Eureka Math™

Grade PK, Module 1

Teacher Edition

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Grade PK • Module 1

Counting to 5

OVERVIEW

Module 1 capitalizes on the energy and excitement young students have as they enter their first day of Pre-K by providing a playful and active, yet carefully sequenced structure through which children progress.

In this module, we set up a friendly learning environment in which children have sustained interaction with four core ideas, collectively referred to as the number core (**PK.CC.1–4**):

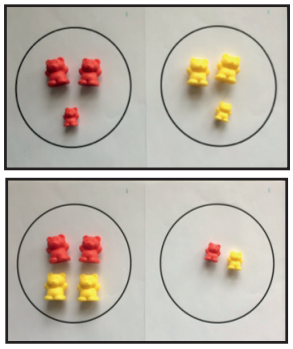
Rote counting (the number word list, i.e., one, two, three…)

One-to-one correspondence (one object paired with one number word)

Cardinality (how many in a set)

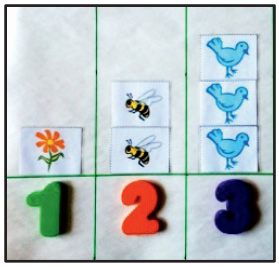
Written numerals

Throughout the module, children have experiences that help them make critical connections between these four understandings.



In Topics A and B, students begin exploring the number word list and one-to-one correspondence with quantities to 3. However, their primary learning in these topics is a series of matching and sorting activities that allows them to focus on the attributes of objects (**MP.6**) and articulate their observations (**MP.3**). In Topic A, children match concrete objects in multiple ways using specific vocabulary, e.g., *exactly the same*, *the same, but…*, to describe their thoughts. In Topic B, children sort objects into groups using given attributes such as color, shape, size, and texture (**PK.MD.2**). This topic lays the foundation for understanding, forming, and counting sets of objects, which leads to the *how many* questions introduced in Topic C.

Topics C and D support children in making connections between the four aspects of the number core. Topics A and B ask students to say the number names in standard order when counting, pairing each object with one and only one number name (**PK.CC.3a**). Topic C's *how many* questions require students to incorporate cardinality, understanding that the last number name said tells the number of objects counted (**PK.CC.3b**). Children begin to generalize this knowledge as they use one-to-one correspondence to count a set of 3 objects in scattered and linear configurations (**PK.CC.4**).



In Topic D, children begin to match quantities of 1 to 3 objects to a numeral (**PK.CC.2**). They work with prewritten numerals as they build the fine motor skills necessary to start writing numerals in later modules. Children also practice counting out a specified number of objects (up to 3) by matching them to an existing set. Initially, they do this by counting a group of craft sticks to match a group of dots. This practice prepares them to count out a group of objects by hearing or seeing the numeral (**PK.CC.4**). The Mid-Module Assessment is given after Topic D, during which each child is interviewed and observed to determine how well she understands sorting, making groups, and counting to 3.

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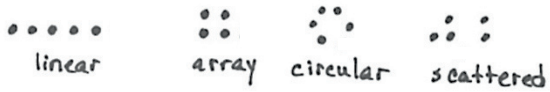
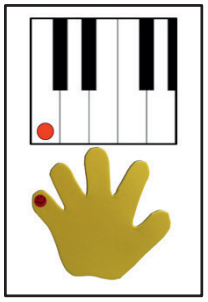
Topics E and F mimic Topics C and D, extending children's understanding of the number core to quantities of 4 and 5. They practice strategies for counting array, circular, and scattered configurations, tracking their counting paths to ensure one-to-one correspondence (**PK.CC.4**).

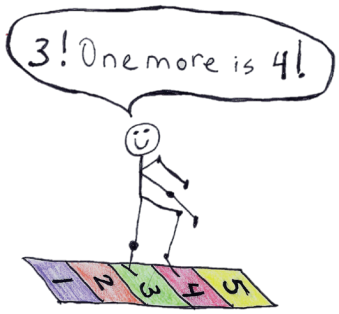


They also learn to count the Math Way, starting with the left pinky finger and moving toward the thumb, using a piano template (shown on right). Playing the piano in this way prepares them to count 6, 7, 8, 9, 10, beginning with the right thumb and continuing to the right pinky. Also, in counting the Math Way on the piano, students see the number of fingers increase as they count from 1 to 5, moving from left pinky to thumb without interruption. This provides a foundation for understanding the number path and number line, on which numbers also increase from left to right. Internalization of the number line develops multiple areas of number sense and facilitates future work with operations.

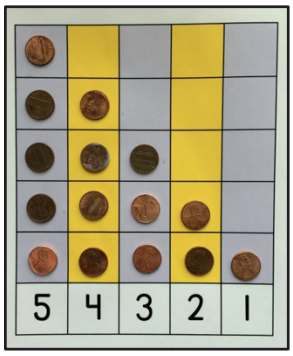


Throughout Topics E and F, children have opportunities to find smaller numbers embedded within larger numbers (e.g., 1 and 3 are inside 4). This precursor to composition and decomposition of numbers prepares students to work with addition and subtraction later in the year.

In Topic G, students use their skill with rote counting and their subsequent knowledge of number names to find the pattern of *1 more* as they build number stairs for quantities 1–5, recognizing that each successive number name refers to a quantity that is one larger (**PK.CC.4d**). They learn to look at the numbers 1–4 and to answer "What is 1 more?" and "What comes after?" (**PK.CC.1–4**, **PK.OA.2**). This also enables students to connect counting sequences to quantities and to understand the *1 more* pattern using concrete objects.



In Topic H, children break down a tower of 5, removing one cube at a time while counting backwards (**PK.OA.2**). Topics G and H help students build an understanding of the relationships between numbers and the pattern embedded in the counting sequence. These important insights will serve as the basis for counting on in Grade 1.



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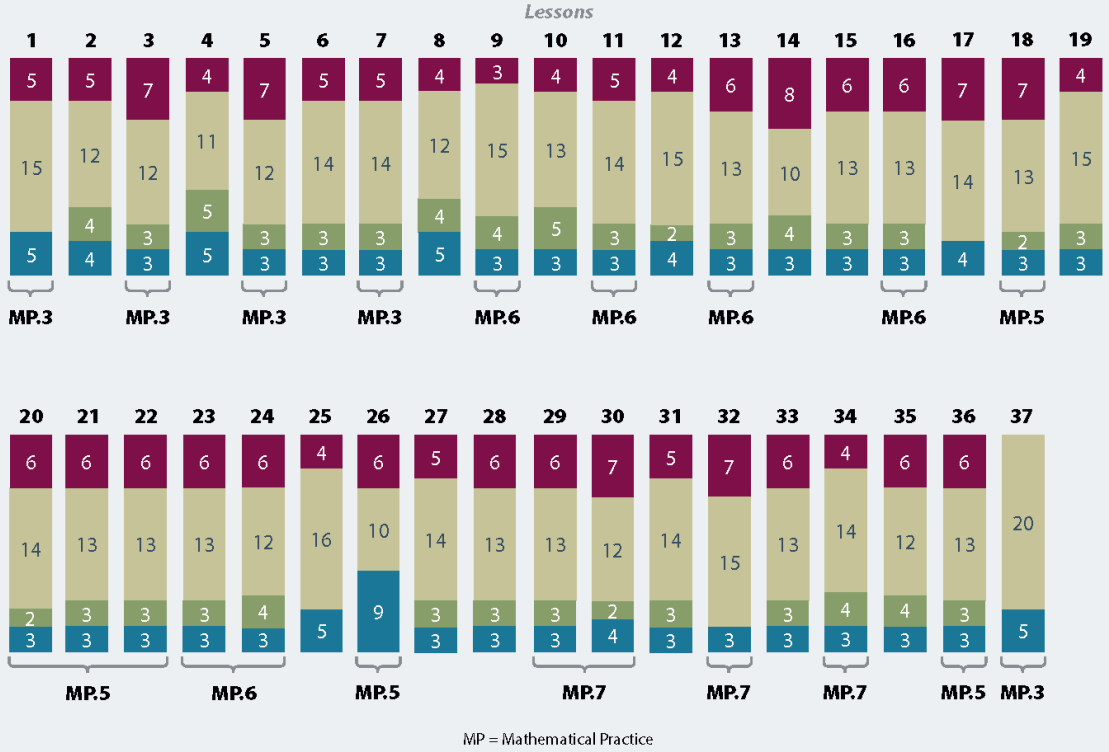
Distribution of Instructional Minutes

This diagram represents a suggested distribution of instructional minutes based on the emphasis of particular lesson components in different lessons throughout the module.

- Fluency Practice
- Concept Development
- Application Problems
- Student Debrief



MP = Mathematical Practice

Focus Grade Level Standards

Know number names and the count sequence.

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).

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Count to tell the number of objects.[1]

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.

Understand simple patterns.

PK.OA.2 Duplicate and extend (e.g., what comes next?) simple patterns using concrete objects.

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

PK.MD.2 Sort objects into categories; count the number of objects in each category (limit category counts to be less than or equal to 10).

Focus Standards for Mathematical Practice

MP.3 **Construct viable arguments and critique the reasoning of others.** Students begin to describe their choices for matching and sorting. They can briefly articulate the reasons why objects match or belong in a particular group.

MP.5 **Use appropriate tools strategically.** Students use objects to model situations and then count to tell how many.

MP.6 **Attend to precision.** Students hone their observation skills by attending to and describing the specific characteristics shared by members of a group. Through repeated practice, they become more precise in describing the cardinality of a group and counting out a specific number of things.

MP.7 **Look for and make use of structure.** Students notice that as they build number stairs for numbers 1–5, there is 1 more cube in each successive number. They also notice the pattern of 1 less as they count backward from 5, removing one cube at a time.

[1]Within 5.

