 32

Objective: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (8 minutes)
- **Total Time**   **(50 minutes)**

Fluency Practice (12 minutes)

- ▪ Green Light, Red Light **K.CC.2**   (2 minutes)
- ▪ Guess the Hidden Number **K.CC.2**   (5 minutes)
- ▪ Draw 1 More and Write How Many **K.CC.4c**   (5 minutes)

Green Light, Red Light (2 minutes)

Conduct the activity as outlined in Lesson 5, but now include sequences within 10.
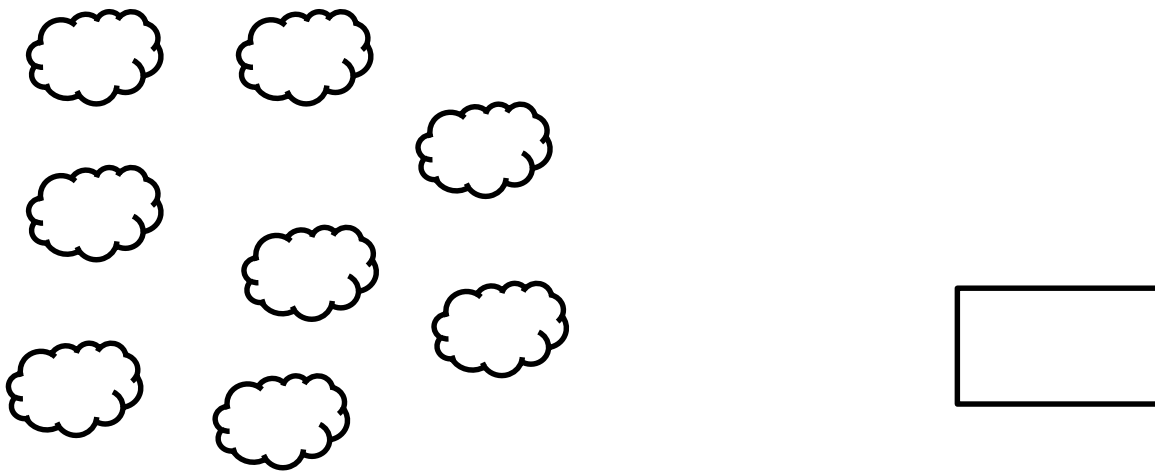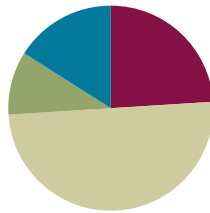
Guess the Hidden Number (5 minutes)

Conduct the activity as outlined in Lesson 29, but now have the students fold the number path to reveal a short sequence of numbers (e.g., 4, 5, 6, 7).

Draw 1 More, and Write How Many (5 minutes)

Materials: (S) Draw 1 More (Fluency Template)

After giving clear instructions and completing the first few problems together, allow students time to work independently. Encourage them to do as many problems as they can within a given timeframe.

Optional: Go over the answers, and direct students to energetically shout "Yes!" for each correct answer.

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Lesson 32:   Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

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Application Problem (5 minutes)

Draw 6 shirts on the board, as pictured below:
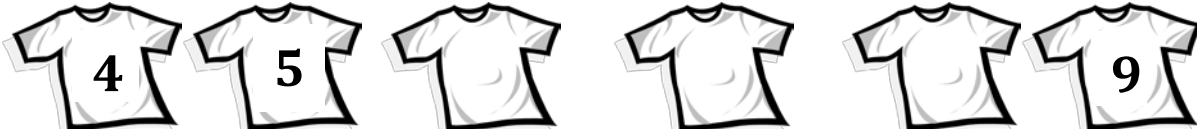
There were 6 friends on Katharine's team. Their uniforms got mixed up in the laundry, and some of the numbers washed off. Quickly draw the shirts and the numbers on the shirts to help the team!

Note: This problem is a pictorial anticipation of today's lesson of sequencing consecutive subsets of 10.

Concept Development (25 minutes)

Materials: (T) Set of linking cube number stairs 1–10 (S) 10 index cards, crayons

- T: Look at my number stairs. Help me count the way we did yesterday to make sure I have them in the right order. Count with me.
- S: This is 1. One more is 2. One more is 3. One more is 4… (Continue through to the end.)
- T: We are going to play a game! I am going to hide one of my towers. Ready? Close your eyes. (Hide the 5 tower.) You may open them. Look, think, and raise your hand. (When most hands are raised, snap your fingers to signal students to answer chorally.) Which tower is missing?
- S: 5.
- T: (Replace the tower, and repeat several times with other towers.) You are good detectives! This time, I will hide two of my towers. Close your eyes! (Hide 4 and 5. Repeat the game several times with subsets of two consecutive towers.)
- T: This time, I will hide three towers. (Repeat the game several more times, each time hiding three consecutive towers.)
- T: We are going to make some tower cards so that you and your partner can play this game yourselves. I will give you 10 index cards. On each card, I want you to draw one of these number towers. Write the number on the back, like this. (Demonstrate.) Be sure that you make exactly one card for each of the number stairs.
- S: (Make flashcards for the 1–10 towers.)
- T: Put your cards in a pile. Now, arrange them in a row on your desk with the tower side up. Start with your 1 tower. Each card should be 1 more. What should they show?
- S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. (Arrange cards.)
- T: (Check for completion and accuracy.)

Lesson 32:   Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

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T: Work with a partner. While your partner closes his eyes, hide two cards from your row. You will choose a card and then hide it behind your back with the card that is 1 more. Ask your partner to open his eyes and look at the cards left in your row. When he is ready to tell which cards you must be hiding, he has to find those cards in his row to show you. You can then compare your cards to see if he was right. Then, it will be your turn!

S: (Play several rounds of the game.)

T: Turn your cards over so the number side is showing, and play again.

S: (Play several rounds of the game.)

T: This time, choose three cards from your row, and hide them behind your back. Remember, you must choose three cards next to each other! (Play several more rounds of the game, and then turn the cards all over to play with the other side again.) Put your cards away now, and get ready for your Problem Set.

Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Support students who struggle with drawing the consecutive steps by drawing the first step of each stair. This gives them a starting point and help them with spacing and position.

When drawing the objects at the end of the Problem Set, guide students to draw any objects they choose. Remind them that they can draw their objects in linear, array, 5-group, circular, or scattered formation.

Student Debrief (8 minutes)

Lesson Objective: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion .

- When you drew the missing steps, did you count all the numbers before the first missing step? Is there a way to know how many steps are in the missing stair without counting from 1? How?
- Show your neighbor the dots and numbers you drew. Tell your friend if you wrote the numbers first or drew the dots first. Tell them why you did so.
- Could you have drawn your objects a different way? If you drew the objects a different way, would you have to change the number?
- What strategy did you use to put your stairs in order?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____   Date _____

Draw and write the number of the missing steps.

1   2   3   4   5   6   ☐   ☐   ☐   10

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Lesson 32: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

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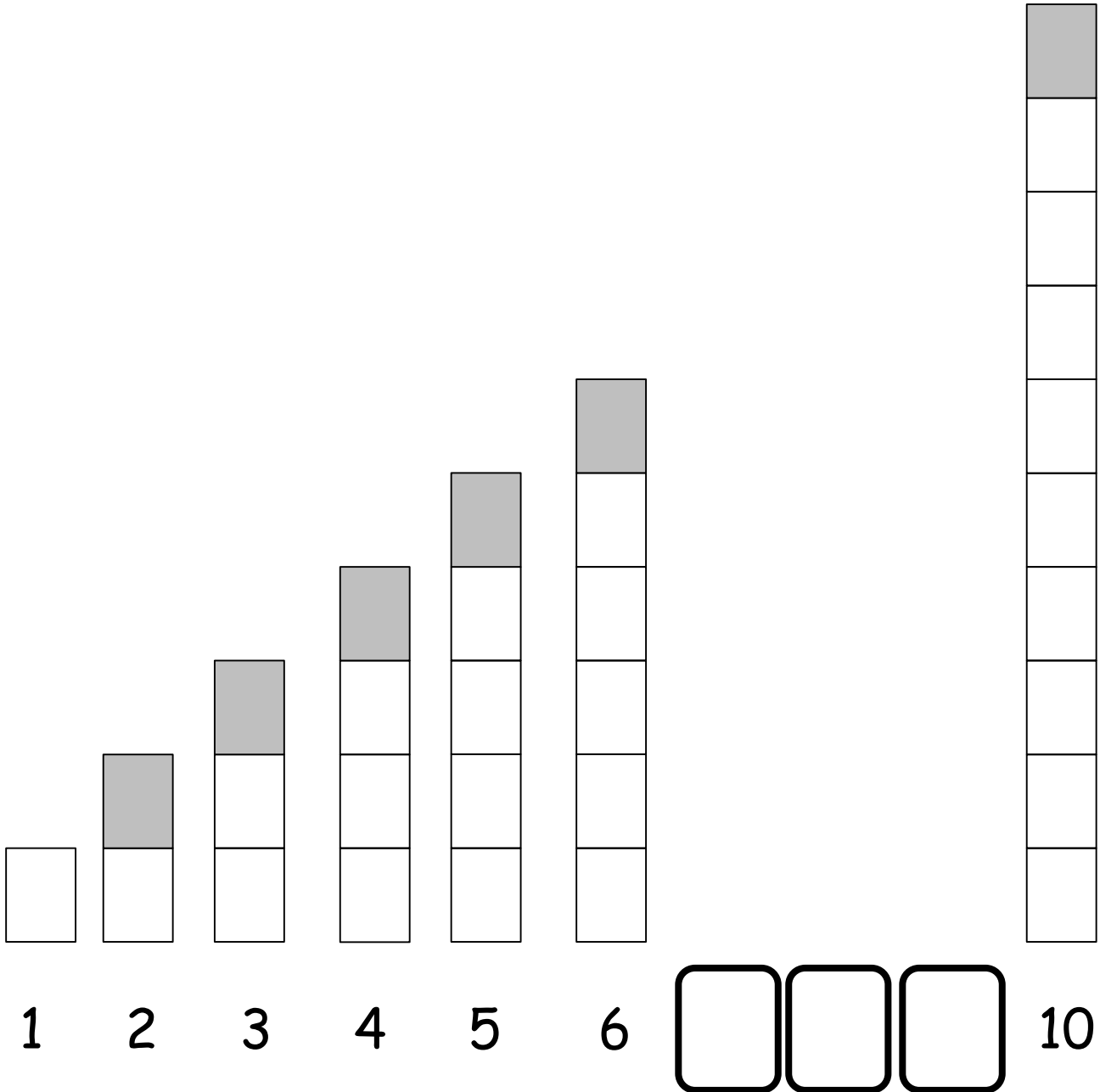
Write the missing number. Draw objects to show the numbers.

△ △ △ △ ▢	5	6
△ △ △ △ △ △ ▢	7	8
△△△△ △△△△ ▢	9	10

Name _____ Date _____

Write the missing numbers.

3, _____, _____, 6, 7, _____, _____, _____

Draw 1 more apple each time.

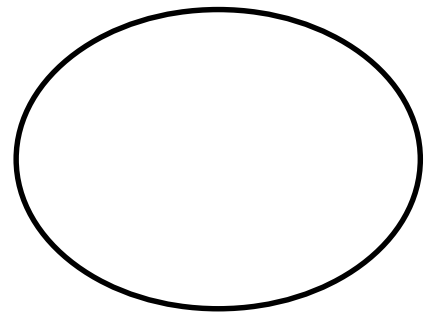**Lesson 32:** Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

321
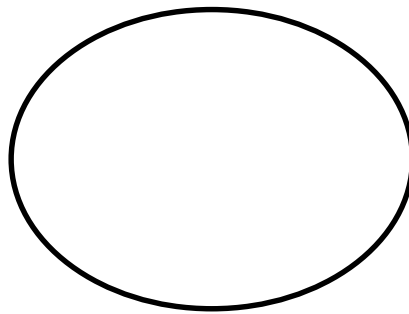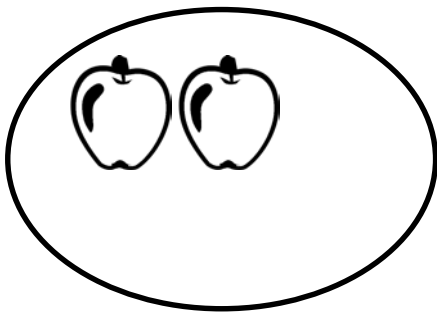
Name _____   Date _____

Write the missing numbers.

___, 2, ___, ___, ___, 6, 7, ___, ___, 10

Draw X's or O's to show 1 more.

			XXXX X
XX	**X**		

OOOO O	**OOO**	OOOO OOO	O O O O
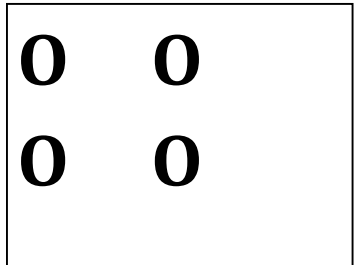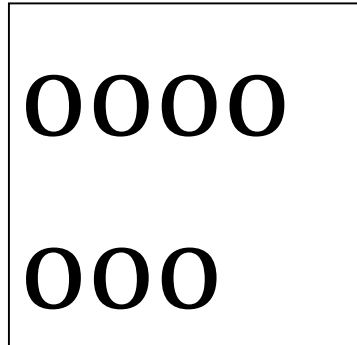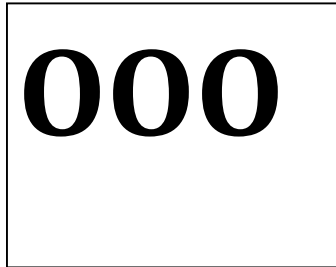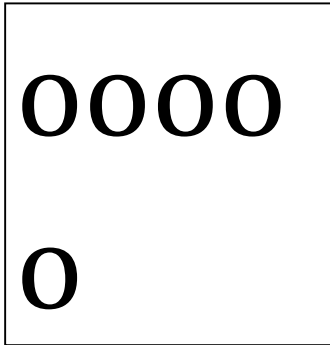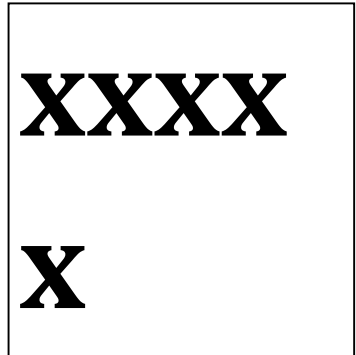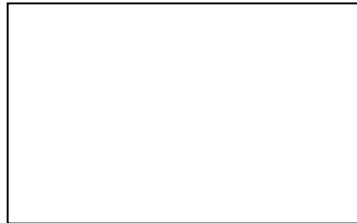
Tell someone a story about "1 more…and then 1 more." Draw a picture about your story.