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Overview of Module Topics and Lesson Objectives

Standards		Topics and Objectives	Days
PK.MD.2 PK.CC.1	A	**Matching Objects** Lesson 1: Match 2 objects that are *exactly the same*. Lessons 2–3: Match 2 objects that are *the same, but….* Lesson 4: Match 2 objects that are used together.	4
PK.MD.2 PK.CC.1	B	**Sorting** Lesson 5: Make one group with a given attribute. Lesson 6: Sort into two groups. Lesson 7: Sort the same group of objects in two different ways.	3
PK.CC.1 **PK.CC.3ab** **PK.CC.4** PK.MD.2	C	***How Many* Questions with 1, 2, or 3 Objects** Lesson 8: Count up to 3 objects. Lessons 9–10: Arrange and count up to 3 objects in scattered and linear configurations. Lesson 11: Arrange and count up to 3 objects to play a game.	4
PK.CC.2 **PK.CC.3ab** **PK.CC.4** PK.CC.1	D	**Matching 1 Numeral with up to 3 Objects** Lesson 12: Match the numerals 1, 2, and 3 to quantities. Lesson 13: Make a group of up to 3 objects and match the numeral (concrete to abstract). Lesson 14: Look at a numeral and count out a group of objects to match (abstract to concrete).	3
		Mid-Module Assessment: Topics A–D (interview style assessment, 4 days)	4
PK.CC.1 **PK.CC.3ab** **PK.CC.4** PK.MD.2	E	***How Many* Questions with 4 or 5 Objects** Lessons 15–16: Arrange and count up to 5 objects in scattered and linear configurations. Lesson 17: Count fingers on the left hand from 1 to 5. Lesson 18: Arrange and count 4 objects in an array configuration. Lesson 19: Find embedded numbers within 4 and 5 objects. Lesson 20: Arrange and count 5 objects in a circular configuration.	6

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Standards		Topics and Objectives	Days
PK.CC.2 **PK.CC.3ab** **PK.CC.4**	F	**Matching 1 Numeral with up to 5 Objects** Lesson 21: Count up to 4 objects and match the numerals. Lesson 22: Count up to 5 objects and match the numerals. Lesson 23: Make a group of up to 5 objects and match the numeral (concrete to abstract). Lesson 24: Look at a numeral and count out a group of objects to match (abstract to concrete). Lessons 25–26: Represent numbers 1–5 using objects, pictures, and numerals. Lesson 27: Play a game involving numbers to 5.	7
PK.CC.3c **PK.OA.2** PK.CC.2 PK.CC.5	G	***One More* with Numbers 1 to 5** Lesson 28: Count 1, 2, 3, 4, 5 with stories. Lesson 29: Find *1 more*. Lesson 30: Build a tower by putting *1 more* cube or block at a time. Lesson 31: Build number stairs showing *1 more* with cubes. Lesson 32: Count up—*What comes after?*	5
PK.CC.3c **PK.OA.2** PK.CC.2 PK.CC.5	H	**Counting 5, 4, 3, 2, 1** Lessons 33–34: Build descending number stairs at the concrete and pictorial levels. Lessons 35–36: Count 5, 4, 3, 2, 1 using a story and the fingers of the left hand. Lesson 37: Culminating task—sort objects by use and count each group; represent one group with a number tower and numeral.	5
		End-of-Module Assessment: Topics E–H (interview style assessment, 4 days)	4
Total Number of Instructional Days			**45**

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Fluency

New Fluency Topics Appearing in Module 1 Instruction

- Count 1–5 in different formations
- Count one-to-one within 5
- Make a group of 1 to 5 objects
- Rote count to 5
- Within 5, find 1 more or 1 less

Terminology

New or Recently Introduced Terms

- 1 less (e.g., 1 less than 4 is 3)
- 1 more (e.g., 1 more than 4 is 5)
- After (position word)
- Count (with reference to use of number core)
- Counting the Math Way (count fingers from left pinky to right pinky)
- Different (characteristic used to analyze objects to match or sort)
- Exactly the same (characteristic used to analyze objects to match or sort)
- Group (objects sharing one or more attributes)
- How many (with reference to counting quantities or sets)
- Line (with reference to counting configuration)
- Mark (with reference to starting point for count)
- Match (group items that are the same or that have the same given attribute)
- Number (numeral)
- One, two, three, four, five, six, seven (number words)
- Partners (embedded numbers)
- Size (generalized measurement term)
- Sort (group objects according to a particular attribute)
- The same, but… (characteristic used to analyze objects to match or sort)

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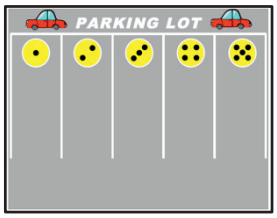
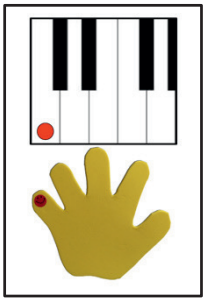
Suggested Tools and Representations

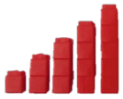
- 5-group strips
- Concrete materials (e.g., linking cubes, blocks, bear counters, plastic animals, pennies, etc.)
- Dot cards, 1–5
- Large dice with dots, 1–5
- Matching mat
- Number stairs
- Number tower
- Numeral cards, 1–5
- Parking lot template
- Piano mat
- Sets of numerals to 5 (cardboard, foam, etc.)
- Sorting mat



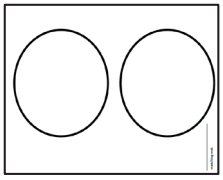
Parking Lot Template

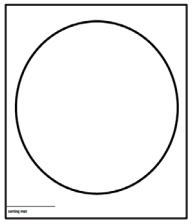
5-group Strip


Piano Mat


Number Stairs

Number Tower


Matching Mat


Sorting Mat

Suggested Methods of Instructional Delivery

Aligning *A Story of Units* Math Modules with ELA Domains

The sequence of learning in *A Story of Units* is carefully constructed to develop deep understanding of the key foundational math content for each grade, as described by the Common Core State Standards. Research in early mathematics learning suggests teaching and learning paths appropriate for early childhood programs.[2] The Pre-K math modules are sequenced based on this research. Where appropriate, math instruction incorporates aspects of the domains of the Pre-K Core Knowledge Language Arts. However, the primary driver of the curriculum is the sequence of math learning that will prepare children for success in subsequent grades.

Language Facilitation in Math

Language development occurs throughout the Pre-K day, and math time is no exception. The Pre-K math modules utilize the language stimulation and support techniques described in "Core Knowledge Language Arts Pre-K General Overview" to support consistency in language development.

- **Comments:** Effective use of teacher comments can stimulate discussion. *"You have three yummy green grapes." "You drew your tally marks next to each other."*
- **Self-Talk:** Teachers tell students what they are doing, observing, or thinking to model the types of language and vocabulary needed for specific math situations. *"I need to count these bears. I'm going to put them in a line so they are easier to count: 1, 2, 3, 4, 5."*

[2] The National Research Council's *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity* describes teaching–learning paths appropriate for children from age two through Grade 1.

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- **Labels and Object Descriptions:** Children need support naming and describing objects and actions used in math instruction. *"This group has large bears. That group has small bears."*
- **Open Questions:** With appropriate scaffolding, open questions give children an opportunity to express their own thoughts about math. Responses comprised of complete sentences are welcome, but not demanded. *"Can objects be sorted in more than one way?" "Yes!" "Yes! We sorted by color and by size."*
- **Parallel Talk:** Describe what children are saying or doing to model language and vocabulary appropriate to the situation. *"Ethan is making a group of things to take to school. He is sorting by use."*
- **Expansion:** By expanding a child's idea into a sentence or phrase, teachers help children build the capacity to express complete ideas. *Child: "3." Teacher: "You have 3 bears?"*
- **Repetition:** Teachers use repetition to help children understand the rules of language (articulation, pronunciation, vocabulary, syntax, and grammar). *Child: "The twiangle has three pointy parts." Teacher: "Yes, the triangle has three corners."*
- **Modeling:** In *A Story of Units,* teachers ask children to repeat key questions and phrases or provide sentence stems to help children express mathematical ideas. *Guide Partner B to ask, "How many _____ (cows, pigs, etc.) did you count?" Partner A responds, "I counted 4 _____ (cows, pigs, etc.)."*

Scaffolds[3]

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*."

[3] 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

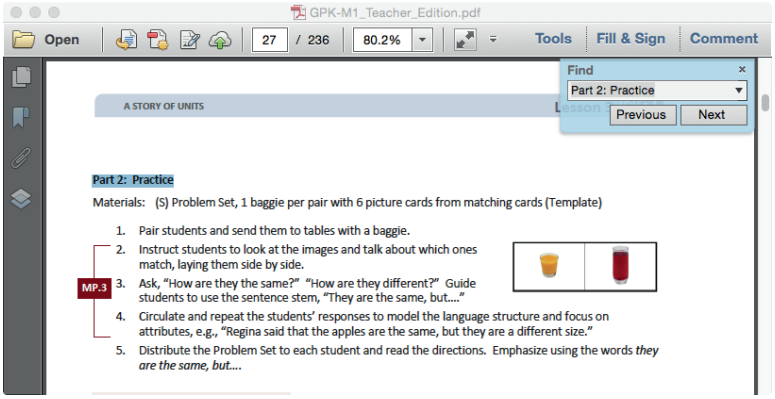
Preparation of lessons will be more effective and efficient if there has been an adequate analysis of the module first. Each module in *A Story of Units* can be compared to a chapter in a book. How is the module moving the plot, the mathematics, forward? What new learning is taking place? How are the 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 Concept Development Part 2: Practice portions of the module's lessons[4] to see the trajectory of the module's mathematics and the nature of the work students are expected to be able to do.

Note: If you are studying a PDF file, enter "Part 2: Practice" into the search feature to navigate from one Practice to the next.



Step 2: Dig into the details.

A: Dig into a careful reading of the Module Overview. As you read the narrative, *liberally* reference the lessons and Topic Overviews one paragraph at a time (or at times one sentence at a time) 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? Make notes on new complexities.

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.

[4]This same process can be used to preview the coherence or flow of any component of the curriculum, such as the Fluency Practice or Application Problems.

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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 objective in the teaching sequence. As A Story of Units moves into the elementary grades, the ladder is also evident between selected problems, 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. In Pre-K, new complexities are generally evidenced between objectives as opposed to within the selected problems in each lesson, as is the case in later grades.

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 Concept Development Part 2: Practice of each lesson in the topic.

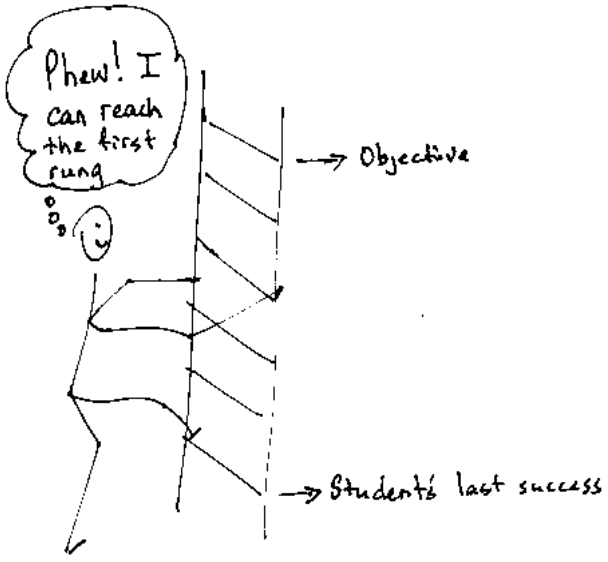
C: Review the assessment tasks for the topic, keeping in mind that assessments can be found midway through the module and at the end of the module.

Step 2: Find the ladder.

A: Gather the necessary materials, and do the actions of the Concept Development (Concept Introduction and Practice) for each objective (lesson) in the topic and adjacent topics as necessary (e.g., if preparing the first lesson of a topic, return to the last lesson of the prior topic in order to make sense of the rungs between the lessons).

B: Analyze and write notes on the new complexities of each objective in the topic (e.g., smaller to larger numbers, simple to challenging configurations, concrete to pictorial to abstract). 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.

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Step 3: Hone the lesson.

At times, the lesson and the accompanying materials 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 create sets of materials that allow students to move through the concept from simple to complex.

A: Having anticipated where students might struggle or need an extra challenge, identify appropriate customizations as detailed in the chart below.

Anticipated Difficulty	Customization Suggestion
The task of the Practice is too challenging.	Depending on the Practice task, consider using smaller quantities, different colors, or templates to support students working independently on the task. Once students feel confident in the task, remove the scaffolds. For example, if the task is to count 9 cubes, use 3 red, 3 yellow, and 3 blue cubes instead of mixed colors or all one color.
There is too big of a jump in complexity between two lessons.	Provide workstations for students to visit that repeat skills and objectives students have previously learned. For example, if students have trouble counting with one-to-one correspondence with numbers above 5, provide the supportive structure of a cropped egg carton with 10 slots to bridge to the task.
Students lack fluency or foundational skills necessary for the lesson.	Before beginning independent work on a Practice task, do a quick, engaging fluency exercise. Before beginning any fluency activity for the first time, assess that the sequence of questions begins by developing the concept at the simplest level before advancing.
More work is needed at the concrete or pictorial level.	Create sets of materials that allow students more practice with manipulatives or pictures before moving to a more complex skill. For example, continue to work with counters in a circle before asking students to count images printed in a circular configuration.
More work is needed moving from abstract to concrete or abstract to pictorial.	Hone the Practice to reduce the amount of drawing or use of manipulatives as appropriate for certain students or the whole class. For example, students who have already mastered counting a group and matching a numeral can be given a numeral and asked to create a matching group.

B: Adjust the Practice to reflect the customizations or to address scheduling constraints. Create sets of extension materials for students who work with greater fluency and understanding and who, therefore, can complete more work within a given time frame.

C: 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 in their Practice.

D: Pay close attention to the questions chosen for the Student Debrief. Regularly ask students, "What math are we learning today?" "Could you teach what you learned to someone else?" Help them articulate the goal to encourage metacognition and use of vocabulary.

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Assessment Summary

Assessment Type	Administered	Format	Standards Addressed
Mid-Module Assessment Task	After Topic D	Interview with rubric	PK.CC.1 PK.CC.2 PK.CC.3ab PK.CC.4 PK.MD.2 *Numbers 1–3
End-of-Module Assessment Task	After Topic H	Interview with rubric	PK.CC.1 PK.CC.2 PK.CC.3abc PK.CC.4 PK.OA.2 *Numbers 1–5
Culminating Task	Lesson 37	Sort objects by use and count each group; represent one group with a number tower and numeral.	PK.CC.2 PK.CC.3abc PK.CC.4 PK.MD.2

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Grade PK • Module 1 • Topics A–D

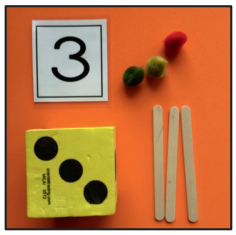
Family Math Newsletter

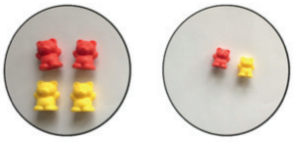
Welcome to the World of Pre-K Math!

Throughout the year, you will receive letters highlighting the age-appropriate mathematical ideas that your preschooler is learning. These ideas are foundational to the way we understand and analyze the world. Each letter includes a summary of what your child is learning, key vocabulary terms, and ways you can provide support and make connections at home.

Numbers to 5

In the first half of Module 1, children match and sort objects based on their attributes (e.g., color, size, use). Along the way they are shown as many as three objects and asked, "How many?" Touching one object at a time, they count to find the total, and match the count to a numeral.





Sorting by size

This group has big bears.
That group has small bears.

Key Standards

- **Know number names and the count sequence.**
- **Count to tell the number of objects.**
- **Sort objects and count the number of objects in each category.**

For more information about the New York State Prekindergarten Foundation for the Common Core, visit http://www.p12.nysed.gov/ciai/common_core_standards/pdfdocs/nyslsprek.pdf.

Words and Key Terms

Matching/Sorting

- Different
- Exactly the same
- Group
- Match
- Size
- Sort
- The same, but…

Other Vocabulary and Terms

- Count
- How many?
- Line
- Number

How to Help at Home

- Have your child help with household chores that require matching or sorting, such as matching socks in the laundry, organizing shoes, or collecting utensils for meals. As your child matches objects, ask questions like, "How do they match?"
- Play I Spy together to continue developing vocabulary around size, shape, color, and texture. For instance, seeing a banana, you might say, "I spy something yellow and smooth."
- Identify and count parts of your body, noticing if there is a matching body part (1 ear, 2 ears) or just 1 body part (1 nose).
- Touch and count three objects together. At the grocery store, count, "1, 2, 3. We need 3 apples."

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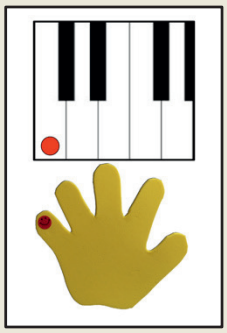
Spotlight on Math Models

A math model is a way to represent math concepts such as numbers, relationships between numbers, measurement, or geometry. In Pre-K, students use physical models, such as counting the Math Way on fingers, as well as math drawings to engage with math concepts in a way that is appropriate for young children.

A Story of Units has key mathematical models that will be used throughout a student's elementary years. Introducing children to appropriate models in Pre-K sets a foundation for success in elementary school and beyond.



Sample Chant
(from Module 1, Lesson 4)

Students point to the parts of the body as they say the chant.

I Have 2 Chant

I have 2.
1, 2.

I have 2.
1, 2.

I have 2.
1, 2.

I have 2.
1, 2.

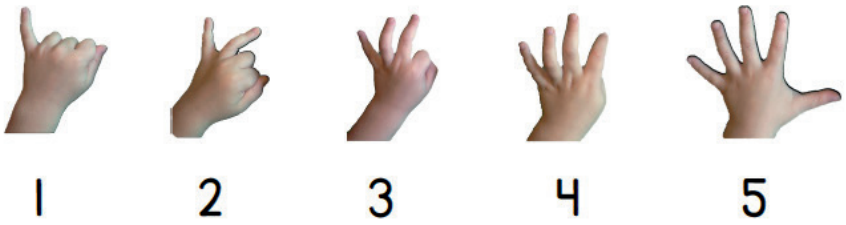
I have 2.
1, 2.

Yahoo! And so do you!

In this activity, students extend their understanding of matching to recognize that they have two parts of their body that are "the same but...."

Counting the Math Way

In the second half of Module 1, children learn to count from 1 to 5 the Math Way, starting with the left pinky finger and moving toward the thumb.



In counting the Math Way, students see the number of fingers increase as they count from 1 to 5, moving from left pinky to thumb without interruption. Counting in this way orients the count from left to left, in exactly the same way that the number line is usually drawn. Unfortunately, the traditional way of counting by starting with the index finger and ending with the thumb does not give a sense of direction consistent with written math conventions.

Counting the Math Way provides a foundation for understanding the number path and number line, which by convention, usually are drawn so that they increase from left to right. This builds number sense and prepares children for future work with addition and subtraction.

Children begin counting the Math Way using the piano template pictured above, dropping their fingers as they count. Throughout the year, students will learn to lift their fingers to count the Math Way.

In Module 3, students count from 6 to 10 the Math Way, beginning with the right thumb through to the right pinky. By the end of the year, Pre-K students count to 10 on their fingers, moving from the left pinky to the right pinky.

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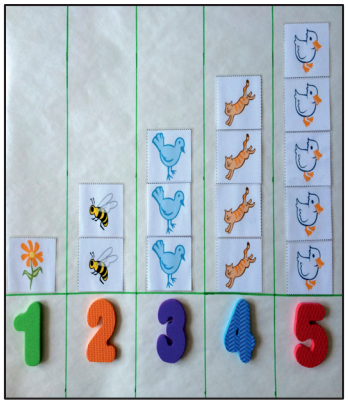
Grade PK • Module 1 • Topics E–H

Family Math Newsletter

Numbers to 5

In the second half of Module 1, children touch and count groups of up to five objects arranged in different ways. They learn to match their count to a numeral 1–5. Children also see patterns in the counting sequence. When counting forward, they see each number is 1 more: One. One more is 2. Two. One more is 3.



We will count the number of people in our families. Please send a photograph of your family for our project.

REMINDER: Send in by _____

Key Standards

- Know number names and the count sequence.
- Count to tell the number of objects.
- Understand that each successive number name refers to a quantity that is 1 larger.

Looking Back

We learned to sort and practiced touching and counting groups of up to three objects.

Looking Ahead

In Module 2, children identify, describe, and build shapes.

How to Help at Home

- Touch and count up to five objects together. At snack time, say, "1, 2, 3, 4, 5. You have 5 crackers." Move the crackers into a line or a circle and count again.
- Buy or make a set of numerals 1–5 (paper, foam, or magnets work well). When getting dressed, ask, "Which number shows how many shoes you are wearing?"
- Point out and name numerals in everyday experiences. While riding an elevator, ask, "Which button has the number 4?"
- Sing songs that involve counting forward or back, such as "The Ants Go Marching," "This Old Man," "Five Little Ducks Went Out to Play," or "Five Little Monkeys Jumping on the Bed."

Words and Key Terms

Vocabulary

- After
- Count
- Group
- Line
- Number
- Sort

New Terminology

- 1 more
- 1 less
- The Math Way (count on fingers from left pinky to right pinky)
- How many?
- Mark (show start of counting path)

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Spotlight on Math Models

A Story of Units has key mathematical models that are used throughout a student's elementary years. One of these models is the number stair, a tool students use to model the patterns of 1 more and 1 less in the count sequence.

Sample Song
(from Module 1, Lesson 29)

The Ants Go Marching

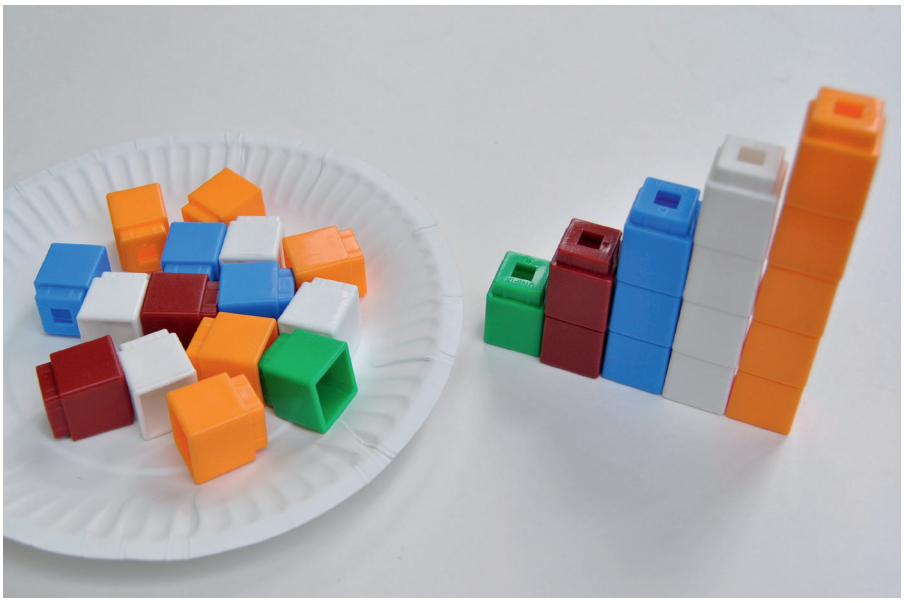
The ants go marching 1 by 1.
Hoorah! Hoorah!
The ants go marching 1 by 1.
Hoorah! Hoorah!
The ants go marching 1 by 1;
The little one stops to suck his thumb,
And they all go marching down, to the ground,
To get out of the rain.
BOOM! BOOM! BOOM!