Lesson 32:   Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

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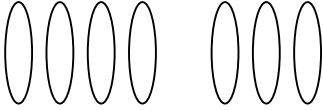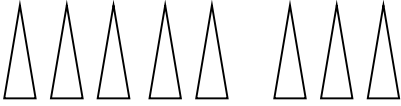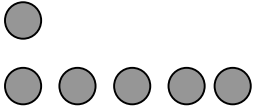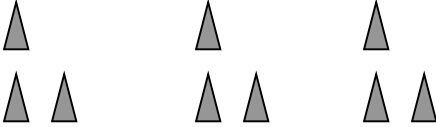
Name _____ Date _____

Draw 1 more, and write how many in the box.

How many?			How many?
▲		■ ■ ■ ■ ■ ■ ■	
▢ ▢ ▢		0000 000	
⬭ ⬭ ⬭ ⬭		▲ ▲ ▲ ▲ ▲ ▲	
△ △ △ △		▢ ▢ ▢ ▢ ▢ ▢	
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_____

draw 1 more

K **Mathematics Curriculum**

GRADE

Topic H
One Less with Numbers 0–10

K.CC.4abc, K.CC.5

Focus Standard:	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
		c. Understand that each successive number name refers to a quantity that is one larger.
Instructional Days:	5	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

Topic H is a mirror image of Topic G. While students explored *1 more* in Topic H, in Topic G, they explore *1 less*. In Lesson 33, students use their knowledge of relationships between numbers to order quantities of objects on paper (dot cards, picture cards, and shapes) from 10 to 1, and then match 1–10 digit cards to each set of objects in descending order.

Lesson 34 extends this concept by helping students state 1 less than a given number. "Nine triangles is 1 less than 10 circles, 8 squares is 1 less than 9 triangles." Lesson 35 again helps children to kinesthetically internalize the concept of 1 less by building linking cube stairs, but this time, instead of starting at the bottom on the first cube, there is a princess in a tower who walks down the stairs starting at the top 10-cube stair. The children discuss what is happening as the princess walks down each step. From this concrete exercise, students are then asked to arrange, analyze, and draw *1 less* configurations other than the stair or tower format. They might be given a group of objects to count on paper in a scattered or circular formation and then asked to cross out 1 object from the group and count again.

To conclude this module, the students are given a culminating task that calls on them to use what they have learned to complete a series of tasks.

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Topic H: *One Less* with Numbers 0–10

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A Teaching Sequence Toward Mastery of *One Less* with Numbers 0–10

Objective 1: Order quantities from 10 to 1 and match numerals.
(Lesson 33)

Objective 2: Count down from 10 to 1, and state 1 less than a given number.
(Lesson 34)

Objective 3: Arrange number towers in order from 10 to 1, and describe the pattern.
(Lesson 35)

Objective 4: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.
(Lesson 36)

Objective 5: Culminating task
Decide how to classify the objects in your bag into two groups. Count the number of objects in each group. Represent the greater number in various ways. Next, remove the card from your pack that shows the number of objects in the smaller group. Put your remaining cards in order from smallest to greatest. Your friends will have to figure out what card is missing when they visit your station!
(Lesson 37)

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Lesson 33

Objective: Order quantities from 10 to 1, and match numerals.

Suggested Lesson Structure

■ Fluency Practice (12 minutes)
■ Application Problem (5 minutes)
■ Concept Development (25 minutes)
■ Student Debrief (8 minutes)

Total Time **(50 minutes)**
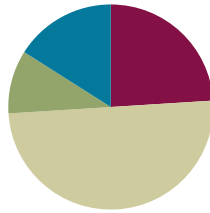
Fluency Practice (12 minutes)

▪ Sunrise/Sunset Counting to 10 **K.CC.2** (4 minutes)
▪ 1, 2, 3, Stand on 10 **K.CC.2** (4 minutes)
▪ Make It Equal **K.CC.6** (4 minutes)

Sunrise/Sunset Counting to 10 (4 minutes)

Conduct the activity as outlined in Lesson 7, but remind students to plan to reach 5 as the midpoint and 10 at the highest position.

1, 2, 3, Stand on 10 (4 minutes)

Conduct the activity as outlined in Lesson 22.

Make It Equal (4 minutes)

Materials: (S) Bag of beans, laminated paper or foam work mat, die

1. The teacher introduces the term *equal* as meaning *the same number*.
2. Both partners roll dice and put that many beans on their mat.
3. Partner A has to make their beans equal to their partner's by taking off or putting on more beans.
4. Partner B counts to verify.
5. Switch roles, and play again.

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Application Problem (5 minutes)

Preparation: Draw a baking tray on the board like the one below:
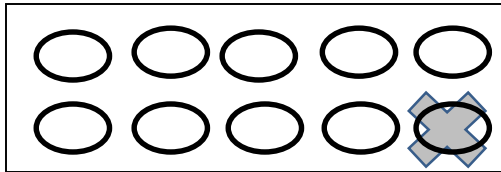
Margaret baked some biscuits for dinner. While they were cooling, her kitten jumped on the table and took one away. Draw the tray to show how many biscuits Margaret can serve for dinner. Don't forget to cross off the one that the kitten took! Write the number.

Note: This problem presents a practical application of *1 less*.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Challenge students who are performing above grade level by extending the Application Problem:
> - Draw another baking tray to show how many biscuits are left if the kitten steals 2 biscuits.
> - Write both the number of the remaining biscuits and the number of biscuits the kitten stole.

Concept Development (25 minutes)

Materials: (T) Large numeral cards 1–10 (Lesson 8 Template) or a number path written on the board
(S) Bag of loose linking cubes (5 blue, 5 red), 5-group dot mat (Lesson 17 Template), 5-group cards (Lesson 7 Template 2)

T: Put a 5-group mat in front of you. Place 1 blue linking cube in each place on the mat. How many blue cubes do you have?

S: 5.

T: Now, put each red linking cube on the mat. What do you notice?

S: We have a row of blue and a row of red. → We have 10 cubes. (Guide students to see that this configuration looks just like the dot representation of 10 on their cards.)

MP.2

T: Find the card that shows how many linking cubes are on your mat. We will begin a row of cards, starting with this 10 card. Put it on your desk so that the dot side is facing up. Now, take the last red cube from your card, and put it back in the bag. What do you see?

S: We still have a row of 5 blue cubes, but now we have 4 red cubes. We have 9 cubes. It looks like our 5-group mat for 9.

T: Find the card that shows how many linking cubes are on your mat. Does it look exactly the same as your 5-group mat?

S: Yes! It's the same.

T: Put it next to the 10 in your card row. (Repeat until there is only 1 cube left on the first 5-group mat.)

T: How many cubes are on your mat?

S: 1.

T: How many cards do you have left?

S: 1.

T: Let's put the last card in our row. Does anyone notice anything about the row of cards?

S: There are more dots on the first ones. → There is only 1 on the last one. → They get smaller!

T: Put the last cube away, and let's look at our cards. Touch each card, and tell how many dots are on it. We will go down the row. (Demonstrate.)

S: 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.

T: Put your cards in a stack. We will play Mix and Fix. Mix up your cards, and then see how quickly you can put them back in a row. Make sure the card with 10 dots is on the left!

S: (Arrange cards. Circulate to ensure accuracy.)

T: I want you to be number detectives. When I point to a number on our number path, I want you to find the dot card that matches. Ready? Hold it up high! (Repeat several times until students are confident matching the numerals to the dot configurations.)

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Help English language learners understand what to do by modeling. Model for students how to be number detectives so that they understand what is being asked of them.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Students count the dots and write how many. Guide students in drawing the same number of dots below the box going up and down. Model the 10 dots for students, or let students model for the class.

Remind students to count the objects, then cross out 1 and count again, writing how many.

Student Debrief (8 minutes)

Lesson Objective: Order quantities from 10 to 1, and match numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

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Lesson 33: Order quantities from 10 to 1, and match numerals.

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Any combination of the questions below may be used to lead the discussion.

- How did you count the dots? Did you count the same way as your partner? Did it help to color the 5-dot groups first?
- Did you notice a pattern as you counted? (Focus on the pattern of *1 less*.)

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 33:   Order quantities from 10 to 1, and match numerals.

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Name _____   Date _____

Count the dots. Write how many in the circle. Draw the same number of dots below the circle, but going up and down instead of across. The number 6 is done for you.
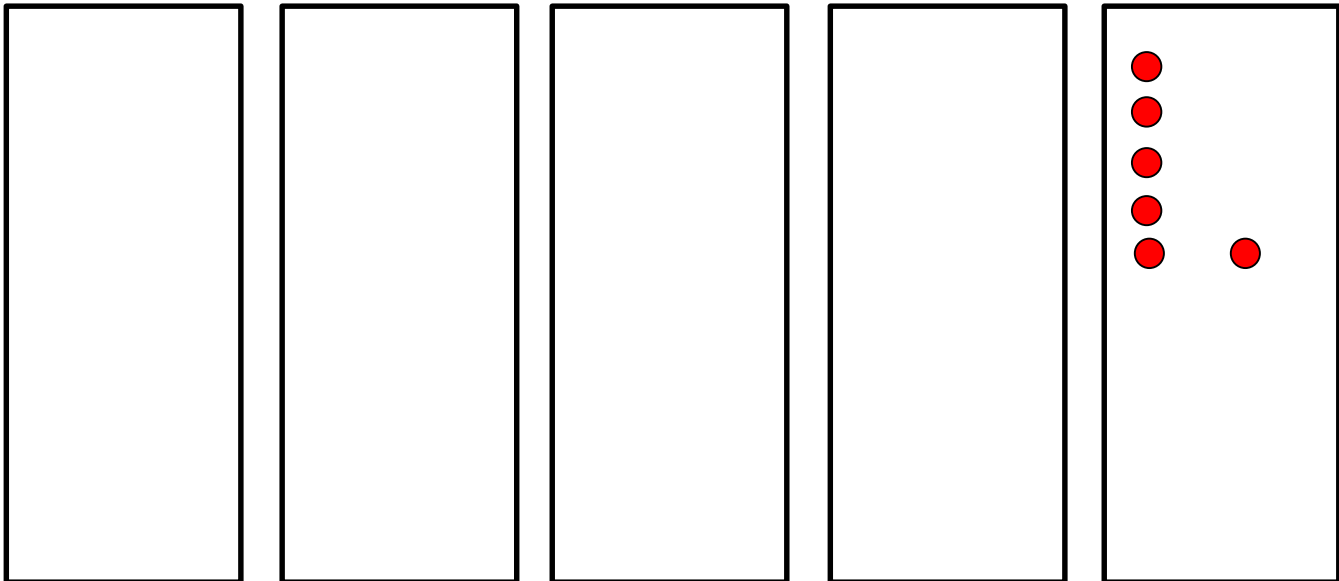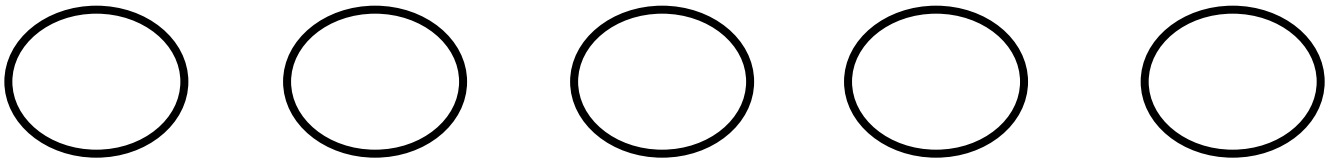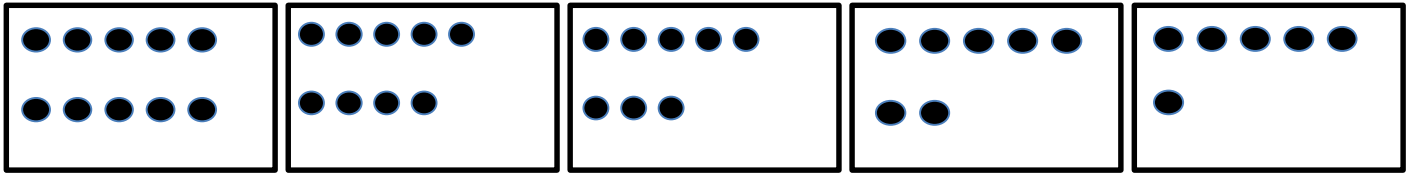
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Lesson 33:   Order quantities from 10 to 1, and match numerals.

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Count the dots. Write how many in the circle. Draw the same number of dots below the circle, but go up and down instead of across. The number 4 is done for you.

Count the balloons. Cross out
1 balloon. Count and write how
many balloons are left in the box.

Count the basketballs. Cross out
1 basketball. Count and write how
many basketballs are left in the box.

Count the balloons. Cross out
1 balloon. Count and write how
many balloons are left in the box.

Count the basketballs. Cross out
1 basketball. Count and write how
many basketballs are left in the box.

Lesson 33:   Order quantities from 10 to 1, and match numerals.