Repeat with numbers 2–5:
2…tie a shoe
3…climb a tree
4…shut the door
5…take a dive

By participating in a story situation in which ants join the group one by one, students begin to experience a growth pattern, or a pattern of 1 more, in a fun way.

Number Stairs

Students have already used number towers (joined linking cubes) to work with numbers 1 to 5. At the end of Module 1, children create number towers for numbers 1 to 5 and place them in order to create number stairs.



Number stairs make it easy for children to see that each successive number in the count sequence is 1 more: "One. One more is 2. Two. One more is 3…." Conversely, as they count back from 5 (5, 4, 3, 2, 1) children see the *1 less* pattern represented in the number stairs.

This understanding sets the stage for children to understand adding 1 and subtracting 1, which they will begin to explore at the end of the year. It is also a prerequisite skill for the *counting on* strategies used in Grade 1.

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Topic A

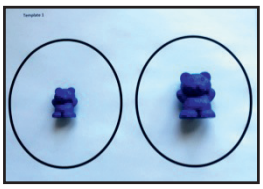
Matching Objects

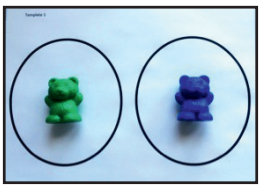
PK.MD.2, PK.CC.1

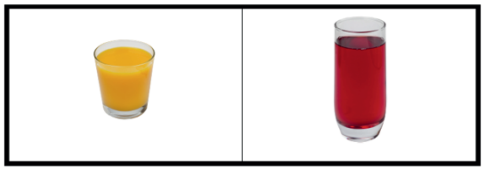
Focus Standard:	PK.MD.2	Sort objects into categories; count the numbers of objects in each category (limit category counts to be less than or equal to 10).
Instructional Days:	4	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M3	Comparison of Length, Weight, Capacity, and Numbers to 10

In Topic A, children learn to match concrete objects with common attributes. By observing an object's attributes, children can begin to explore similarity between two objects. In the first lesson, children match two items that are *exactly the same*.

Lessons 2 and 3 introduce the concept of *the same, but…*, as children expand their understanding of matching. In Lesson 2, children match 2 bears that are *the same* color *but* different sizes. Using the same set of bears, they then match bears that are *the same* size *but* different colors. Lesson 3 pushes this thinking forward as students match images that are *the same, but…,* pairing a small glass of orange juice with a tall glass of cranberry juice.







In the final lesson, students extend their understanding of matching to include items that are used together. As children make pairs based on given attributes, they describe how the objects match using their new vocabulary and math words (**PK.CC.3, PK.MD.2**). This lays the foundation for later work with geometry and attributes.

Throughout Topic A, children develop fluency with counting to 2 and matching objects. The use of engaging chants and simple games with movement allows children to count small quantities with excitement and success.

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A Teaching Sequence Toward Mastery of Matching Objects	
Objective 1:	**Match 2 objects that are *exactly the same*. (Lesson 1)**
Objective 2:	**Match 2 objects that are *the same, but…*. (Lessons 2–3)**
Objective 3:	**Match 2 objects that are used together. (Lesson 4)**

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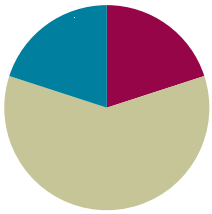
Lesson 1

Objective: Match 2 objects that are *exactly the same*.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Concept Development	(15 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**



Fluency Practice (5 minutes)

- Count to 2 Chant **PK.CC.3a** (5 minutes)

Count to 2 Chant (5 minutes)

Note: Modeling the number 2 with index fingers on each hand, clapping, and linking arms with a partner prepares students for the matching activities in today's lesson. Only one fluency activity is included in today's lesson to allow for ample time to teach the new activity and build routines for math.

T: I want to teach you a counting chant. Listen: 1, 2, I count 2. Let me hear you say that.

S: 1, 2, I count 2 (no motions yet).

T: Very good. Now, let's use our fingers, like this: 1 (show one index finger), 2 (show the other index finger), I count 2.

S: 1 (one index finger), 2 (the other index finger), I count 2.

T: Great! Here's the next step: 1 (clap), 2 (clap), I clap 2.

S: 1 (clap), 2 (clap), I clap 2.

T: We end our chant like this: 1, 2, me and you. (Demonstrate how to link arms with the person beside you.)

S: 1, 2, me and you. (Link arms with a partner.)

T: Let's put it all together now.

T/S: 1, 2, I count 2 (no motions).
1 (one index finger), 2 (the other index finger), I count 2.
1 (clap), 2 (clap), I clap 2.
1, 2, me and you. (Link arms with a partner.)

Repeat the chant a few more times.

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. (For example, students must be secure in rote counting to 5 before they can count with one-to-one correspondence.)

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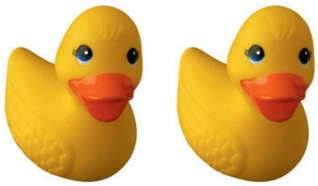
Concept Development (15 minutes)

Part 1: Concept Introduction

Materials: (T) 2 pairs of identical objects



Seat children in a circle on the rug.

1. Show two identical objects, such as a pair of rubber ducks.
2. Use self-talk to describe the two identical objects: "Look at these! I see two ducks. They are both yellow. They are both little. They are ***exactly the same***! They **match**!"
3. Lead students in repeating, "They are exactly the same."
4. Encourage students to think of other ways the objects are exactly the same. If needed, draw their attention to size, color, and shape.
5. Repeat this process, showing two more identical objects, such as teddy bear counters. Ask students, "What can you tell me about these?" and lead them to use the sentence stem, "They are both...."

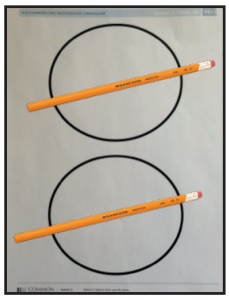
NOTES ON SUPPORTING LANGUAGE DEVELOPMENT:

Pre-K children are learning vocabulary at a rapid rate. New math vocabulary is highlighted as it is introduced; however, students may need support with foundational vocabulary (e.g., size, color names). Use concrete objects or motions when developing vocabulary with young children.

Part 2: Practice

Materials: (T) 2 unsharpened pencils, matching mat (Template)
(S) Per pair: matching mat (Template), baggie containing 5 objects with 2 sets of identical objects (e.g., 2 orange linking cubes, 2 teddy bear counters, 1 farm animal)

In the circle, before sending children to tables, place the matching template on the rug with a bag of 5 objects.



1. Hold up 2 unsharpened pencils, and then place them on the matching mat. Ask students how the pencils are the same, and lead them to use the sentence stem, "They are both..." (e.g., yellow, long, skinny).
2. Match students with partners to play at tables, and give each pair a baggie and a mat.
3. Ask partners to match objects that are exactly the same and put them on their mat.
4. Ask partners to tell how the objects are exactly the same, using the sentence stem. MP.3
5. As students work, circulate and describe what they are doing using parallel talk, e.g., "Mario matched the two bears. He says they are both blue. Priya says they are both little."

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Circulate and observe. Support children as they work with partners to sort matching objects. After students have matched the objects on their mat, call them to the circle for the Student Debrief.

Student Debrief (5 minutes)

Lesson Objective: Match 2 objects that are *exactly the same*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**exactly the same, match**).

- How did you choose things that were exactly the same?
- Do you see any things in our classroom that match?
- (Invite 2 girls to stand.) Are these 2 students exactly the same?
- (Hold up 2 matching counters and place them on a mat. Have students complete the following sentences.) These counters are _____. They are both _____.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide scaffolds for partners who may be having difficulty finding matching objects within a larger set by limiting the number in each set. Partners experiencing difficulty may start with a set of three objects that contains two identical objects and one that is different. Gradually increase the number in the set as students experience success.

CENTER CONNECTION:

Encourage children to find objects that are exactly the same in familiar centers. For example, students may find matching blocks in the block center or two matching plates in the kitchen center. Support children's language development as they share how the items are exactly the same.

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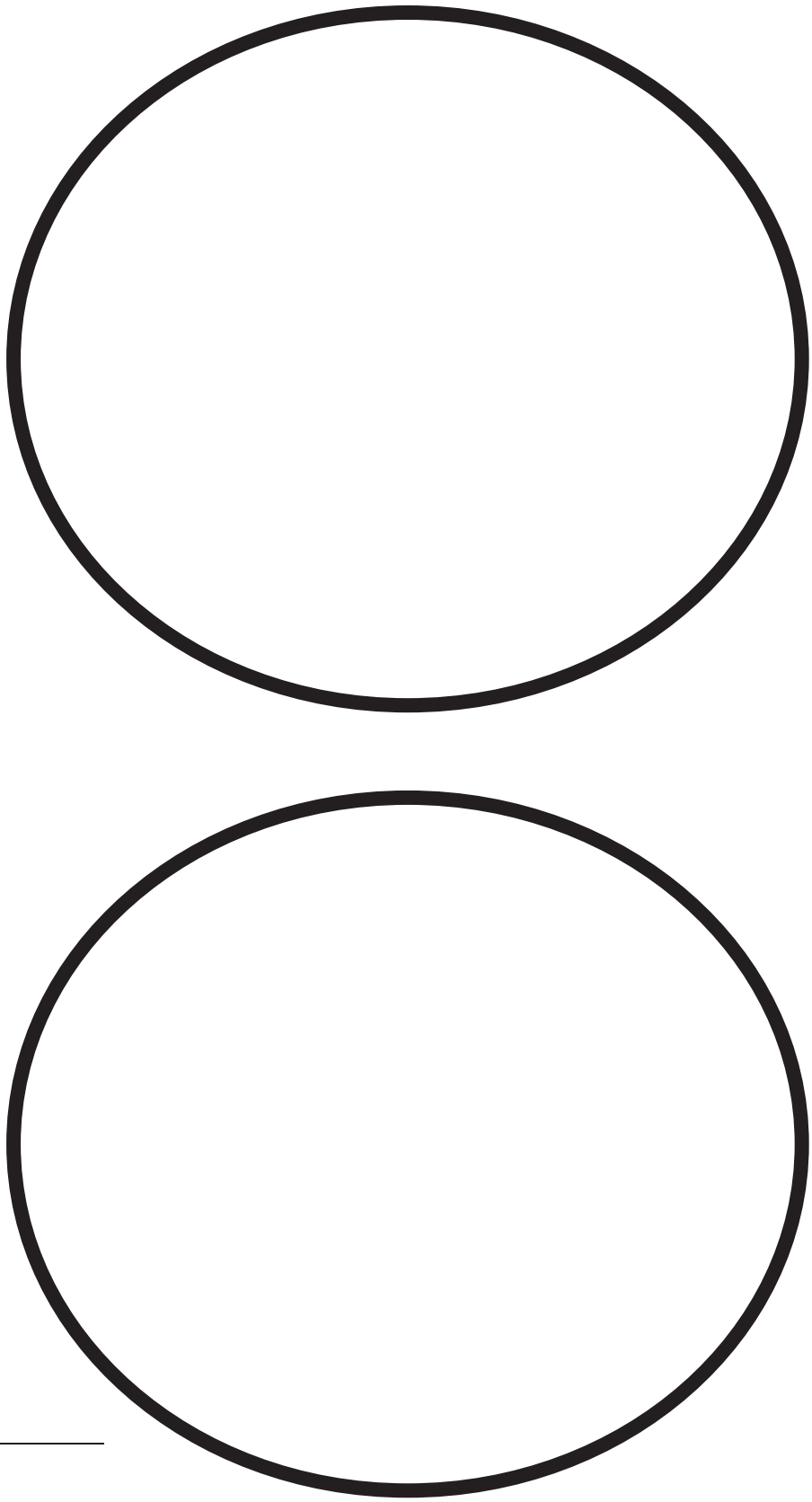

matching mat

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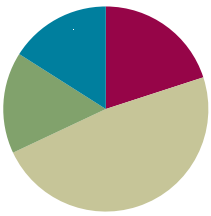
Lesson 2

Objective: Match 2 objects that are *the same, but…*

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(4 minutes)
Total	**(25 minutes)**

Fluency Practice (5 minutes)

- Count to 2 Chant **PK.CC.3a** (5 minutes)

Count to 2 Chant (5 minutes)

Note: Practicing the chant from Lesson 1 again prepares students for the matching activities in today's lesson. Like yesterday, use this time to build students' understanding of the routines of math class.