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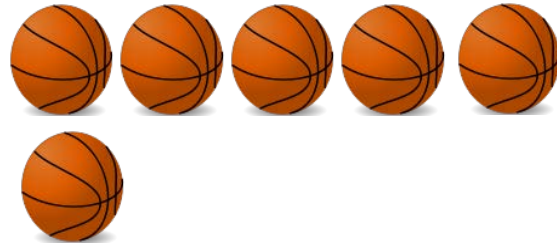
Name _____   Date _____

Draw a line to match the picture to its number.
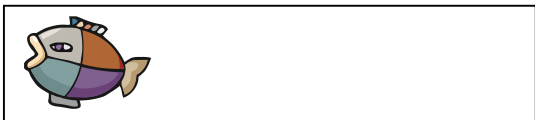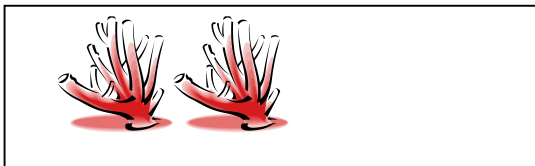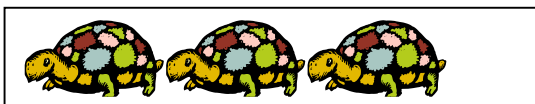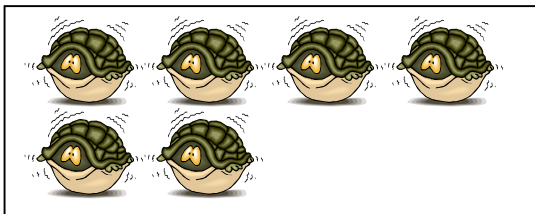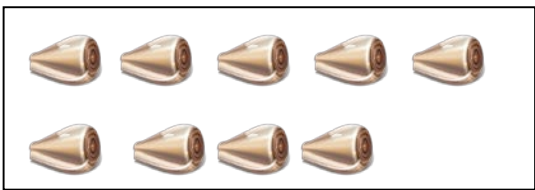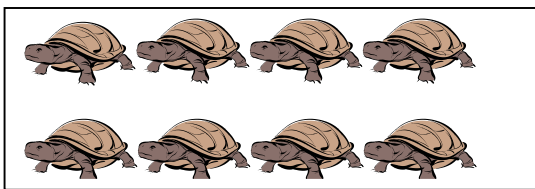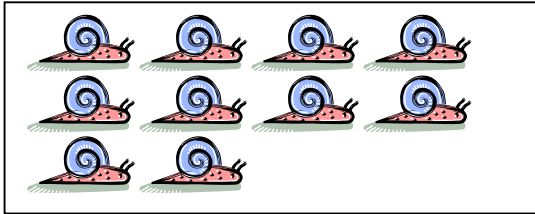
(11 snails)	**8**
(8 tortoises)	**6**
(9 shells)	**9**
(6 turtles)	**10**
(4 fish)	**7**
(3 turtles)	**1**
(2 coral)	**4**
(1 fish)	**2**
	3
	5

Lesson 33:   Order quantities from 10 to 1, and match numerals.

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Cut the cards out on the dotted lines. On one side, write the numbers from 1-10. On the other side, show the 5-group dot picture that goes with the number. Mix up your cards, and practice putting them in order in the "1 less" way.

Make 5-group Cards

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Lesson 34

Objective: Count down from 10 to 1, and state 1 less than a given number.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)

Total Time   **(50 minutes)**
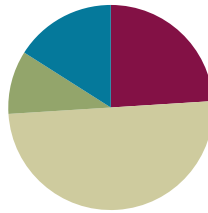
Fluency Practice (12 minutes)

- Green Light, Red Light **K.CC.2**   (4 minutes)
- Wet Dog Counting **K.CC.4a**   (4 minutes)
- Rekenrek **K.CC.2**   (4 minutes)

Green Light, Red Light (4 minutes)

Conduct the activity as outlined in Lesson 5, but now focus more on counting down.

Wet Dog Counting (4 minutes)

T: Pick a number between 1 and 10. (Call on a student.)

S: 4.

T: Wet dog, counting down from 4. Ready?

S: 4, 3, 2, 1 (while shaking the right arm), 4, 3, 2, 1 (while shaking the left arm), 4, 3, 2, 1 (while shaking the right leg), 4, 3, 2, 1 (while shaking the left leg).

Select another student to choose another number, and repeat.

Rekenrek (4 minutes)

Repeat the whisper/talk and think/talk Rekenrek counting activity as outlined in Lesson 28.

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Lesson 34:   Count down from 10 to 1, and state 1 less than a given number.

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Application Problem (5 minutes)

MP.1

Draw 2 plates. On your first plate, draw 8 grapes. On the next, draw 1 less. Write the numbers below the plates. Now, draw 2 cups. In the first cup, draw 6 straws. In the next, draw 1 less. Write the numbers below the cups.

Note: Reviewing the concept of *1 less* prepares students for counting down in today's lesson.

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Help English language learners solve the problem by first reading to them and then modeling the different steps. Explain the concept *1 less* by showing an example of what 1 less than any number within 10 looks like.

Concept Development (25 minutes)

Materials: (T) Large tree drawn on the board, 10 cardboard apples affixed with tape to the tree in a circular formation, simple puppet made from a paper bag to represent a farmer

T: We are going to have a math play. What do you notice on the board?

S: I see an apple tree. There are 10 apples on the tree.

T: Listen to my story. Once upon a time, there was a farmer who had an apple orchard. (Introduce the farmer puppet.) It was harvest time, and the farmer picked his first apple of the season. (Remove an apple from the tree with the puppet. Be sure to remove the apples in an order that mimics the sequence of the robot activity in the Problem Set below.) How many apples does he have left?

S: There are 9 apples.

T: There were 10 apples. **One less** is 9. We have 9 apples.

T: The next day, he picked another apple. (Demonstrate.) How many are on the tree now?

S: 8.

T: Yes, 1 less is 8. (Continue with the story until all but 1 have been picked.) Let's do our play one more time, and this time we'll tell the story just with numbers. (Count and replace apples in preparation to repeat activity.) Say it with me.

S: 10. One less is 9. 9. One less is 8. 8... (Continue until there is only 1 apple left.)

T: What would happen if he picked the last apple? (Allow time for discussion to recall the concept of 0.)

> **NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:**
>
> Repeat the game in a small group for students who are performing below grade level so that they have an opportunity to practice counting 1 less. Ask them to say how they know what *1 less* is by asking them to restate what they did.

T: Let's play a game. I'll put some apples on the tree. Count them silently, and think about the number that would be 1 less. Raise your hand when you know. When you hear the magic snap, tell me the number that would be 1 less.

S: (Answer chorally.)

T: (Repeat several times with different numbers of apples until the students are confident in their answers and demonstrate clear understanding of *1 less*.)

T: Now, we will tell the story in a different way with our Problem Set.

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Lesson 34:   Count down from 10 to 1, and state 1 less than a given number.

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Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute double 5-group mat and robot cutouts. Read the story all the way through before the students do any cutting. Then, have them cut out all the robot circles. Each student should place their cutouts so that they can see them all. Read the story again as students glue their cutouts in the right place.
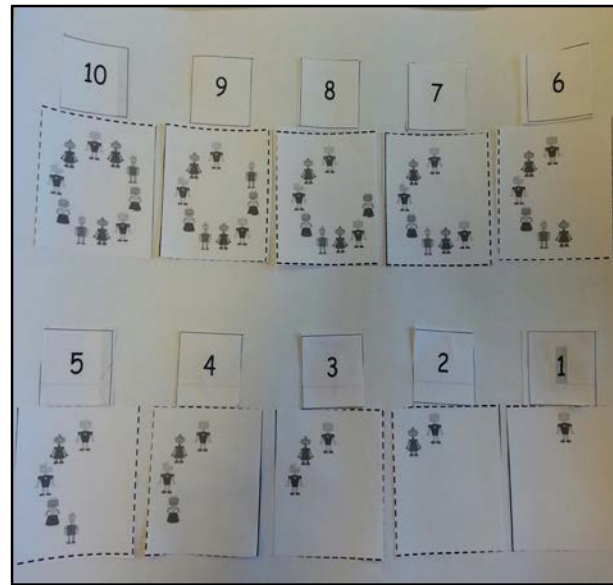
Student Debrief (8 minutes)

Lesson Objective: Count down from 10 to 1, and state 1 less than a given number.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- With a partner, take turns telling the story again. Partner 1 says, "Ten robots were playing in a circle. One robot's mom called, and he had to go home. 10. **One less** is 9." Then, Partner 2 says, "Nine robots were playing in a circle. One robot's mom called, and he had to go home. 9. One less is 8." See how far you can get with the story.
- How many robots had to go home each time? What happened to the circle when he left?
- Did you see a pattern after each robot left?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Read the story to the students. Have students cut out the robots. Read the story again as the students glue the robots on the 5-group mat.

10 robots were playing in a circle. 1 robot's mom called, and he had to go home. 10. One less is nine. 9 robots were playing in a circle. 1 robot's mom called, and he had to go home. 9. One less is eight. 8 robots were playing in a circle. 1 robot's mom called, and he had to go home. 8. One less is seven. 7 robots were playing in a circle. 1 robot's mom called, and he had to go home. 7. One less is six. 6 robots were playing in a circle. 1 robot's mom called, and he had to go home. 6. One less is five. 5 robots were playing in a circle. 1 robot's mom called, and he had to go home. 5. One less is four. 4 robots were playing in a circle. 1 robot's mom called, and he had to go home. 4. One less is three. 3 robots were playing in a circle. 1 robot's mom called, and he had to go home. 3. One less is two. 2 robots were playing in a circle. 1 robot's mom called, and he had to go home. 2. One less is one. And, he played happily ever after!

1	2	3	4	5
6	7	8	9	10

Lesson 34:   Count down from 10 to 1, and state 1 less than a given number.

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Lesson 34:   Count down from 10 to 1, and state 1 less than a given number.

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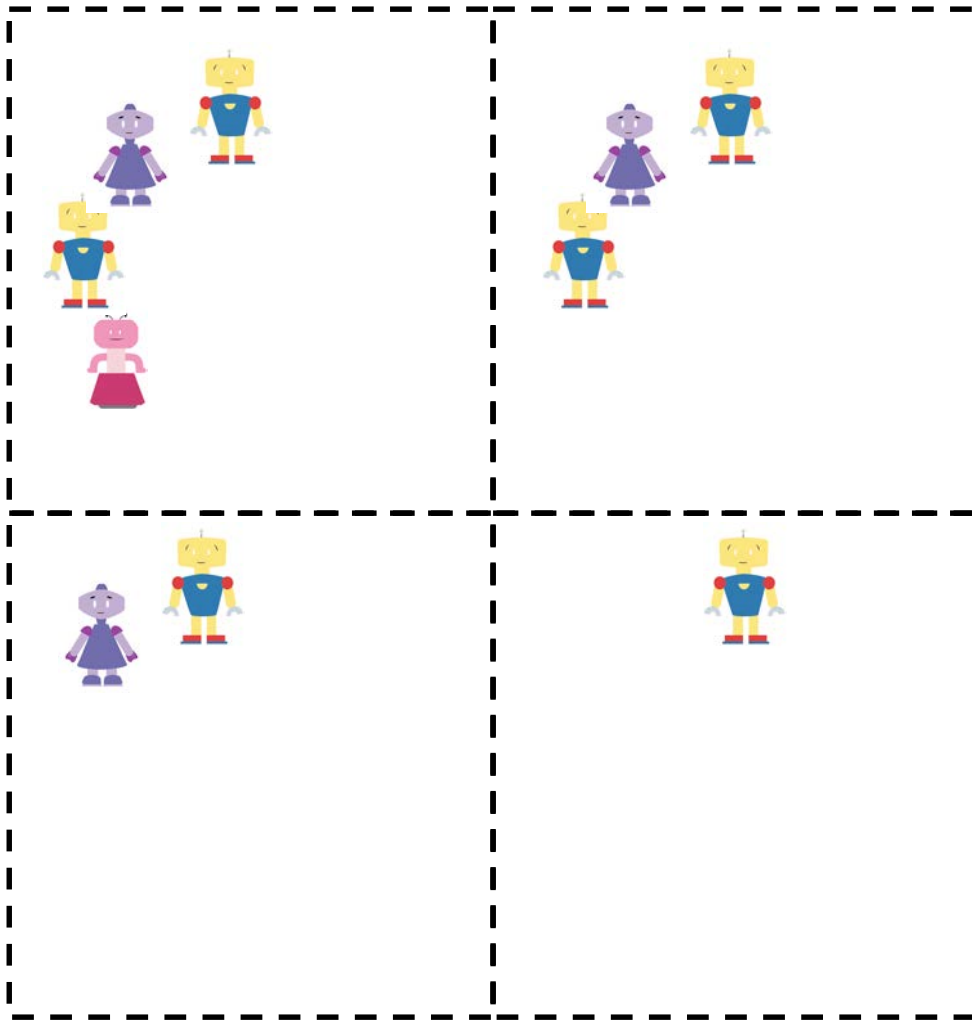
Name _____   Date _____

Count and write the number of apples. Color only the group of apples that is 1 less.

Count and write the number of hearts. Color only the group of hearts that is 1 less.
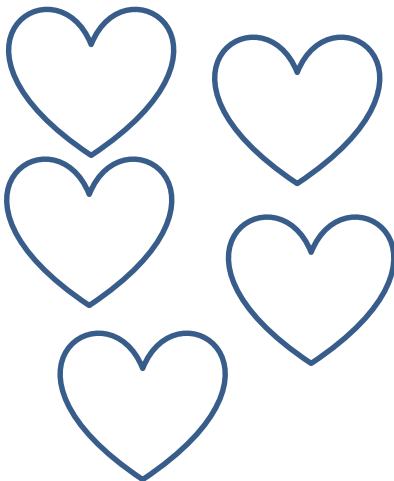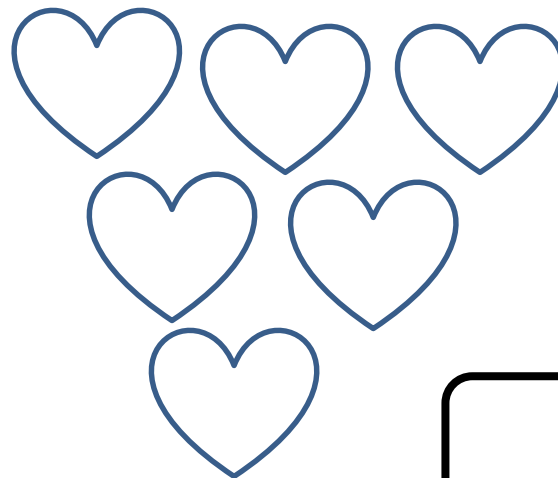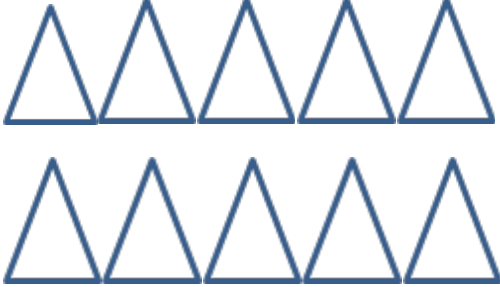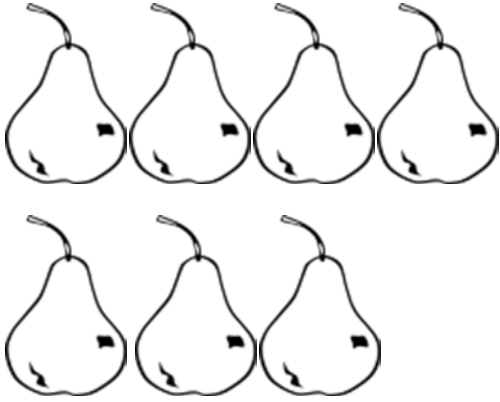
Name _____   Date _____

Count and color the triangles. Draw a group of triangles that is 1 less.
Write how many you drew.