Conduct activity as outlined in Lesson 1.

1, 2, I count 2 (no motions).
1 (one index finger), 2 (the other index finger), I count 2.
1 (clap), 2 (clap), I clap 2.
1, 2, me and you. (Link arms with a partner.)

Application Problem (4 minutes)

Materials: (T) 4 balls (2 should be exactly the same)

Show students the 4 balls, and ask them to find the ones that are exactly the same. Ask students to tell a friend how the balls are the same. If language support is needed, lead them to use the sentence stem, "They are both ___." Invite volunteers to share their thoughts about how the balls are exactly the same.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Provide less-verbal children and English language learners with a variety of ways to participate in activities that require oral responses. Students can use gestures, picture cards, or sentence frames to ask or answer questions.

Note: Guiding students to recall how they matched 2 of the same items yesterday sets the stage for matching 2 objects that are the same, but slightly different. They will use two of the balls to talk about *the same, but…* in the Concept Development.

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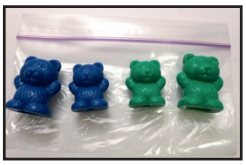
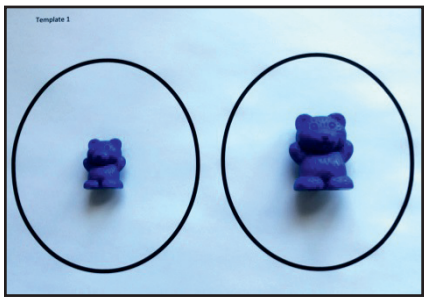
Concept Development (12 minutes)

Part 1: Concept Introduction

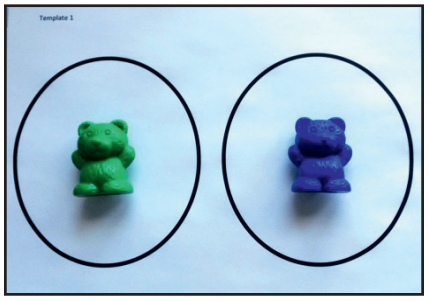


Materials: (T) Matching mat (Lesson 1 Template), baggie containing 4 matching counters (e.g., teddy bears) that can be sorted in different ways (e.g., color, size, shape)



Open the baggie and place 2 matching objects on the matching mat, guiding students to understand that the objects can be sorted in different ways.

1. Show students two similar, but not identical, objects (e.g., teddy bear counters that are the same color but different sizes).
2. Using self-talk, describe the two objects to students, e.g., "Here are two bears! They are the same color, but one is little and one is big. The **size** of the bears is different, so they are not exactly the same."
3. Show students another pair of related objects that are not identical (e.g., teddy bear counters that are the same size but different colors).
4. Use open questions to prompt students to talk about the objects, e.g., "What can you tell me about these counters? How are they the same?"
5. Ask students, "Are they exactly the same?"
6. Guide students to use the sentence stem, "They are **the same, but** ___."



If time permits, return to the set of 4 bears, and invite students to find a different match and explain why the bears are the same. Encourage students to use the words *they are the same, but….*

Note: While prefabricated classroom materials such as bear counters are an excellent resource, whenever possible, use natural and real world objects (e.g., leaves, sticks, coins) so that students can see connections to math in the real world as well. For example, "Look at these two leaves! They are the same, but one is a little cracked. They are the same, but one has more green."

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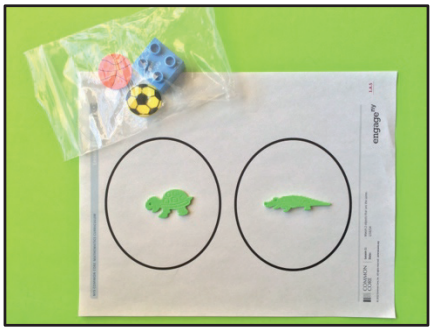
Part 2: Practice



Materials: (T) 2 balls from the Application Problem (e.g., large bouncy ball, tennis ball) (S) Per pair: matching mat (Lesson 1 Template), baggie containing 5 objects with 2 sets of matching objects (e.g., 2 green stickers—alligator and turtle, 2 sports stickers—basketball and soccer ball, 1 Lego piece)

1. Hold up two balls, one big bouncy ball and one small tennis ball.
2. Use open questions to prompt students to describe the balls. For example, "What can you tell me about these balls? How are they the same?"
3. Use repetition to model language structure, and call out interesting attributes. For example, "Ooh! Tessa says they are both round! Henry says they both roll!"
4. Ask students, "Are they exactly the same, or are they the same, but…?"
5. Guide students to use the sentence stem, "They are the same, but ___."
6. Group students into partners to play at tables, giving each pair a baggie and a matching mat. Have students choose objects that are the same and put them on their mats. Ask students to talk about how the objects are *the same, but…*.

Student Debrief (4 minutes)

Lesson Objective: Match 2 objects that are *the same, but….*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, use new vocabulary, and explore new concepts (exactly the same; **the same, but…**; **size**).

- Were the objects in your baggie exactly the same? (If students say yes, follow up with scaffolded questions about same size, same color, and same shape.)
- (Hold up a big and a little red bear.) Finish my sentence: These two bears are not exactly the same _____. (Size.)
- How was matching today different from matching yesterday?
- Can we make 2 claps and 2 taps that are *the same, but…*?

CENTER CONNECTION:

Encourage children to find objects that are *the same, but…* in familiar centers. For example, students may find two hats in the dramatic play center. Support students as they tell how the hats are *the same, but….*

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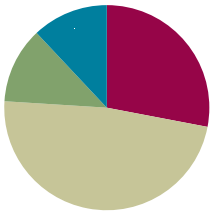
Lesson 3

Objective: Match 2 objects that are *the same, but…*

Suggested Lesson Structure

Fluency Practice	(7 minutes)
Application Problem	(3 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (7 minutes)

- Count to 2 Chant **PK.CC.3a** (4 minutes)
- Make a Match **PK.G.3** (3 minutes)

Count to 2 Chant (4 minutes)

Note: This fluency activity prepares students to count, eventually to 20, throughout their Pre-K experience.

Conduct activity as outlined in Lesson 1.

1, 2, I count 2 (no motions).
1 (one index finger), 2 (the other index finger), I count 2.
1 (clap), 2 (clap), I clap 2.
1, 2, me and you. (Link arms with a partner.)

If students have mastered the actions, add more actions like jumping, hopping, or stomping. Model one change of action. Then, ask students for their suggestions.

NOTES ON SUPPORTING LANGUAGE DEVELOPMENT:

Many students may need support with foundational vocabulary. In preparation for this lesson, review colors as well as the words *big* and *small*. Use concrete objects or motions when developing vocabulary with young children.

Make a Match (3 minutes)

Materials: (T) Pairs of identical objects from previous days' lessons, children's music (optional, see Step 3)

Note: This fluency activity maintains students' ability to locate pairs of objects that are exactly the same, but now challenges them to do it more quickly, with the complexity of a greater variety of objects.

1. Display objects in the center of the rug, with students standing on the edges of the rug, or other similar classroom space. Ask students to silently indicate (thumbs up, nod, or ok sign) if they see pairs that are exactly the same.
2. Direct students to select an object, return to their spot, and close their eyes.

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3. After everyone has selected an object, tell students to open their eyes (start the music if using it), and have them circulate until they find the student who has their match.
4. Demonstrate how to link arms with the partner who has their match.
5. Return objects to the center of the rug, and play again.

Variations: Challenge students to find the match before the music stops. Conduct the same activity again, but this time, match objects that are *the same, but…* (add new objects that fit *the same, but…* criteria with the second iteration).

Application Problem (3 minutes)

Instruct students to look around the room at their friends' clothing. Ask them to find two items that *are the same, but….* Direct students to point to the items and explain. For example, "My shirt is the same color as Jose's, but mine is larger." "Mary and Pedro's shirts are the same, but Pedro's is blue." Ask them if they can think of other ways the items are the same, but different.

Note: Children will find many different types of matches, which builds on their understanding of matching objects according to different attributes.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Provide students with a sentence frame to facilitate discussion and use of the desired vocabulary: *They are the same, but* _____. Support students as they use comparative language when talking about size: *longer, shorter, smaller, larger,* etc.

Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) 2 identical copies of a picture book, 1 picture book that is similar but not identical

1. Hold up two copies of the same picture book. Ask students, "Are they exactly the same, or are they the same, but…?"
2. Guide students to say, "They are exactly the same."
3. Put down one of the picture books, and pick up the one that is similar. Ask students, "Now, what can you tell me about *these* books?" If needed, remind them about attributes, e.g., "They are the same shape. One is bigger."
4. Ask students, "Are they exactly the same, or are they the same, but…?"
5. Guide students to say, "They are the same, but…."
6. Hold up a book. Say, "Look at the book and my face. Are they the same or **different**?"
7. Guide students to say, "They are different."
8. Have students look closely at their hands and talk to a partner about how they are the same but also different, e.g., "They are the same, but this one has more freckles."

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Part 2: Practice

Materials: (S) Problem Set, 1 baggie per pair with 6 picture cards from matching cards (Template)

1. Pair students and send them to tables with a baggie.
2. Instruct students to look at the images and talk about which ones match, laying them side by side.

MP.3

3. Ask, "How are they the same?" "How are they different?" Guide students to use the sentence stem, "They are the same, but…."
4. Circulate and repeat students' responses to model the language structure and focus on attributes, e.g., "Regina said that the apples are the same, but they are a different size."
5. Distribute the Problem Set to each student and read the directions. Emphasize using the words *they are the same, but…*.

Student Debrief (3 minutes)

Lesson Objective: Match 2 objects that are *the same, but….*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**different**).

- What objects did you match today? How did you match them?
- Use your words to explain how your objects today were not exactly the same.
- Name some things that match but are a little bit different.
- Have two children clap and count to 2. Use your words, "Their chant was the same, but…."

CENTER CONNECTION:

Cut out the matching cards and ask children to find objects that are *the same, but….* Support students as they tell how the objects are *the same, but….*

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Name _____ Date _____

Point to the objects that match by making a line with your finger. Tell your partner how they are the same, but _____.

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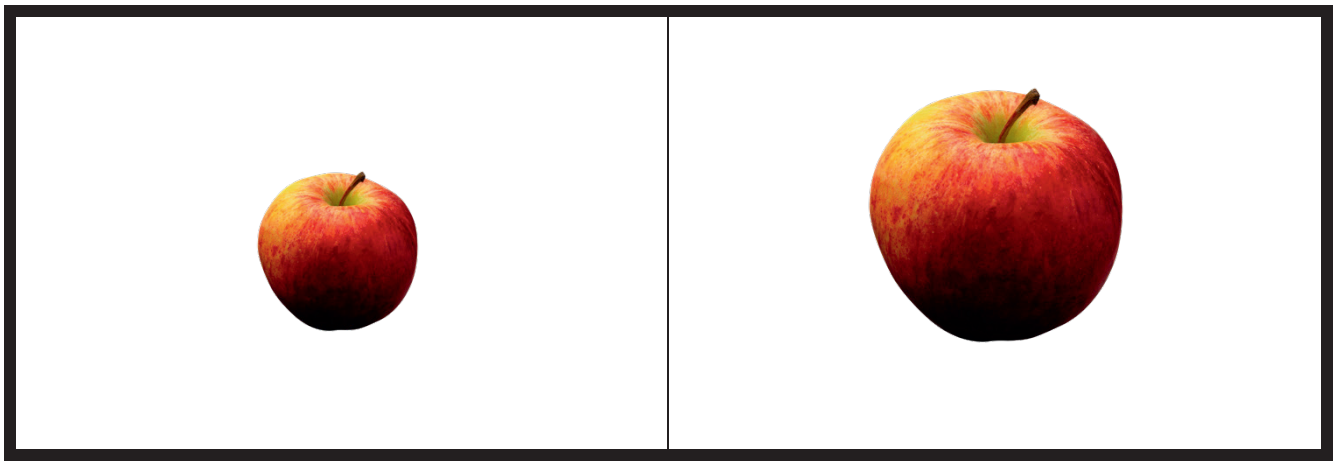

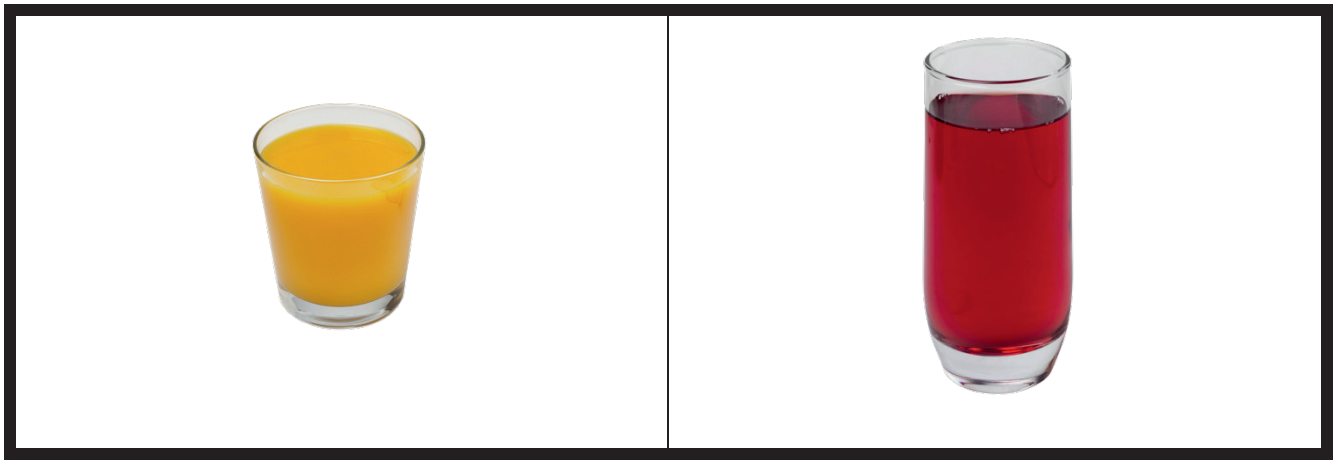

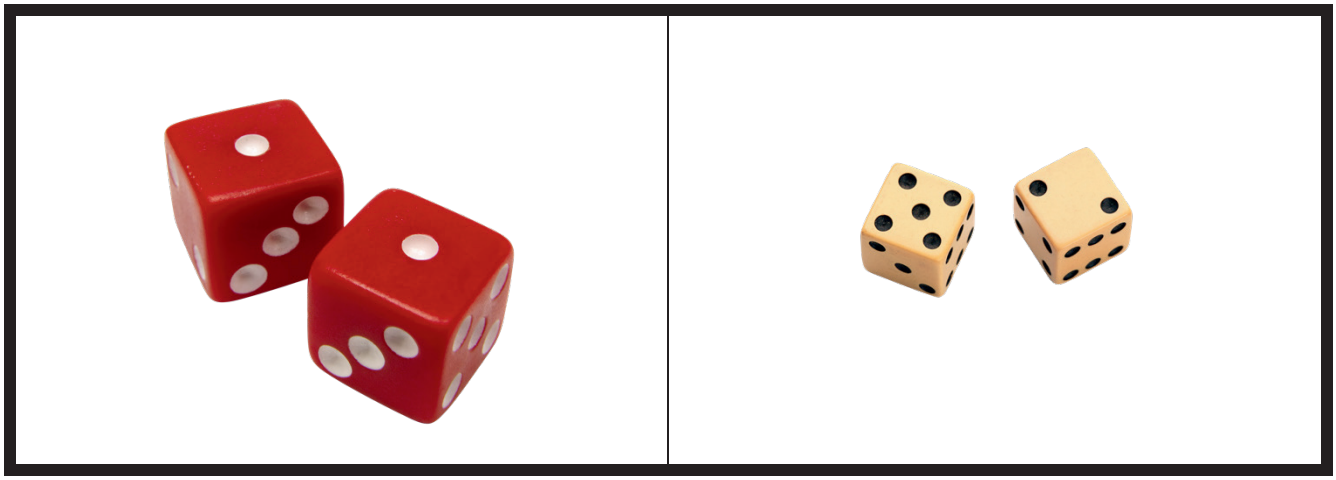

matching cards

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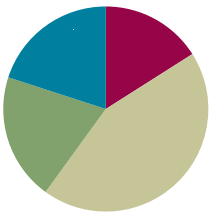
Lesson 4

Objective: Match 2 objects that are used together.

Suggested Lesson Structure



Fluency Practice	(4 minutes)
Application Problem	(5 minutes)
Concept Development	(11 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**

Fluency Practice (4 minutes)

- I Have 2 Chant **PK.CC.3a** (4 minutes)

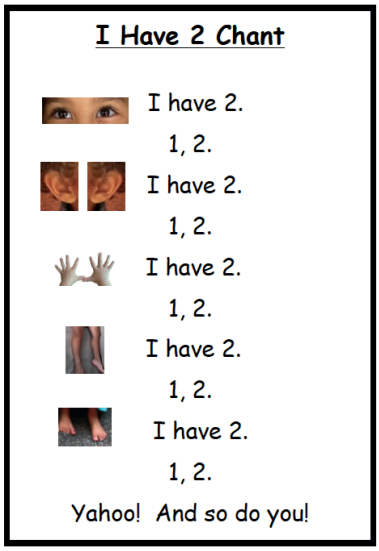
I Have 2 Chant (4 minutes)

Note: In this activity, students extend their understanding of matching to recognize that they have two parts of their body that are *the same, but*…. The chart is provided as an optional resource to help students recall the sequence of the chant.

Materials: (T) I Have 2 Chant (Fluency Template)

T: Let me hear you count to 2.
S: 1, 2.
T: Are you getting better at counting to 2?
S: Yes!
T: We can also count the parts of our body that come in pairs. We can count our eyes, like this: 1, (point carefully to one eye), 2 (then, the other eye), I have 2 (both). You try it.
S: 1, (point carefully to one eye), 2 (then, the other eye), I have 2 (both).

Repeat with ears, hands, legs, feet, and the last line.



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Application Problem (5 minutes)

Materials: (T) Set of new and used crayons (with a matching pair for each student)

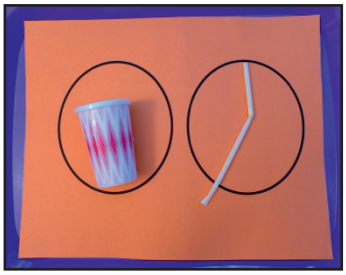
Place the crayons in the middle of the circle. Separate into smaller piles around the circle to make it easier for children to participate, if necessary. Ask students to find two crayons that match. Ask students to tell how their crayons match, using the language "they are the same, but…."

Note: This problem gives students an opportunity to match two objects that are *the same, but…* while considering attributes such as color, size, and shape.

Concept Development (11 minutes)

Part 1: Concept Introduction

Materials: (T) Prepared baggie with 4 objects related by function (e.g., crayon and paper, straw and cup) and an unrelated counter (e.g., cube), matching mat (Lesson 1 Template) (S) Individual baggies like teacher's (optional to vary the contents of the individual baggies, but make sure that the matching items are related to each other by function)



1. Hold up the cup and straw, and then put them on the mat. Say, "Hmmm…. I'm thinking of a way the cup and straw can be matched together. But, they don't look the same at all. Who can guess what I'm thinking? How do they match?"
2. Guide students to see that although they are different, they are used together.
3. Guide students to use the sentence stem, "They match because I use them together to…."
4. Pass out individual baggies. Have students find two objects that match by use and hold them up.
5. Ask, "Are your two objects the same?"
6. Encourage students to talk about why their two objects match even though they are not the same.
7. Guide them to use the sentence stem, "They match because I use them together to…."

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Part 2: Practice

Materials: (S) Matching mat (Lesson 1 Template), tables prepared with matching items used together (e.g., milk carton and cup, paintbrush and paint, other matching items taken from students' baggies), Problem Set

1. Hold up the milk carton and cup, and then put them on the matching mat. Ask, "How do they match?"
2. Guide students to use the sentence stem, "They match because I use them together to…."
3. Pair students with partners to play at tables.
4. Tell students, "Match two items that are used together, and put them on your mat."
5. Encourage students to talk about how the items match: "They match because I use them together to…."
6. Distribute a Problem Set to each student and read the directions. Emphasize using the words *they match because I use them together to….*

Student Debrief (5 minutes)

Lesson Objective: Match 2 objects that are used together.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How did we match things today?
- Do you see any other things in our classroom that are used together?
- What are some of the ways we've matched objects?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

When choosing items for baggies, remember that some students will benefit from beginning with objects that they have experienced in the classroom setting. This prevents misconceptions about matching based on function, as objects can have a variety of functions within different households and cultures.

For other students, consider adding a challenging extension by placing 3 items in the baggie that could be used together in different combinations. For example, an envelope, pencil, and paper. One student might match the envelope with the paper, while another might match the paper with the pencil, or see a connection between all 3 objects.