Count and color the pears. Draw a group of pears that is 1 less. Write how
many you drew.

Lesson 35

Objective: Arrange number towers in order from 10 to 1, and describe the pattern.

Suggested Lesson Structure

■ Fluency Practice   (12 minutes)
■ Application Problem   (5 minutes)
■ Concept Development   (25 minutes)
■ Student Debrief   (8 minutes)

  Total Time   **(50 minutes)**
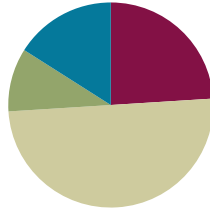
Fluency Practice (12 minutes)

▪ Show Me 1 Less **K.CC.4c**   (4 minutes)
▪ Finish My Sentence (1 Less) **K.CC.4c**   (4 minutes)
▪ Happy Counting Within 10 **K.CC.2**   (4 minutes)

Show Me 1 Less (4 minutes)

Materials: (S) Bag of red and white beans, left hand mat (Lesson 1 Fluency Template)

T: Show me 3 beans.
S: (Place a red bean on the left pinky, left ring finger, and the left middle finger to show 3 beans.)
T: Now, show me 1 less.
S: (Remove a red bean from the left middle finger, leaving 2 beans.)
T: How many beans are on your mat now?
S: 2.

Stay within a predictable pattern until students are comfortable with this exercise, and then skip around. Carefully observe to see which students must recount all of the beans to tell the number that is 1 less.

Finish My Sentence (1 Less) (4 minutes)

T: Raise your hand when you can finish this sentence. 3. One less is… (wait for all hands to go up, and then signal).
S: 2.
T: 2. One less is… (wait for all hands to go up, and then signal).
S: 1.

If students exhibit mastery, skip around after establishing a predictable pattern.

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Lesson 35:   Arrange number towers in order from 10 to 1, and describe the pattern.

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Happy Counting Within 10 (4 minutes)

Conduct the activity as outlined in Lesson 6. At this point, students are likely ready for a challenge and want to show how quickly they can do this exercise. Try alternating between a rapid pace and a very slow pace to keep students focused. Never allow them to rush the choral response. Ensure that they are always responding to the teacher's signals.

Application Problem (5 minutes)

Draw a snow girl that is 3 snowballs high. Next to her, draw a snow boy with 1 less. How many snowballs are in your snow boy? Compare your pictures with your friend's.

Note: In this problem, the students begin thinking about linear comparisons of 1 less.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Challenge students performing above grade level by asking them to repeat the problem with different numbers. Have them say how their two pictures are similar and how they are different.

Concept Development (25 minutes)

Materials: (S) 1 set of linking cube stairs prepared per the instructions in Lesson 30, 5-group cards (Lesson 7 Template 2)

On the board, draw a pictorial chart similar to the one below. Cut out the images of the bear and the honey, and affix them to the board with tape to use in the lesson discussion.

Lesson 35:   Arrange number towers in order from 10 to 1, and describe the pattern.

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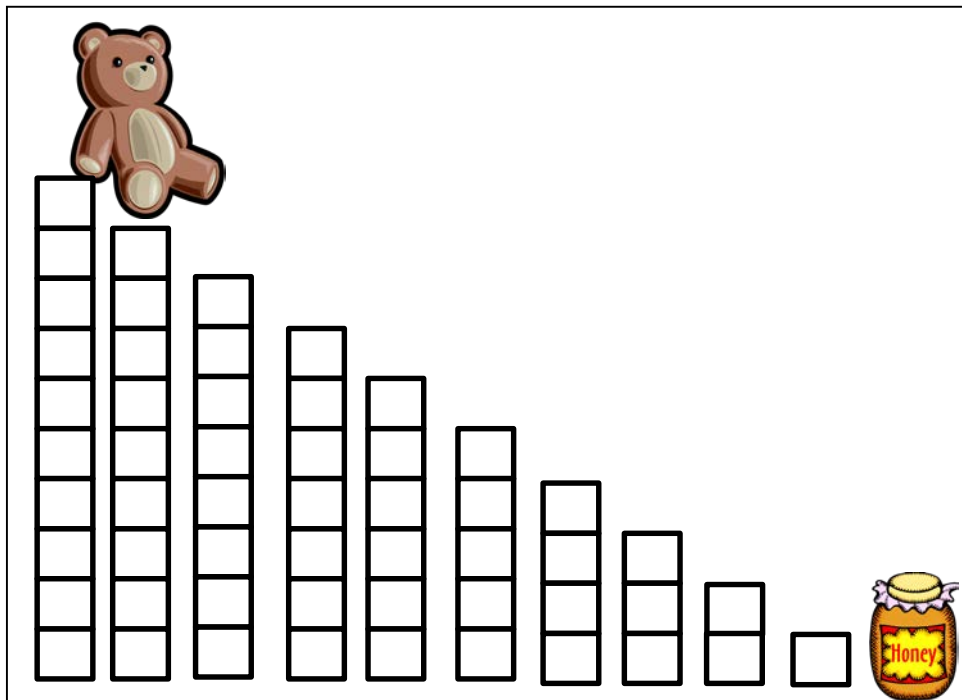
T: Our friend baby bear is back! He is awake today and is very hungry for some honey. Do you think you can help show him the way?

S: Yes! He should go down the stairs.

T: Which stair is he on now?

S: 10.

T: (Label the 10 stair.) Now, where should he go?

S: He should go down to the next stair. He should go to 9.

T: Say it with me while I move the bear: "10. One less is 9." (Move bear to 9.)

S: 10. One less is 9.

T: Tell the bear where to go next. (As in Lesson 30, continue to repeat the pattern, and label the stairs until the bear has reached the honey.)

> **NOTES ON MULTIPLE MEANS OF REPRESENTATION:**
>
> Ask English language learners to practice telling a partner "1 less than 10 is 9," etc., as they take apart a tower. Practicing the language helps English language learners to participate and to internalize the concepts being taught.

T: He made it! Let's count our stairs one more time the *1 less* way. Repeat after me: "10. One less is 9. 9. One less is 8…" (Point to the board stairs as you count.)

S: (Repeat counting sequence.)

T: Take the stair for 10 out of your bag. Check with your partner to make sure you both took out stairs that are exactly the same. What do you notice?

S: There are 5 red and 5 blue cubes. There are 10 cubes.

T: Take off 1 red cube. What do you see now?

S: We have 5 blue and 4 red. We have 9 cubes in our stair.

T: Yes. You had 10. One less is 9. Take off another red cube. One less is…

S: 8.

T: (Continue through the sequence until students are holding only 1 cube.) Put your tower back together so it is exactly the same as when you took it out of the bag. Check with your partner to make sure.

S: (Discuss with partners.)

MP.7

T: Remove all of the other stairs from your bag. Put them in order so the baby bear can get to the honey. If you need help, you may look at the board.

S: (Arrange the stairs in decreasing order.)

T: Let's count our stairs to be sure.

S: (Count on their stairs while the teacher demonstrates on the board.) 10. One less is 9. 9. One less is 8…

T: It's time to name our stairs. Take out the 5-group cards. Look at each stair, and put the card with the correct number next to the stair. When you are done, share your work with a partner. Show him how you would count your stairs the *1 less* way. (Circulate to ensure understanding and accuracy.)

T: We will be using your stairs again tomorrow, so put them back in the bag carefully.

EUREKA MATH™   **Lesson 35:**   Arrange number towers in order from 10 to 1, and describe the pattern.   engage^ny   **345**

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute the Problem Set to students. Guide students to color the bottom group of 5 cubes. Then, count the cubes, and write how many. Ask students to think about what they notice as they are coloring and counting.

On the second page, count the number of cubes in a stair. Then, cross off the top square. As you cross off each square, you should say, "10. One less is 9. 9. One less is 8." Keep this going until you reach the bottom of the stairs.

Student Debrief (8 minutes)

Lesson Objective: Arrange number towers in order from 10 to 1, and describe the pattern.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you count the cubes? Is there an easier way to count them? Did it help to color the 5 cubes? How did that help?

- Did you notice a pattern when you counted the cubes? How was it different from counting cubes in Lesson 30?

- What did you notice about the stairs on the second page of the Problem Set? Let's start with the first tower, and repeat the words you said. "10. One less is 9." Keep going as a whole group. Have students repeat this with their partners.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

EUREKA MATH™

Lesson 35:   Arrange number towers in order from 10 to 1, and describe the pattern.

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Name _____   Date _____

Color the group of 5 gray cubes. Then, count all the cubes in each tower, and write how many. What do you notice?

EUREKA MATH

Lesson 35:   Arrange number towers in order from 10 to 1, and describe the pattern.

engage^{ny}   348
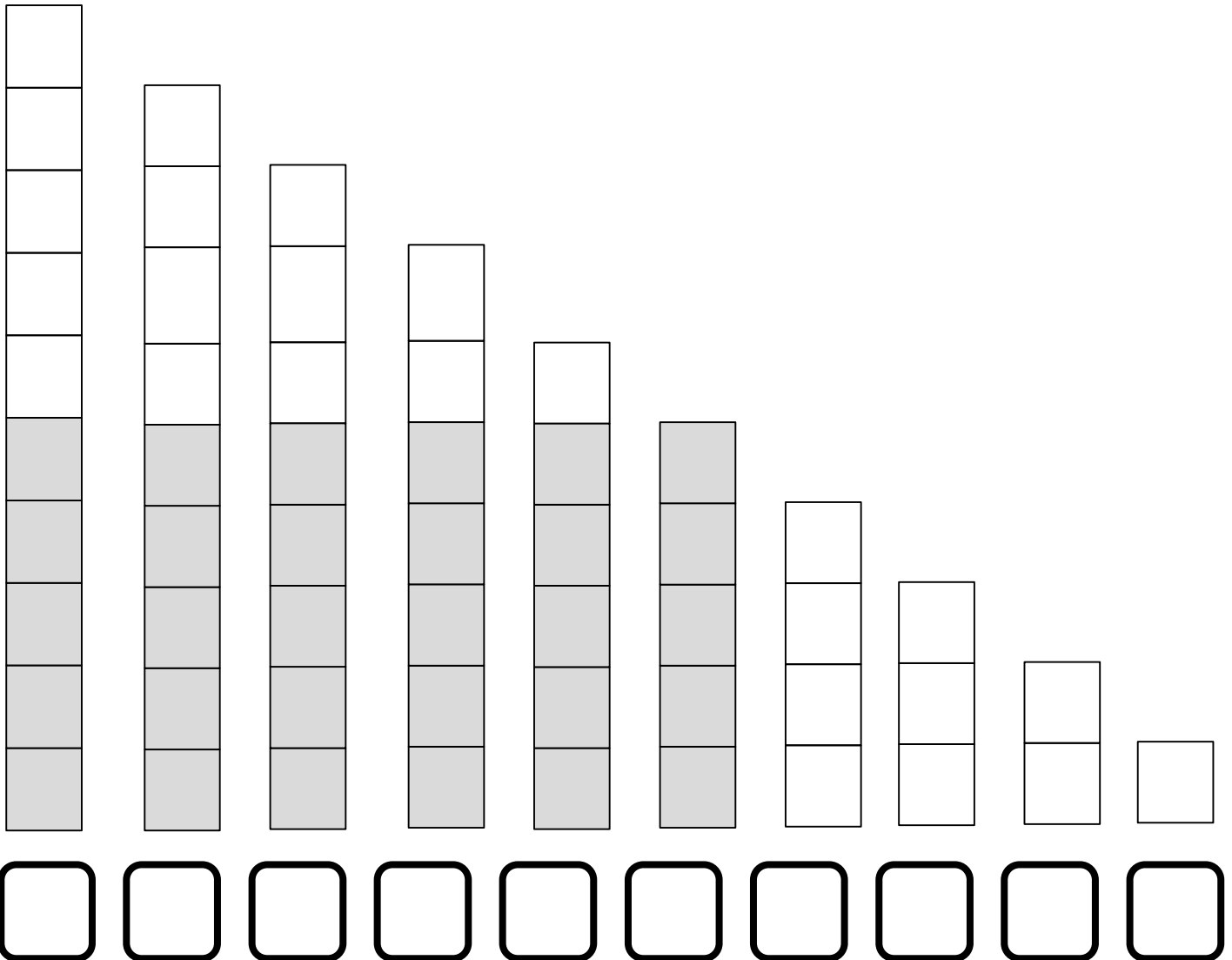
Count the number of cubes in a stair. Cross off the top cube. Use your words to say, "10. One less is nine. 9. One less is eight." Keep going all the way to the bottom of the stairs! Write how many cubes are in the stairs after you cross off the top cube.
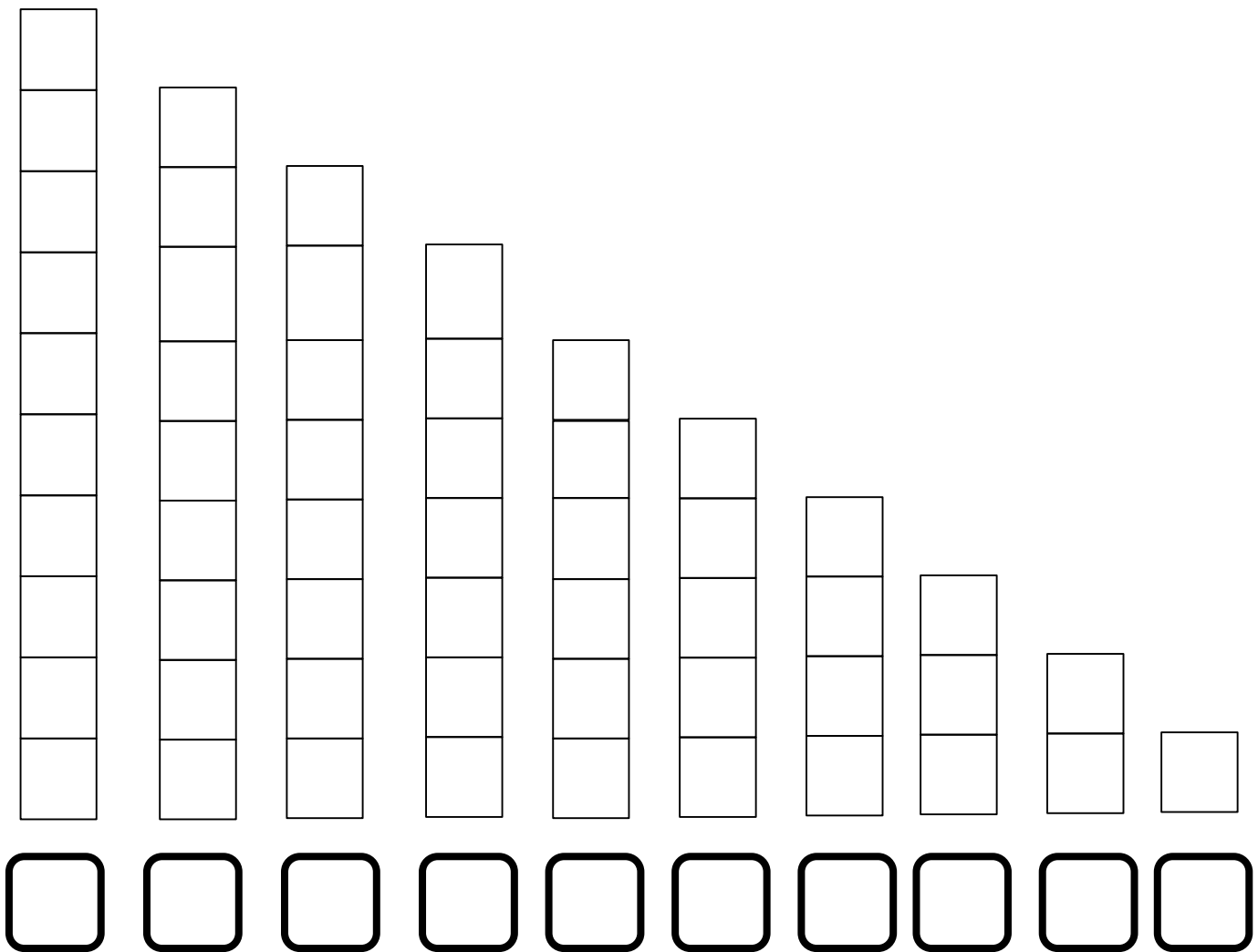
Name _____   Date _____

Count and say the number of cubes in the towers. Count the cubes that are crossed out. Say "1 less," and write the number.

Name _____   Date _____

Count and color the cubes in the tower. Cross the top cube off, and write the number. Draw the next tower with 1 less cube until there are no towers left.
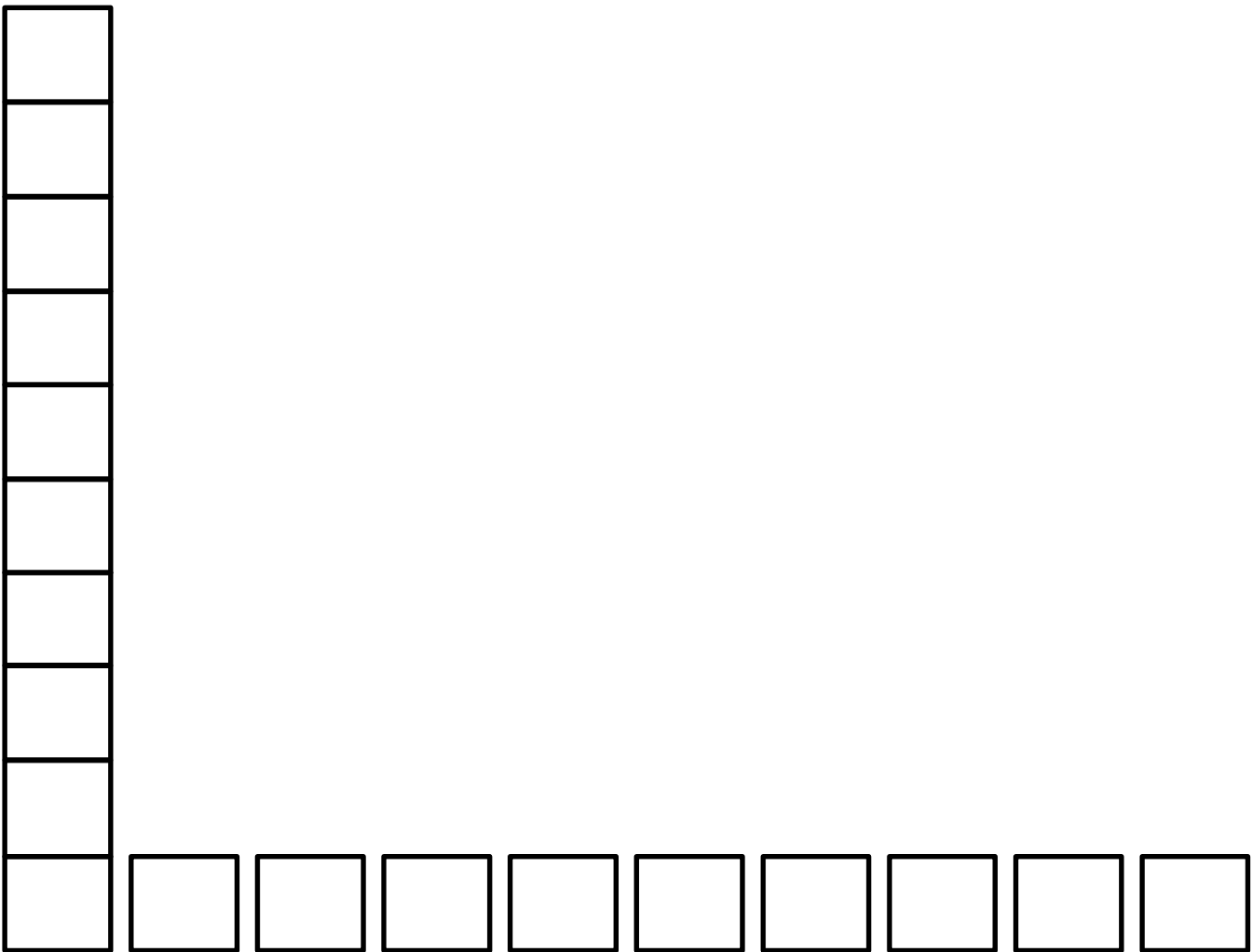
Lesson 36

Objective: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

Suggested Lesson Structure

- ■ Fluency Practice   (12 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (25 minutes)
- ■ Student Debrief   (8 minutes)
- **Total Time**   **(50 minutes)**
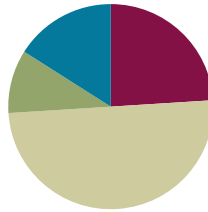
Fluency Practice (12 minutes)

- ▪ Cross 1 Out, and Write How Many **K.CC.4c**   (4 minutes)
- ▪ Show 1 Less **K.CC.4c**   (4 minutes)
- ▪ Roll and Show 1 Less **K.CC.4c**   (4 minutes)

Cross 1 Out, and Write How Many (4 minutes)

Materials: (S) Draw 1 More Template (Lesson 32 Fluency Template)

This activity uses the same template as Lesson 32, but with a different task. After giving clear instructions and completing the first few problems together, allow students time to work independently. Encourage them to do as many problems as they can within a given timeframe.

Optional: Go over the answers, and direct students to energetically shout "Yes!" for each correct answer.

Show 1 Less (4 minutes)

Show me 1 less with fingers the Math Way.

- T: Show me 3 fingers the Math Way.
- S: (Hold up the left pinky, left ring finger, and the left middle finger to show 3 fingers the Math Way.)
- T: Now, show me 1 less.
- S: (Put down the left middle finger, so that only the left pinky and left ring finger remain, showing 2 the Math Way.)
- T: How many fingers are you showing me now?
- S: 2.

Avoid showing the finger combinations yourself. The Math Way soon becomes an immediately recognizable configuration that decreases the need for students to recount each time. Allow time to recount for students who still need to.

EUREKA MATH™

Lesson 36:   Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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Roll and Show 1 Less (4 minutes)

Materials: (S) 1 die

1.   Partner A rolls the die.
2.   Both partners count the dots.
3.   Partner B determines the number that is 1 less and shows that many fingers the Math Way.
4.   Partner A verifies that the number is 1 less.
5.   Switch roles, and play again.

Remind students that if they should roll a 1, they can show 1 less by indicating 0 as a closed fist.

Application Problem (5 minutes)

Draw these number towers on the board.
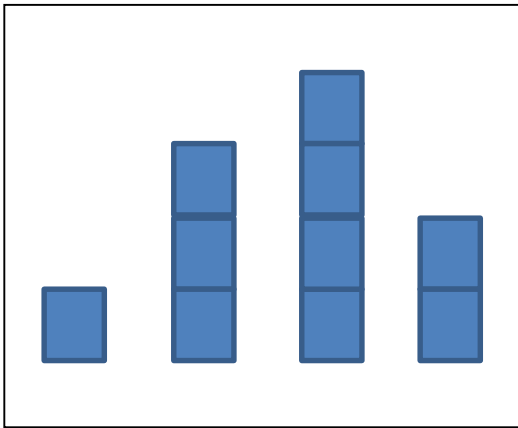
MP.2

NOTES ON
MULTIPLE MEANS
OF ENGAGEMENT:

Challenge students performing above grade level by extending the task. Suggestions include drawing and ordering the towers so that the picture shows 1 more or drawing and ordering four more towers showing 1 less, using the numbers 5, 6, 7, and 8.

Someone mixed up these towers! Draw the towers in order so that each tower in your picture shows 1 less. Write the numbers underneath the towers.

Note: Recalling the *1 less* concept in linear formations helps children as they learn to count 1 less in other formations today.

Concept Development (25 minutes)

Materials: (S) Large construction paper work mat (24" × 21") per pair inscribed as pictured to the right (circles should have a diameter of at least 4"), set of linking cube stairs from yesterday, red and blue crayons
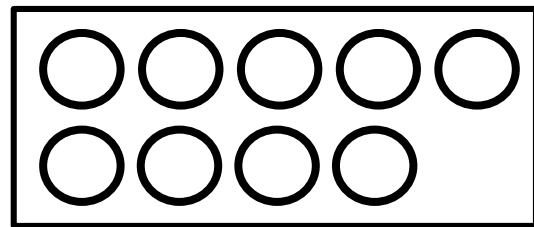
T: Put your number towers on your desk in front of you. Make sure they are in order! Let's check. Point to the correct tower, and echo me: "10. One less is 9. 9. One less is 8…."
S: 10. One less is 9. 9. One less is 8… (Continue through all the towers.)

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**Lesson 36:**   Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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T: We are going to make more bracelets today. Take your 10 tower apart, and put the cubes in the last circle on your work mat. (Demonstrate.) How many are in your last circle?

S: 10.

T: We have 10 cubes. One less is _____. (Wait for the answer.)

S: 9.

T: Please show me your tower for 9. Take the cubes apart, and put them in the circle next to the 10. (Demonstrate.) How many?

S: 9.

T: We have 9 cubes. One less is _____. (Wait for the answer.)

S: 8.

T: (Continue with this sequence until the cubes of each stair are scattered in their circle on the work mat. Circulate to ensure accuracy.)

T: Let's count the cubes in our circles. Do we have to count every one of the cubes to know how many there are in each circle? Did the numbers change just because we broke apart our towers? (Discuss briefly.) Let's count just to be sure….

S: 10. 1 less is 9. 9. 1 less is 8…

T: We will pretend we are making bracelets now. Move the cubes to the edges of their circles so that they are like beads on a bracelet. What do you notice? (Guide students to have a comparative discussion about size, shapes, and colors similar to that in Lesson 31.)

T: Do you remember what we did with our last set of bracelets? Take the cubes off the last circle, and draw red and blue beads there instead. (Demonstrate.) What would we do on the next circle?

S: Take off each cube, and draw a bead instead. When we get to the smaller numbers, we will only need our blue crayons!

T: Great ideas. Go ahead and carefully replace each of the cubes with a crayon bead. (Circulate to ensure accuracy.)

T: Now, we need to name our bracelets. Let's call our last bracelet 10. What should we call the bracelet with 1 less?

S: 9.

T: Yes, we can name each one after its number of beads. Choose a crayon, and label all of your bracelets. Now, you can take them home.

Problem Set (5 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Distribute both pages to the students. Follow the directions. Review the phrase "9. One less is 8," as students count and write the total and count what is left after crossing out 1 object.

Lesson 36: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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Student Debrief (8 minutes)

Lesson Objective: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- What happens when you cross out 1 object from a group of objects?
- Look at the scattered set of objects. Show your neighbor the objects you put an X on. Tell them why you chose that object to cross out.
- Did you and your neighbor choose different objects or the same object to cross out? Did it make a difference when you counted how many were left?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Lesson 36: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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Name _____   Date _____

Count the objects. Write the number in the first box. Put an X on the shaded object. Count the objects that are left. Write the number that is left in the second box.
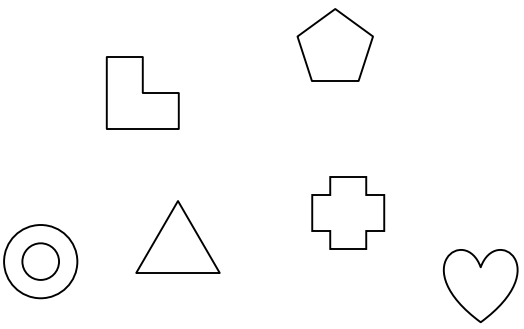
[ ] one less is [ ]
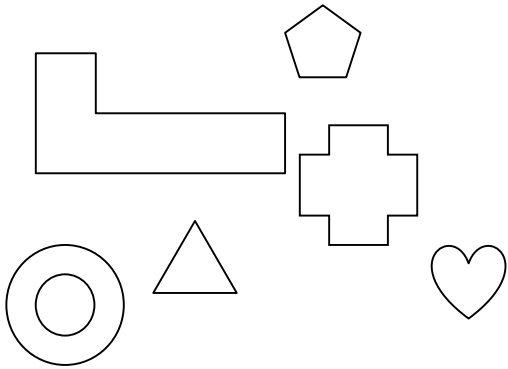
[ ] one less is [ ]

Count the objects. Write the number. Put an X on one object. Count the objects that are left. Write the number in the second box.