CENTER CONNECTION:

Encourage children to find objects that are used together in familiar centers. The kitchen center is a great place to find matches of this type (e.g., plate and fork, peanut butter and jelly, etc.). Support children's language development as they share how the items are used together.

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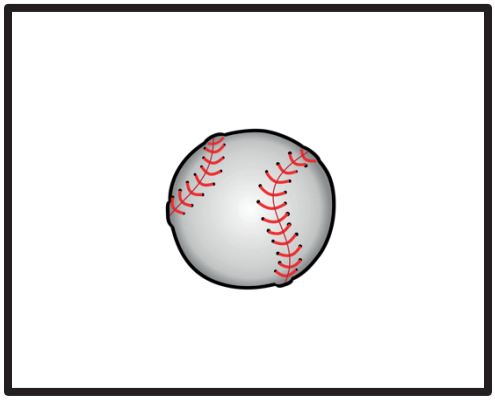
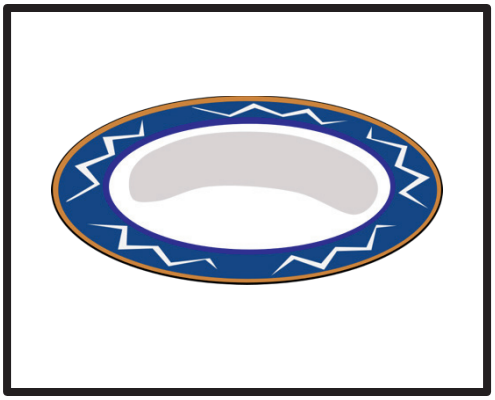
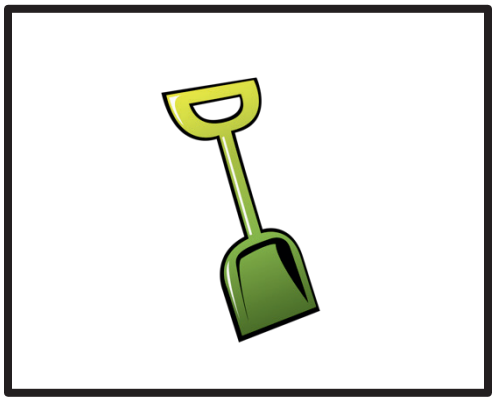
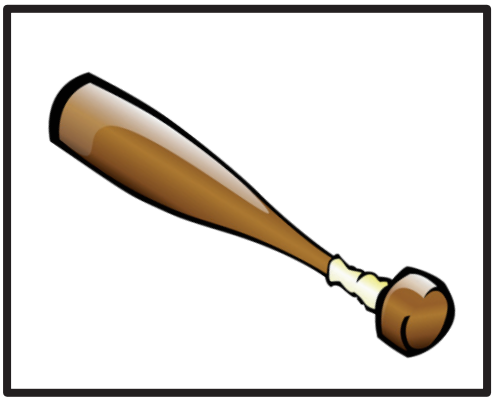
Name _____ Date _____

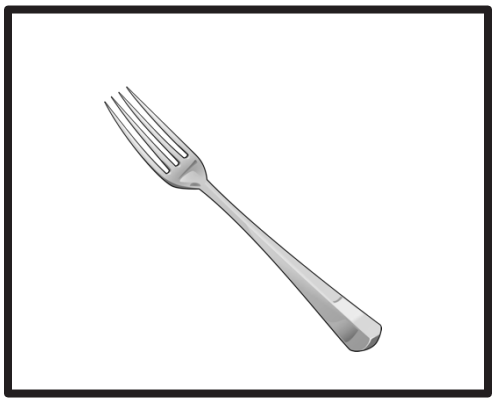
Point to the objects that match by making a line with your finger. Tell your partner how you use them together.

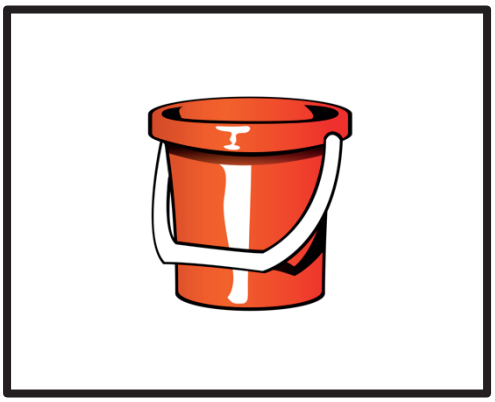












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I Have 2 Chant

I have 2.

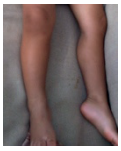
1, 2.

I have 2.

1, 2.

I have 2.

1, 2.



I have 2.

1, 2.

I have 2.

1, 2.

Yahoo! And so do you!

I Have 2 Chant

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Topic B

Sorting

PK.MD.2, PK.CC.1

Focus Standard:	PK.MD.2	Sort objects into categories; count the numbers of objects in each category (limit category counts to be less than or equal to 10).
Instructional Days:	3	
Coherence -Links to:	GK–M1	Numbers to 10

In Topic A, students learned to pair objects based on shared attributes and explain the reasons for the match. In Topic B, they carry forward this reasoning to form groups of more than 2 objects, laying the foundation for understanding, forming, and counting sets of objects.

In the first lesson of Topic B, students make a group of objects that share a common attribute. The attribute is defined by the teacher in both Pre-Kindergarten (**PK.MD.2**) and Kindergarten (**K.MD.3**). In these grades, students are not expected to select an attribute but rather sort by a given attribute. In Lesson 6, students advance to making two groups rather than just one. Given a mixed collection of crayons and markers, students are directed to sort them into a group of crayons and a group of markers and explain their thinking as they do. Finally, in Lesson 7, students expand their understanding of sorting by sorting the same set of objects in two different ways: first sorting bears by color and then by size.

Students continue their playful work with counting during Fluency Practice. With teacher support, they practice counting a group of 3. Topic B is foundational to students understanding the relationship between quantities and counting objects up to 3, and prepares students to answer *how many* questions in Topic C (**PK.CC.3ab**, **PK.CC.4**).

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A Teaching Sequence Toward Mastery of Sorting

Objective 1: Make one group with a given attribute. (Lesson 5)

Objective 2: Sort into two groups. (Lesson 6)

Objective 3: Sort the same group of objects in two different ways. (Lesson 7)

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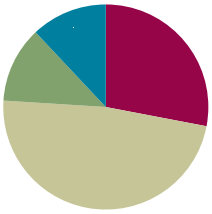
Lesson 5

Objective: Make one group with a given attribute.

Suggested Lesson Structure



Fluency Practice	(7 minutes)
Application Problem	(3 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (7 minutes)

- 1, 2, Pass **PK.CC.3a** (3 minutes)
- Pop Up 3 Game **PK.CC.3ab** (4 minutes)

1, 2, Pass (3 minutes)

Note: This activity anticipates the action of touching and counting. Having the dots aligned on the 5-group strip eliminates the need to organize objects.

Materials: (S) 5-group strip (2-dot, Fluency Template)

5-Group Strip (2 Dots)

1. Seat students in a circle, with a 2-dot strip on the floor in front of each of them.
2. Signal students to touch and count the dots on the 2-dot strip with an index finger as they say the chant, and then pass the strip to the right.
3. Possibly give a start and stop signal to the chant at first, in order to keep the movement and phrasing rhythmic.
4. Chant with students, "1 (touch the first dot), 2 (touch the second dot). I count 2, and pass it on to you." (All pass their strips to the person to their right.)

The game can be efficiently and delightfully closed by having one student place the strips in a basket rather than passing them forward. This game is inspired by the Ghanaian rock-passing game *Obwisana*.

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Pop Up 3 Game (4 minutes)

Note: This fluency activity introduces counting to 3.

Begin with all students seated in a circle, or around the rug. Children count around the circle in the following way:

Student A: 1 (remains seated).
Student B: 2 (remains seated).
Student C: 3 (stands, or pops up).

The next student starts the counting sequence again at 1. Students who have already popped up (standing) do not say a number again. Continue the process until all students are standing.

Application Problem (3 minutes)

Display 4 of the objects used in Lesson 4's Concept Development, and have students match the objects to help them recall how the objects were sorted (items that are used together). Ask them to look around the classroom and identify 2 items that are used together (e.g., chair and desk, white board and marker, book and bookcase, cookie cutter and playdough, etc.).

Note: In this activity, students match items that are used together in anticipation of creating a group of 3 objects that go together in the Concept Development.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Check frequently for comprehension of vocabulary. English language learners should have multiple exposures to new vocabulary coupled with the real objects. Provide an opportunity for students to explore the objects in the bag and learn their names before the lesson.

Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) Sorting mat (Template), prepared baggie with plastic food items and non-food items (e.g., a carrot, stuffed animal, paintbrush, piece of chicken, milk, fork, napkin, etc.), lunchbox

Note: Children begin to sort things naturally at a very young age (e.g., they easily sort into two groups at meal times: food I like and food I do not like). This Concept Development simply formalizes something that they create naturally and gives it a name, *group*.

1. Place plastic food items and non-food items in the middle of the circle. Place the sorting mat next to the objects.
2. Call on students to find the food items and put them on the mat.
3. As students pick objects, use parallel talk with descriptive language: "Shawna picked a yummy piece of chicken! Devon picked a crunchy, delicious carrot!"
4. Pick up a non-food item, e.g., a paintbrush, and ask, "Does this paintbrush belong in our food group?"

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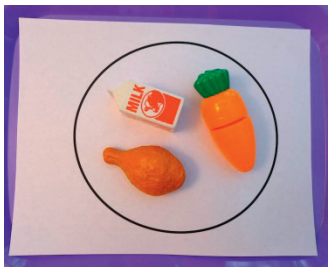
5. After all the food items are on the mat, say, "We made one **group**." Everything in this group is food, so let's put all the food in my lunchbox!"
6. Show another set of mixed items, including non-food items, such as a fork or napkin. Invite students to make a new group of objects, pretending they are a mom or a dad packing lunch for her or his child.
7. Ask questions such as, "How did you match these?" "How are they the same?" "What is different about the objects in the group?"
8. Encourage students to describe what they are packing and, when they are finished, to say, "I made one group."



Part 2: Practice

Materials: (S) Prepared sets of objects in trays or baskets (e.g., 2 buttons, 1 coin, plastic animal, red marker, red crayon, red Lego piece), sorting mat (Template) in each tray or basket

1. Pair students at tables with prepared sets of objects and the sorting mat.
2. Tell students, "Let's make one group!" Have partners make a group of objects that match a given attribute, e.g., shape, size, color, or use.
3. Use parallel talk, describing the groups students are making, e.g., "David and Brea made a group of buttons and coins, since they are all circles." "Liliana and Jahsir are putting all the red objects in a group." MP.3
4. Ask questions such as, "How did you match these?" "How are they the same?" "What is different about the objects in the group?"
5. Guide students to repeat the questions to their partners.

Student Debrief (3 minutes)

Lesson Objective: Make one group with a given attribute.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**group**).

CENTER CONNECTION:

Centers clean-up is an excellent time to emphasize making a group. "Let's put all the dolls in a group in this basket. Put the paint brushes in a group on the shelf."

- What did you make today?
- How did you make a group?
- What was the same about the things in your group? What was different? (Color, size, shape, use.)