[ ] one less is [ ]

[ ] one less is [ ]

Lesson 36:   Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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Count and write how many.
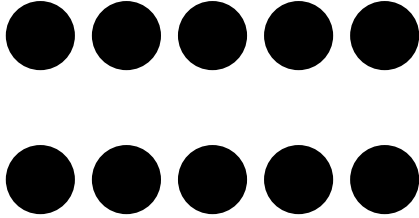
Draw 1 less. Count and write how many.

Count and write how many.

Draw 1 less. Count and write how many.

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Lesson 36: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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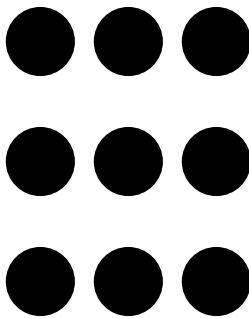
Name _____   Date _____

Fill in the missing numbers.

10, 9, ___, ___, ___, 5, 4, ___, ___, ___

Count and write the number of happy faces in the box. Draw another set below it that has one less, and write the number in your set.

My set:

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Lesson 36: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.

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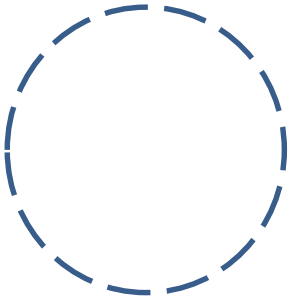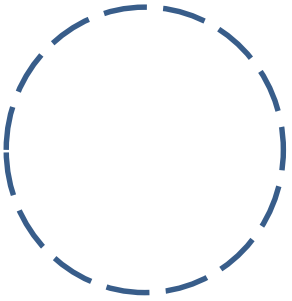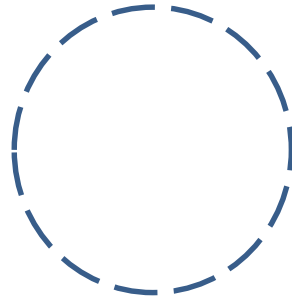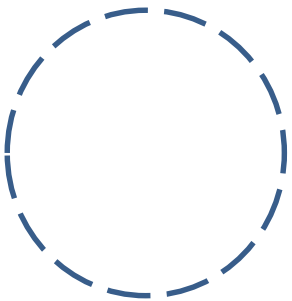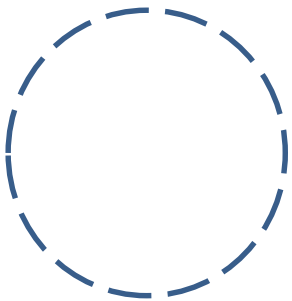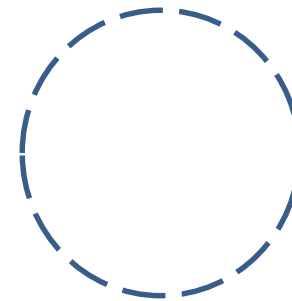
Name _____   Date _____

Draw bracelets to show 1 less than the number in the box.

If the number is missing, write it in the box.

◯ **10**	→ ◯ **9**	→ ◯ ⬜
◯ ⬜	→ ◯ ⬜	→ ◯ ⬜

Fill in the missing numbers.

_____, _____, 8, 7, _____, _____, _____, 3, 2, 1, _____

Lesson 37

Objective: Culminating Task

Decide how to classify the objects in your bag into two groups. Count the number of objects in each group. Represent the greater number in various ways. Next, remove the card from your pack that shows the number of objects in the smaller group. Put your remaining cards in order from smallest to greatest. Your friends have to figure out what card is missing when they visit your station!

Suggested Lesson Structure

■ Fluency Practice   (7 minutes)
■ Concept Development   (35 minutes)
■ Student Debrief   (8 minutes)

Total Time   (50 minutes)
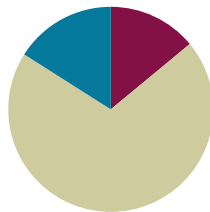
Fluency Practice (7 minutes)

- Building *1 More* and *1 Less* Towers **K.CC.4c**   (4 minutes)
- 5-Group Finger Counting **K.CC.2**   (3 minutes)

Building *1 More* and *1 Less* Towers (4 minutes)

Materials: (S) 10 linking cubes

Guide students through the process of building a tower while stating the pattern as *1 more*. Maintain consistency in the language: "1. One more is 2. 2. One more is 3. 3. One more is 4." Continue to 10.

Disassemble the tower while stating the pattern as *1 less*. Again, the language is crucial to students' conceptual understanding: "10. One less is 9. 9. One less is 8. 8. One less is 7." Continue to 0.

5-Group Finger Counting (3 minutes)

T: Quick! Show me 5.

S: (Extend an open left hand to show 5, without having to count.)

T: Show me 1 more.

S: (Show an open left hand for 5 and the thumb of the right hand for 6.)

T: We can count from 5 like this: 5 (push out the left hand), 1 more (push out the thumb of the right hand) is… (push both the left hand and the thumb of the right hand) 6. Try it with me. Ready?

S: 5 (push out the left hand), 1 more (push out the thumb of the right hand) is… (push both the left hand and the thumb of the right hand) 6.

T: Stay there at 6. Now, show me 1 more.

S: (Show an open left hand for 5 and the thumb and the index finger of the right hand for 7.)

T: How many fingers are you showing on your left hand?

S: 5.

T: And your right hand?

S: 2.

T: How many fingers are you showing in all?

S: 7.

T: So, this time we'll say 5 (push out the left hand), 2 more (push out the thumb and index finger of the right hand) is… (push out both the left hand and the thumb and index finger of the right hand) 7. Try it with me. Ready?

S: 5 (push out the left hand), 2 more (push out the thumb and index finger of the right hand) is… (push out both the left hand and the thumb and index finger of the right hand) 7.

Continue to 10 if students are ready, but do not rush—this is a challenging counting activity. As students begin to note the pattern, steadily remove the scaffold until they can state the relationship to the 5-group without guidance. It would be better for students to achieve mastery to 7 than to mimic the teacher to 10.

Concept Development (35 minutes)

Materials: (S) 10 paper "mystery" bags, each containing a set of loose linking cubes such that the first bag has 1, the second, 2, and so on up to 10; materials for each station: 1 set of 5-group cards (Lesson 7 Template 2), pipe cleaner, bag with 5 red and 5 white beads, 1 bag of 10 lima beans, 1 bag of 10 popsicle sticks, 2 bags of other various counters (10 each), personal white board and markers, Rekenrek, 2 work mats inscribed with a large circle, 2 5-group mats, paper plate, plastic cup, crayons, paper, other materials as desired

Prior to class, set up stations so that each has one complete set of the materials outlined above. Create a decorative, welcoming sign on the board that says *Number Fair*. Due to the nature of this lesson, there is no Problem Set or Exit Ticket. It is best to record observations of student work during the Concept Development.

T: We are going to have a Number Fair today! Your job will be to make an exhibit for your mystery number at our fair. You will want to show your number in as many ways as you can, using anything you choose at your station. You will discover your mystery numbers in a minute.

EUREKA MATH™   **Lesson 37:**   Culminating Task

MP.4

T: Look at our stations. Considering the materials at each station, do you have some ideas for ways you might show your number?

S: We could find the 5-group card for our number! → We could make a bracelet, or draw a picture. → We could use our 5-group mats. → We could make it with beans around our cup!

T: Those are all good ideas. Use as many of them as you can. There is one idea you must use, though, and this will be the very first job at your station. You will put your 5-group cards in order from smallest to greatest, and then hide the card that shows your mystery number. Your friends will have to figure out what card is missing when they visit your station!

T: (Distribute mystery bags to students working singly or with a partner of similar ability, depending on class size.)

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Challenge students performing above grade level by asking them to find more ways for stations to show their mystery number and to share with the students at those exhibits. Model if necessary.

T: In the mystery bag, there are some objects. Shake your bag, and listen. How many do you think you have?

S: (Answers vary.)

T: When I give the signal, you and your partner may count how many objects are in your bag to find out your mystery number. Are you ready to count and begin your exhibit? Go!

S: (Count objects and find a station. Begin sorting 5-group cards and creating representations of their number.)

T: I will give you time to work on your exhibit. After 20 minutes, I will give you a chance to visit the other exhibits in our Number Fair.

Use this time as an informal assessment tool for the close of the module. Circulate to observe student discussions and work. What representations are easiest and most familiar to the students? Are there some that might need review? What vocabulary and language do the students use in their discussions? Do they exhibit thorough understanding of the numbers?)

T: (When preparation time is up, allow students to rotate through the other exhibits.) Now, you may look at the rest of the Number Fair. Talk with your partner about what you see at each station. What is the number shown at the exhibit? How do you know? In what ways did your friends show the number?

Suggestion: This would be a wonderful opportunity to have some other teachers, older students, parents, or administrators come into the classroom to view the exhibits at the end of class. Students could explain their work to the visitors as an extension of the lesson (MP.3 and MP.4).

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Student Debrief (8 minutes)

Lesson Objective: Culminating task—*Decide how to classify the objects in your bag into two groups. Count the number of objects in each group. Represent the greater number in various ways. Next, remove the card from your pack that shows the number of objects in the smaller group. Put your remaining cards in order from smallest to greatest. Your friends will have to figure out what card is missing when they visit your station!*

Have the students gather on the rug to discuss the Number Fair. The following is a list of suggested questions to invite reflection and active processing of the total lesson experience. Use those that resonate while considering what best supports students' ability to articulate the focus of the lesson.

- In what ways did you decide to represent your number?
- What method did you choose first? Why?
- Did you see any new ways to make numbers today?
- Can you think of a way to represent your mystery number at home tonight?

Exit Ticket (3 minutes)

Rather than having an Exit Ticket for this lesson, the teacher is encouraged to record observations as students work with their partner as described at the closing of the Concept Development.

Name _____ Date _____

Count how many are in each group. Write the number in the box. Circle the smaller group.
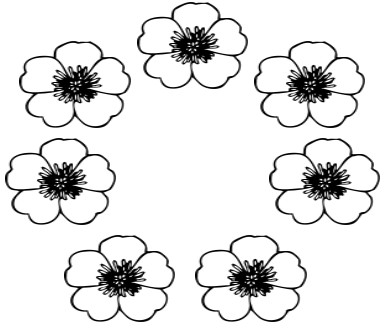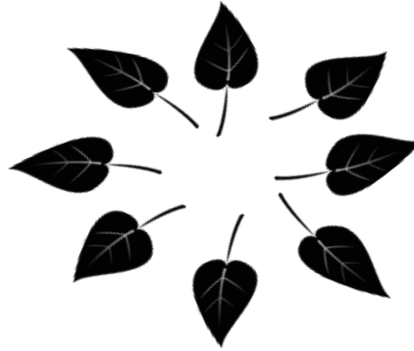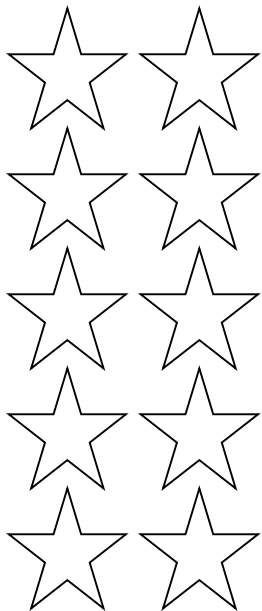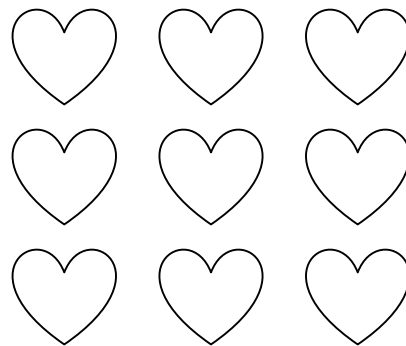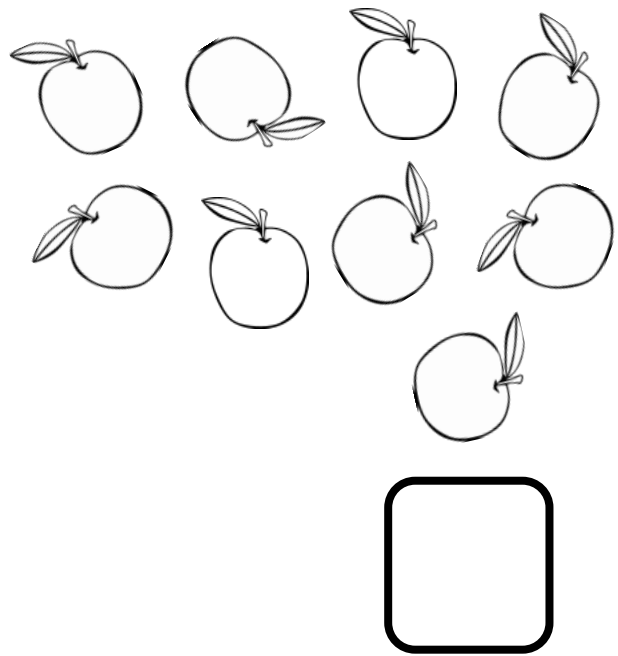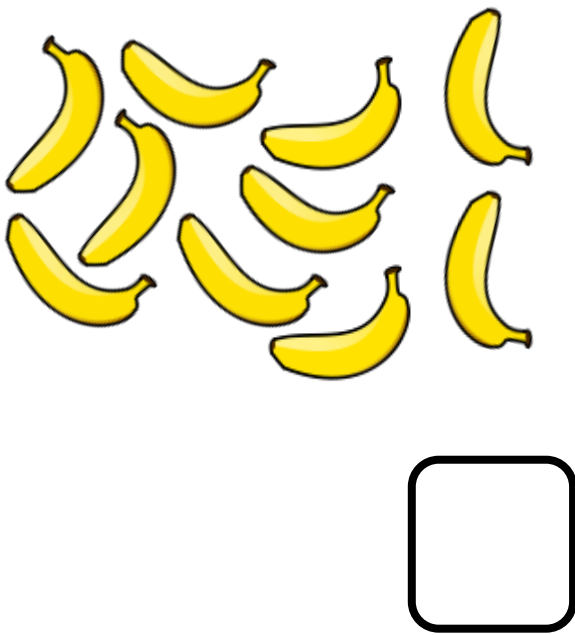
Draw some toys you enjoy.

Draw some healthy foods.

How many?
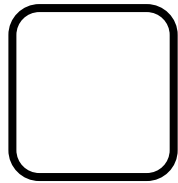
How many?
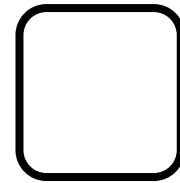
Student Name: _____

Topic E: Working with Numbers 6–8 in Different Configurations

Rubric Score: _____ Time Elapsed: _____

	Date 1	**Date 2**	**Date 3**
Topic E			
Topic F			
Topic G			
Topic H			

Materials: (S) 10 linking cubes (or other familiar classroom objects)

T: Please count 6 linking cubes, and put them in a row. (Pause.) Write the numeral 6.

T: (Arrange 7 cubes in a circular configuration.) Please count the cubes. (Pause.) Write the number 7. Show me the 5-group that's hiding in this group of cubes.

T: (Arrange 8 cubes into an array of 4 and 4.) How many cubes are there now? (Pause.) How did you know there were that many?

What did the student do?	What did the student say?
1.	
2.	
3.	

Topic F: Working with Numbers 9–10 in Different Configurations

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 12 linking cubes (or other familiar classroom objects), brown construction paper mat to show the problem

- T: Now, let's pretend these cubes are bears! Show me this problem: There were six bears who were eating leaves here in the woods. (Pause.) Three more bears came over to snack on some leaves. How many bears were eating leaves in the woods?
- T: Use your words to tell me how you figured out the problem.
- T: Write the number that tells how many bears there are eating leaves.
- T: Another bear came. Show me the bears now. How many bears is that? Write that number.

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	

Topic G: *One More* with Numbers 0–10

Rubric Score: _____ Time Elapsed: _____

Materials: (T) Numeral and dot cards (End of Module Assessment Task Template), 10 cubes

- T: (Hold up the card showing 4 dots.) Use the cubes to show me the number of cubes that is 1 more than this.
- T: (Hold up the card showing the numeral 6.) Use the number cards to show me the numeral that's 1 more. How did you learn that?
- T: Put these numeral cards in order from smallest to greatest. (Hand the students the 7, 8, and 9 cards out of order.)

What did the student do?	What did the student say?
1.	
2.	
3.	

Topic H: *One Less* with Numbers 0–10

Rubric Score: _____ Time Elapsed: _____

Materials: (T) Numeral and dot cards (End of Module Assessment Task Template), 10 counting objects

- T: (Place 10 objects in an array of two 5-groups.) How many objects are there? (Note how the student counts.) Show 1 less. Write how many you have now.
- T: (Put the number cards in order from 10 to 1. Turn over the numbers 9, 7, 5, and 2.) Touch and tell me the hidden numbers. Don't turn over the cards, though!
- T: (Place the 9, 7, 5, and 2 dot cards in a line out of order.) Match the dot cards to the hidden numbers. Turn over the hidden card when you are sure you have matched it.

What did the student do?	What did the student say?
1. 2. 3.	

<table>
<tr><td>End-of-Module Assessment Task
Standards Addressed</td><td align="right">Topics E–H</td></tr>
</table>

Know number names and the count sequence.

K.CC.3   Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).

Count to tell the number of objects.

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.

    a.   When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

    b.   Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

    c.   Understand that each successive number name refers to a quantity that is one larger.

K.CC.5   Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Evaluating Student Learning Outcomes

A Progression Toward Mastery is provided to describe and quantify steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency.* In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for students is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the students can do now and what they need to work on next.

A Progression Toward Mastery				
Assessment Task Item	STEP 1 Little evidence of reasoning without a correct answer. (1 Point)	STEP 2 Evidence of some reasoning without a correct answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
Topic E **K.CC.3** **K.CC.4a** **K.CC.4b** **K.CC.5** K.MD.3	Student shows little evidence of writing or counting numerals, no understanding of the 5-group, and is almost non-responsive.	Student inconsistently counts the cubes. Student may or may not say and write the correct number. Student is unable to identify the 5-group and is unable to state a reason why she knows there are 8 cubes.	Student correctly counts and states the number of cubes (with more time elapsed) but struggles with writing the numerals and identifying the 5-group. Student is able to verbalize how she knows there are 8 cubes but is unclear in her explanation.	Student correctly: ▪ Counts the linking cubes, puts them in a row, and writes the number 6. ▪ Counts to 7 in the circular configuration, writes the number 7, and identifies the 5-group. ▪ Counts 8 cubes and gives a reasonable answer to how she knows there are 8 (e.g., "I counted all of the cubes one at a time," or "I see 4 on top and 4 on the bottom, and I know 4 and 4 is 8").
Topic F **K.CC.3** **K.CC.4a** **K.CC.4b** **K.CC.5**	Student shows little evidence of understanding zero or how to solve *put together with result unknown* problems. Numbers are illegible.	Student shows an early understanding of how to solve *put together with result unknown* problems and demonstrates weak explanation skills with incomplete reasoning. Student has difficulty counting and writing the numbers.	Student completes three of the four tasks. For example, student solves the *put together with result unknown* problem but cannot clearly explain his thinking. He correctly writes the numbers.	Student correctly: ▪ Solves the *put together with result unknown* problem using cubes. ▪ Explains his thinking, citing the solution process. ▪ Writes the number 9 and adds 1 more bear and says and writes *10*.

A Progression Toward Mastery

Topic G	Student shows little evidence of understanding *1 more* or is unable to complete the task.	Student shows evidence of beginning to understand that *1 more* is the next number in the counting sequence but requires support to recall and apply the concept.	Student accurately completes two of the tasks. For example, student identifies 5 as 1 more than the 4-dot card but is unable to identify 7 as 1 more than the numeral 6, and puts 7, 8, 9 in order. OR Student accurately identifies 7 as 1 more than the numeral 6 and identifies 1 more than the 4 dots but is unable to put the number cards in order.	Student correctly: ▪ Identifies the numeral 5 as 1 more than the 4 dots pictured on the dot card. ▪ Identifies 7 as 1 more than the numeral 6. ▪ Places 7, 8, and 9 in order.
K.CC.4a **K.CC.4b** **K.CC.4c** K.CC.2 K.CC.5				
Topic H **K.CC.4a** **K.CC.4b** **K.CC.4c** K.CC.5	Student shows little evidence of understanding organized counting, numeral writing, and matching concrete objects (dots) to the corresponding abstract numeral and/or cannot complete most of the tasks.	Student shows evidence of beginning to understand but miscounts. Student struggles with one-to-one correspondence. She might show 1 less but is confused and has difficulty counting and writing how many are left. She may or may not say and write *9*. Student is able to say and match dot cards to some of the hidden numbers but not all of them. When student turns over the hidden numbers, she moves the dot cards to the correct place but is unable to complete the task unless all the numbers are showing.	Student correctly counts and states that there are 10 objects, removes 1 when asked to show 1 less, and writes and says *9,* but struggles with counting and writing of the numeral 9. More time elapsed. Student touches the hidden numbers; correctly says *2, 5, 7, 9*; and correctly matches the dot cards to the number cards but recounts often and looks to the teacher for support. More time elapsed.	Student correctly: ▪ Gives 10 as an answer. Shows 1 less by removing 1 object and writes and says *9*. ▪ Identifies by touching the hidden number card and says *2, 5, 7, 9*. ▪ Matches the dot cards to her corresponding hidden number card. Turns over the number cards after the dot cards are in place.

Class Record Sheet of Rubric Scores: Module 1					
Student Names:	**Topic E:** Working with Numbers 6–8 in Different Configurations	**Topic F:** Working with Numbers 9–10 in Different Configurations	**Topic G:** *One More* with Numbers 0–10	**Topic H:** *One Less* with Numbers 0–10	**Next Steps:**

Module 1:   Numbers to 10

4   9

3   8

2   7

1   6

10   5

numeral and dot cards

K
GRADE

Mathematics Curriculum

Answer Key

GRADE K • MODULE 1

Numbers to 10

Lesson 1

Problem Set

Line drawn from big squirrel to little squirrel

Line drawn from little rabbit to big rabbit

Line drawn from big skunk to little skunk

Line drawn from dog facing left to dog facing right

Exit Ticket

Answers will vary.

Homework

Items colored the same: 2 birds; 2 trees; 2 plants

Lesson 2

Problem Set

Line drawn from cat walking to cat sitting

Line drawn from monkey with arms raised to monkey with hands on mouth

Line drawn from sheep to sheep with tongue out

Line drawn from bear turned left to bear sitting straight

Exit Ticket

Line drawn from heart in bold print to heart in regular print

Homework

Line drawn from blemished pear to unblemished pear

Line drawn from three-quarter circle to rotated three-quarter circle

Line drawn from 5-point star to 6-point star

Lesson 3

Problem Set

Line drawn from cup to plate

Line drawn from triangle to circle

Line drawn from pants to shirt

Line drawn from hat to hat

Basketball circled

Spoon circled

Paint palette circled

Exit Ticket

Line drawn from white hexagon to white circle

Line drawn from rectangle to triangle

Line drawn from small gray hexagon to bigger gray hexagon

Line drawn from oval to parallelogram

Shoes and socks circled

Answers will vary.

Homework

Answers will vary.

Lesson 4

Problem Set

Paper and pencil placed in Backpack column

Toy bear, ball, doll, and toy train placed in Toy Chest column

Exit Ticket

Cat, rabbit, and deer placed in one group

Bee and two birds placed in other group

Answers will vary

Homework

Toy bears placed in one group

Real bears placed in other group

Answers will vary

Lesson 5

Problem Set

Lines drawn from vase to 3 flowers

Lines drawn from refrigerator to apple, grapes, milk, hamburger

Lines drawn from house to bed, chair, lamp

Exit Ticket

Answers will vary.

Answers will vary.

Answers will vary.

Homework

Library book cart and librarian glued in Library row; 2

Scissors, school bus, colored pencils, book bag, and crayons glued in School row; 5

Pineapple, lemon, and shopping cart glued in Store row; 3

Lesson 6

Problem Set

3 smiley faces colored blue

3 triangles colored blue

4 smiley faces colored orange

2 arrows colored red

3 hearts colored blue

2 moons colored red

2 hearts colored red

3 triangles colored blue

4 stars colored orange

2 moons colored red

Exit Ticket

4 birds and 4 worms matched

3 nuts and 3 squirrels matched

2 rabbits and 2 carrots matched

Homework

2 treasure chest matched with 2 coins and 2 rings

3 treasure chest matched with 3 coins and 3 rings

4 treasure chest matched with 4 coins and 4 rings

Lesson 7

Problem Set

4 hearts colored red

3 bears colored brown

2 shoes colored blue

1 elephant colored black

2 gloves colored blue

5 stars colored yellow

3 silverware pieces colored brown

Exit Ticket

Box with number 5 colored

Homework

1 diamond colored black

2 triangles colored blue

3 circles colored brown

4 hexagons colored red

5 cubes colored yellow

1 diamond colored black

2 triangles colored blue

4 hexagons colored red

3 circles colored brown

Lesson 8

Problem Set

3; 1

5; 2

4; 4

4; 5

Exit Ticket

3

4

5

4

5

5

Homework

4

4

5

5

4

5

5

Lesson 9

Problem Set

3; 2 circles colored

3; 2 circles colored

4; 3 circles colored

5; 1 circle colored

Exit Ticket

3 dots circled; 1 not circled

3 dots circled; 2 not circled

3 dots circled; 1 not circled

3 dots circled; 2 not circled

3 dots circled; 1 not circled

3 dots circled; 2 not circled

Homework

3; 2 circles colored

3; 2 circles colored

4; 3 circles colored

5; 4 circles colored

Lesson 10

Problem Set

1 circle colored; 3

3 stars colored; 4

2 circles colored; 4

3 circles colored; 5

4 stars colored; 5

2 circles drawn and colored; 5

Exit Ticket

3 boxed; 3 dots circled

4 boxed; 3 dots circled

5 boxed; 3 dots circled

5 boxed; 3 dots circled

4 boxed; 3 dots circled

5 boxed; 3 dots circled

Homework

3 boxed; 3 circles colored

4 boxed; 3 circles colored

5 boxed; 3 circles colored

5 boxed; 3 circles colored

4 boxed; 3 circles colored

5 boxed; 3 circles colored

Lesson 11

Problem Set

Line drawn between 2 gray cubes and 1 white cube; 2 cubes drawn above 2; 1 cube drawn above 1

Line drawn between 1 white cube and 2 gray cubes; 1 cube drawn above 1; 2 cubes drawn above 2

Line drawn between 3 gray cubes and 1 white cube; 3 cubes drawn above 3; 1 cube drawn above 1

Line drawn between 1 white cube and 3 gray cubes; 1 cube drawn above 1; 3 cubes drawn above 3

Line drawn between 4 gray cubes and 1 white cube; 4 cubes drawn above 4; 1 cube drawn above 1

Line drawn between 1 white cube and 4 gray cubes; 1 cube drawn above 1; 4 cubes drawn above 4

Exit Ticket

2 green blocks and 1 yellow block drawn; 3 blocks counted

Homework

Answers may vary.

1 square colored one color; 4 squares colored a different color

5

Lesson 12

Practice Sheet

Practiced writing 0s

Problem Set

3; 2; 1; 0

0; 1; 2; 3

0

Exit Ticket

Answers will vary.

Homework

Line drawn between 3 space ships and number 3

Line drawn between 1 space ship and number 1

Line drawn between 2 planets and number 2

Line drawn between empty rectangle and number 0

0

1

Lesson 13

Practice Sheet

Practiced writing 1s, 2s, and 3s

Problem Set

3; 1

2; 2

2; 3

1; 0

0; 1

3 turtles; 0 cats; 2 fish; 1 dog

Exit Ticket

3; 1; 2; 0; 2

2; 0

1; 2

Homework

2 kitchen items drawn; 2

1 friend drawn; 1

3 toys drawn; 3

0

1, 0; 1, 2

Lesson 14

Problem Set

1 square colored one color, 2 squares colored another color; 3 = 1 + 2

2 squares colored one color, 1 square colored another color; 3 = 2 + 1

1 moon colored one color, 2 stars colored another color; 3 = 1 + 2

2 apples in tree colored one color, 1 apple falling colored another color; 3 = 2 + 1

1; 1; 2; 3

Exit Ticket

2 apples colored using one color, 1 apple colored using another color

3

2, 1

2, 1

Homework

1 shirt colored red, 2 shirts colored green; 3; 3, 2

2 balls colored yellow, 1 ball colored blue; 3; 3, 1

2 fruits drawn, 1 other fruit drawn; 3, 2, 1; 3, 2, 1

Lesson 15

Practice Sheet

Practiced writing 4s and 5s

1; 4; 5

5; 2; 1

3; 4; 5

Problem Set

4 watermelons circled; 4   4 oranges circled; 5

4 bananas circled; 4   4 strawberries circled; 5

4 apples circled; 4   4 pineapples circled; 5

Exit Ticket

4

5

Heart circled

4, 5

Homework

1, 3, 2

5, 4, 0

2, 4, 5

5, 4, 0

Lesson 16

Problem Set

Answers will vary.

1 circle drawn; 2 circles drawn; 3 circles drawn

1 X drawn; 2 X's drawn; 3 X's drawn; 4 X's drawn

Exit Ticket

2; 2; 4

4; 1; 5

Homework

3, 5; 4, 1

4, 0; 0, 3

3 red fish drawn, 1 green fish drawn

4

4; 3; 1

2 happy faces drawn, 3 sad faces drawn

5

5

2, 3

Lesson 17

Problem Set

1 cloud drawn; 3; clouds colored blue

1 face drawn; 4; faces colored red

1 heart drawn; 5; hearts colored yellow

1 triangle drawn; 6 circled; triangles colored green

6 fingers drawn

6 beads drawn

Exit Ticket

2, 4

4, 5, 2

Homework

4 trees colored

5 hexagons colored

6 bears colored

Line drawn from 6 dots to 6 crosses

Line drawn from 5 dots to 5 triangles

Line drawn from 4 dots to 4 faces

Lesson 18

Practice Sheet

Practiced writing 6s

Problem Set

6 beans colored; 6 beans colored

6 beans colored; 6 beans colored

1, 2, 3, 4, 5, 6

1

2

3

4

5

6

Exit Ticket

6 beads drawn

1, 3, 4, 6

Homework

6 circles colored; 5 stars colored

6 balloons circled

Lesson 19

Problem Set

5 moons colored; 5 suns colored

5 lightning bolts colored; 5 squares colored

5 circles colored; 2 circles drawn; 7

5 circles colored; 2 circles drawn; 7

Exit Ticket

5 squares colored; 2 squares colored

7

2

Homework

Line drawn to 3

Line drawn to 6

Line drawn to 4

Line drawn to 5

Line drawn to 7

4, 6

5, 3

2, 4, 6, 7

6, 4, 3

Lesson 20

Practice Sheet

Practiced writing 7s

Problem Set

7 beans colored, line drawn to connect each dot colored; 7 beans colored, line drawn to connect each dot colored

7 beans colored; 7 beans colored

2, 3, 4, 5, 6, 7

Exit Ticket

7 beads drawn on the circle

7 hearts colored

Homework

4

5

7

6

7; line drawn to each sun to show counted path

7; line drawn to each circle to show counted path

Lesson 21

Problem Set

5 ladybugs colored; 3 ladybugs colored a different color; 8

5 diamonds colored; 3 diamonds colored a different color; 8

5 circles colored; 3 circles drawn; 8

5 circles colored; 3 circles drawn; 8

4 ladybugs colored, 8; 4 rectangles colored, 8

5 circles colored; 3 circles drawn and colored; 8

Exit Ticket

4 squares colored red; 4 squares colored blue; 8

6 squares colored red; 2 squares colored blue; 8

Homework

4 squares colored blue; 4 squares colored yellow; 8

4 squares colored green; 4 squares colored brown; 8

4

6

7

8

5

Lesson 22

Practice Sheet

Practiced writing 8s

8 smiley faces colored; 8 smiley faces circled

Problem Set

Line drawn to show path; 8; 5 dots circled

Line drawn to show path; 8; 5 shapes circled

1–8 written on circles; 8 circles colored

1–8 written on shapes

Exit Ticket

8; line drawn to show path

8 shapes colored; line drawn to show path

Homework

8 beads drawn

8 triangles colored; line drawn to show path

8

5

6

5

4

Lesson 23

Problem Set

5 ladybugs colored; 4 more ladybugs colored a different color; 9

5 diamonds colored; 4 more diamonds colored a different color; 9

4 more circles drawn; 9

9 dots drawn; 5 dots circled as group

3 ladybugs colored; 9

3 rectangles colored; 9

2 circles drawn; rows colored; 9

Exit Ticket

5 shapes colored; 7

9; 8

Homework

9 shapes colored

9 shapes colored

9 shapes drawn

9 shapes drawn a different way

Lesson 24

Practice Sheet

Practiced writing 9s

9 smiley faces colored; 9 smiley faces circled

Problem Set

Lines drawn to connect the circles starting at 1

Dots numbered 1–9 a different way; lines drawn to connect circles starting at 1

Stars numbered from 1–9; 9

Objects numbered from 1–9; 9

9

9; group of 5 dots circled

4 more dots drawn in a circle to make 9; dots numbered 1–9

9 dots circled; 5 dots circled within the 9

Exit Ticket

9 shapes colored

9 beans drawn

Homework

Circles numbered 1–9

9 circles colored

9 beads drawn

9

Lesson 25

Problem Set

5 ladybugs colored; 5 more ladybugs colored a different color; 10

5 diamonds colored; 5 more diamonds colored a different color; 10

5 circles colored; 5 more circles drawn to right; 10

5 circles colored; 5 more circles drawn below; 10

5 ladybugs colored; 10

5 squares colored; 10

5 circles colored; 4 circles drawn to finish row; 5 circles on bottom row colored a different color; 10

Exit Ticket

5 circles drawn; 10

5 blocks colored blue; 5 blocks colored green; 10

Homework

9 squares colored; 1 square colored a different color

9 squares colored; 1 square colored a different color

5 squares colored; 5 squares colored a different color

10 circles drawn in a line; 5 circles colored red; 5 circles colored blue

5 circles drawn under the row of circles; 5 circles colored red; 5 circles colored blue

Lesson 26

Practice Sheet

Practiced writing 10s

Problem Set

10 circles drawn in a row; first 5 circles colored yellow, second 5 circles colored blue; 10

5 circles drawn in the gray part; 5 circles drawn in the white part; 10

2 towers of 5 drawn next to each other; 1 tower colored red; 1 tower colored orange; groups of 2 circled

Row of 5 cubes drawn; another row of 5 cubes drawn; 10

Picture of bracelet drawn on back

Exit Ticket

5 blocks colored red; 5 blocks colored green; 10

5 blocks colored brown; 5 blocks colored yellow; 10

Homework

5 triangles drawn in a row; 5 more triangles drawn in a row below; 10

10

7

Lesson 27

Problem Set

10; 1 shape colored

10 things drawn; 5 things colored; 5 things colored a different color

10 circles drawn; 5 circles colored; 5 circles colored a different color

Lines drawn from 1 to 10

Numbers 1–10 written in each apple a different way; lines drawn from 1 to 10

Exit Ticket

10 beads drawn on bracelet

Numbers 1–10 written in each shape; 10

Homework

5 clouds drawn

7 smiley faces drawn

Lesson 28

Problem Set

4 flowers colored red; 2 flowers colored purple; 6

6 donuts colored brown; 3 donuts colored pink; 9

4 shirts colored green; 3 shirts colored yellow; 7

5 gray marbles circled; 5 black marbles circled; 10

Answers will vary.

Answers will vary.

Exit Ticket

4

6 circles drawn; 4 triangles drawn; 10

Homework

Answers will vary.

Lesson 29

Problem Set

1; 2; 3; 4; 5

1 circle drawn; 2 circles drawn vertically; 3 circles drawn vertically; answer provided; 5 circles drawn vertically

1 balloon drawn, 5; 1 basketball drawn, 7

1 balloon drawn, 7; 1 basketball drawn, 9

Exit Ticket

3, 4

7, 10

Homework

6; 7; 8; 9; 10

Answer provided; 7 dots drawn vertically; 8 dots drawn vertically; 9 dots drawn vertically, 10 dots drawn vertically

Answers will vary.

Lesson 30

Problem Set

4; 5 squares colored; 7, 5 squares colored; 5 squares colored; 5 squares colored; 10, 5 squares colored

1, 1 square colored; 1 square colored; 2 squares colored; 3 squares colored; 4 squares colored; 6, 5 squares colored; 6 squares colored; 7 squares colored; 9, 8 squares colored; 9 squares colored

Exit Ticket

1 square drawn, 5; 1 square drawn, 8; 1 square drawn, 7; 1 square drawn, 3

Homework

1 square drawn, 1; 2; 3 squares drawn, 3; 4; 5; 6 squares drawn, 6; 7; 8 squares drawn, 8; 9; 10

Answers will vary.

1 more cube drawn on each stair

Lesson 31

Problem Set

9 circles colored orange, 1; 8 circles colored orange 2; 7 circles colored orange, 3

6 circles colored orange, 4; 5 circles colored orange, 5; 4 circles colored orange, 6; 3 circles colored orange, 7

2 circles colored orange, 8; 1 circle colored orange, 9; 10

5 circles colored blue, 1 circle drawn, 6; 8 circles colored blue, 1 circle drawn, 9

5 circles colored blue, 1 circle drawn, 6; 8 circles colored blue, 1 circle drawn, 9

Exit Ticket

6 stars colored blue, 1 star drawn and colored blue, 7

6 smiley faces colored red, 1 smiley face drawn and colored red, 7

Homework

1 square drawn, 10 squares colored, 10

1 cloud drawn, 9 clouds colored, 9

Lesson 32

Fluency

1 triangle drawn; 2	1 square drawn; 8
1 square drawn; 4	1 oval drawn; 8
1 oval drawn; 5	1 triangle drawn; 7
1 triangle drawn; 5	1 square drawn; 7
1 square drawn; 5	1 oval drawn; 9
1 oval drawn; 7	1 triangle drawn; 9
1 triangle drawn; 7	1 square drawn; 9
1 circle drawn; 7	1 triangle drawn; 10

Problem Set

7 missing steps drawn, 7; 8 missing steps drawn, 8; 9 missing steps drawn, 9

4; 5 triangles drawn; 6 triangles drawn

6; 7 triangles drawn; 8 triangles drawn

8; 9 triangles drawn; 10 triangles drawn

Exit Ticket

4, 5, 8, 9, 10

3 apples drawn; 4 apples drawn

Homework

1, 3, 4, 5, 8, 9

1 more X or O drawn to show 1 more

Answers will vary.

Lesson 33

Problem Set

10, 9, 8, 7, 6

10 dots drawn vertically; 9 dots drawn vertically; 8 dots drawn vertically; 7 dots drawn vertically; answer provided

5, 4, 3, 2, 1

5 dots drawn vertically; answer provided; 3 dots drawn vertically; 2 dots drawn vertically; 1 dot drawn vertically

1 balloon crossed off, 3; 1 basketball crossed off, 5

1 balloon crossed off, 5; 1 basketball crossed off, 7

Exit Ticket

Line drawn from 10 snails to numeral 10

Line drawn from 8 turtles to numeral 8

Line drawn from 9 shells to numeral 9

Line drawn from 6 turtle shells to numeral 6

Line drawn from 4 fish to numeral 4

Line drawn from 3 turtles to numeral 3

Line drawn from 2 corals to numeral 2

Line drawn from 1 fish to numeral 1

Homework

5-group cards completed per instructions

Lesson 34

Problem Set

Robots glued on 5-group mat as described in the story read to students

Exit Ticket

4; 3; 3 apples colored

5; 6; 5 hearts colored

Homework

10 triangles colored, 10; 9 triangles drawn, 9

7 pears colored, 7; 6 pears drawn, 6

Lesson 35

Problem Set

5 gray cubes colored orange, 10; 5 gray cubes colored orange, 9; 5 gray cubes colored orange, 8; 5 gray cubes colored orange, 7; 5 gray cubes colored orange, 6; 5 gray cubes colored orange, 5; 4; 3; 2; 1

1 cube crossed off, 9; 1 cube crossed off, 8; 1 cube crossed off, 7; 1 cube crossed off, 6; 1 cube crossed off, 5; 1 cube crossed off, 4; 1 cube crossed off, 3; 1 cube crossed off, 2; 1 cube crossed off, 1; 1 cube crossed off, 0

Exit Ticket

9, 8, 7, 6, 5, 4, 3, 2, 1, 0

Homework

Towers drawn; top cube crossed off in each tower

9, 8, 7, 6, 5, 4, 3, 2, 1, 0

Lesson 36

Problem Set

8; shaded circle crossed out; 7

9; shaded arrow crossed out; 8

6; one object crossed out; 5

6; one object crossed out; 5

10; 9 dots drawn, 9

9; 8 dots drawn, 8

Exit Ticket

8, 7, 6, 3, 2, 1

7

6 smiley faces drawn, 6

Homework

9 beads drawn on bracelet

8 beads drawn on bracelet

7 beads drawn on bracelet; 8

4 beads drawn on bracelet

3 beads drawn on bracelet

2 beads drawn on bracelet; 3

10, 9, 6, 5, 4, 0

Lesson 37

Homework

7; 8; group of 7 circled

10; 9; group of 9 circled

10; 9; group of 9 circled

Answers will vary.