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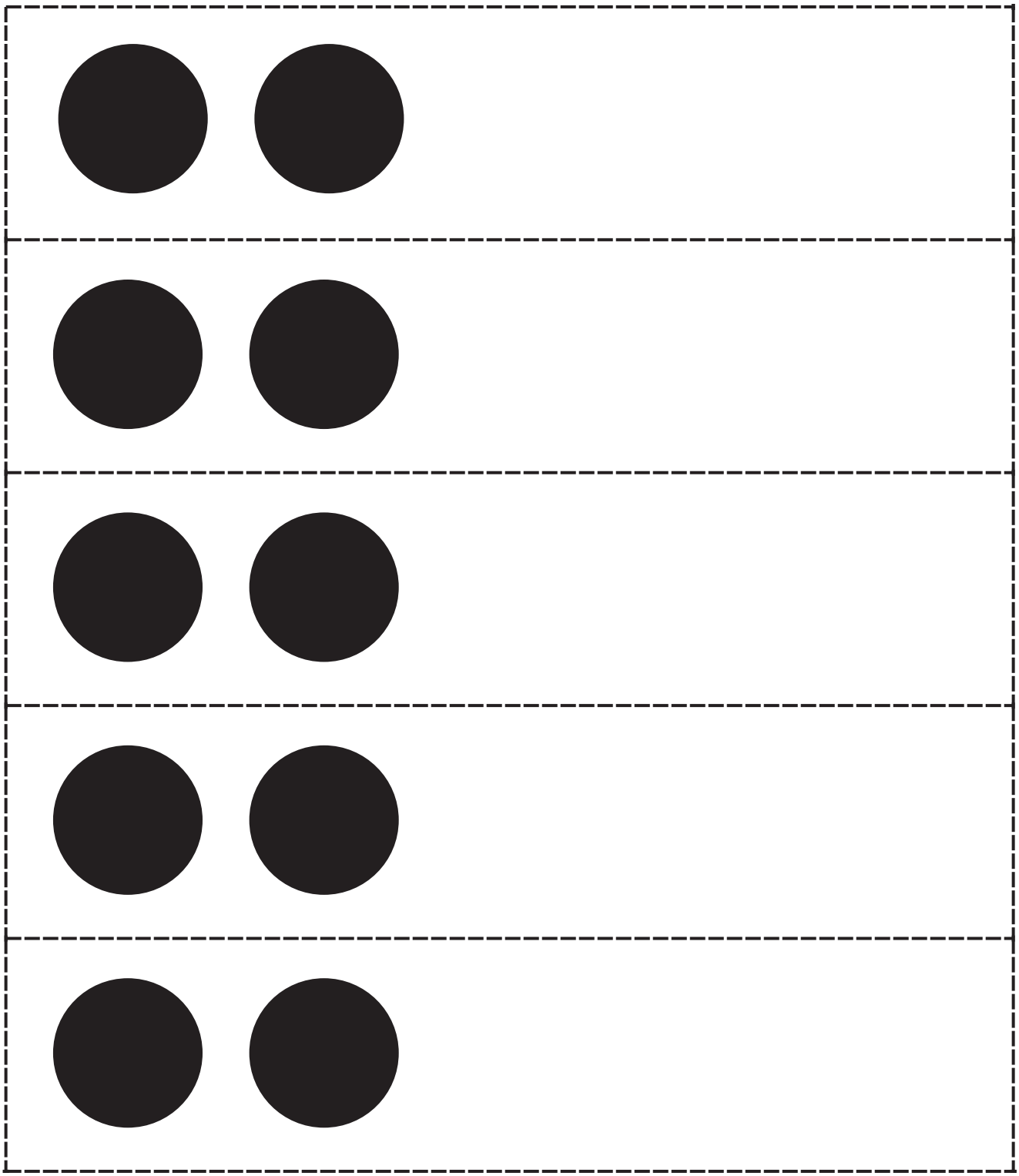

5-group strip (2 dot)

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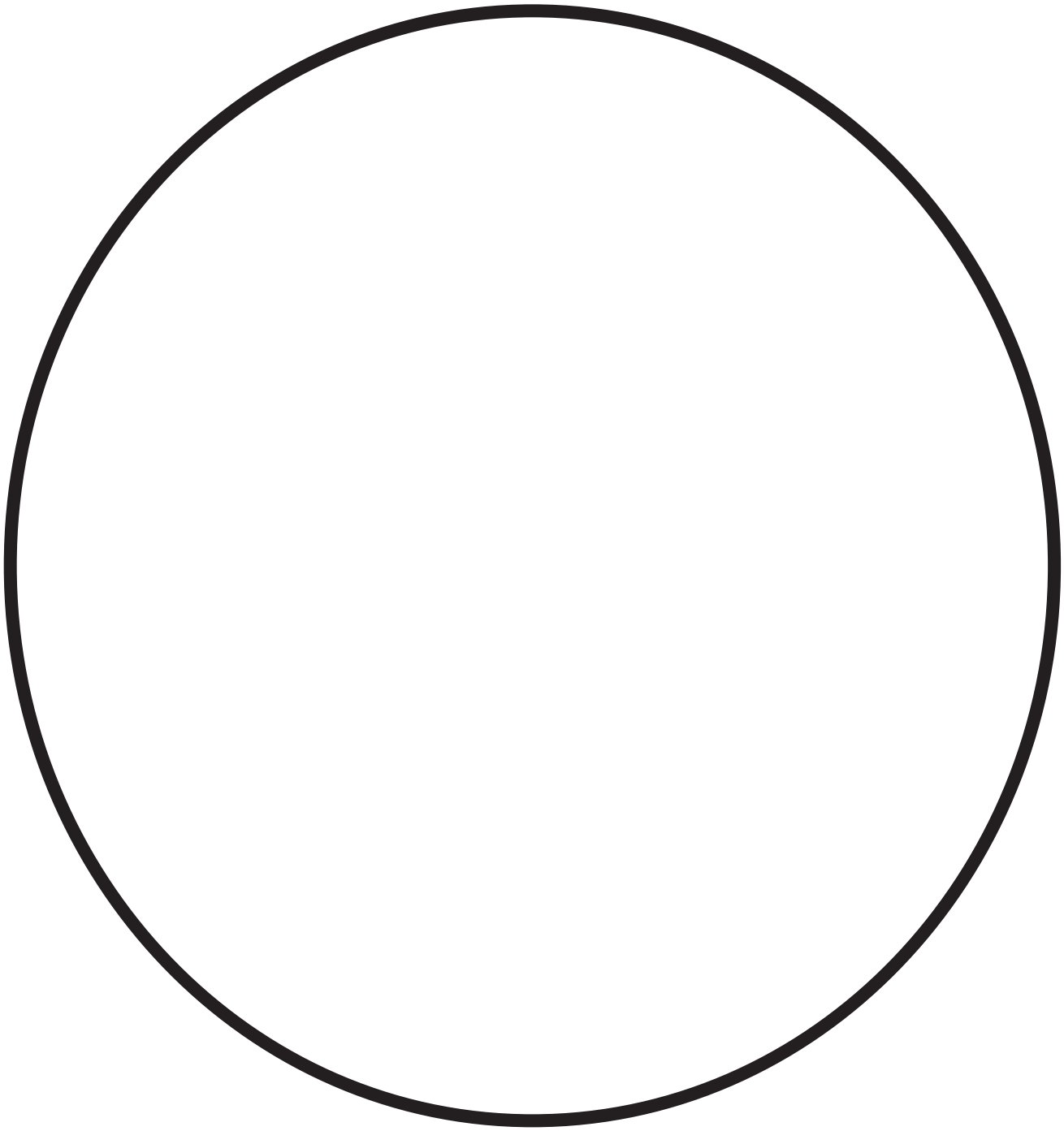

sorting mat

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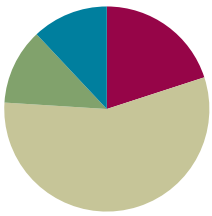
Lesson 6

Objective: Sort into two groups.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Count to 3 Chant **PK.CC.1** (2 minutes)
- 1, 2, 3, Pass **PK.CC.3a** (3 minutes)

Count to 3 Chant (2 minutes)

Materials: (S) 5-group strip (3-dot, Fluency Template)

Note: This fluency activity anticipates the need for students to be secure in rote counting before they practice touch and count in future lessons.

Teach the words and movements in the chant line by line. In the last repetition of the chant, demonstrate counting and touching 3 dots on the 5-group strip. If students struggle with the verses or movements, it is not necessary to teach the full chant today, as it is repeated in the next lesson.

Count to 3 Chant

1, 2, 3
Count with me.
1, 2, 3
Tap with me.
1, 2, 3
Clap with me.
1, 2, 3
Jump with me.
1, 2, 3
Count with me.

1, 2, 3, Pass (3 minutes)

Materials: (S) 5-group strip (3-dot, Fluency Template)

Note: This fluency activity anticipates the need to touch and count. Having the dots aligned on a strip organizes objects into a linear configuration. Conduct the activity similarly to 1, 2, Pass in Lesson 5, using the 3-dot strip. Students use the same index finger to move from dot to dot. Replace the verse with "1, 2, 3, pass those dots to me!"

T/S: 1 (touch the first dot), 2 (touch the second dot), 3 (touch the third dot), pass those dots to me! (All pass their strips to the person to their right.)

Students repeat until the teacher gives a signal to stop. Clean up efficiently and delightfully by having one student place the dot cards in a basket until all dot cards are in the basket.

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Be sure that students point to each dot individually, rather than slide. Using the analogy of pushing buttons may prove helpful.

This game is inspired by the Ghanaian rock-passing game *Obwisana*.

Application Problem (3 minutes)

Materials: (T) Empty crayon box, basket containing crayons (1 crayon per student) and other assorted objects (e.g., counters, board books, blocks)

Place the empty crayon box in the middle of the circle. Tell students that the goal is to fill the box with crayons. Pass the basket around the circle and invite each student to help make a group of crayons by picking one crayon and putting it in the box. When the group is finished, ask students what they have made. Ask them to tell their partner what they have made. Congratulate them on making a group of crayons!

Note: This Application Problem prepares students for sorting objects into two groups by reviewing how to create a group of objects that match. They use this grouping activity to discuss rules for making groups in the Student Debrief.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Light and dark clothing, 2 bags or baskets labeled *light* and *dark*, 2 sorting mats (Lesson 5 Template), baggie with a variety of crayons and markers (1 crayon or marker per student), 2 clear plastic dishes (to keep markers and crayons from rolling)

1. Ask students, "Can you help me **sort** the laundry by color? I need to put all the light colors together in one group, and all the dark colors together in another group."
2. After sorting, ask students, "How are the two groups the same?" "How are they different?" Guide them to use the sentence stems, "The groups are the same because…" and "The groups are different because…."
3. Show a bag of markers and crayons. Say, "I need some more help. I want to color with markers, and my friend wants to color with crayons. What can we do?"
4. Guide students to say, "We can make two groups."
5. Place the sorting mats on the rug. Have students come forward to add a marker or crayon to the appropriate group. Lead them to say, "I am helping to make the crayon (or marker) group."

6. Once all the items are sorted, tell students, "Look, we sorted the items into two groups!"
7. Ask students, "How are the two groups the same or different?" Again, guide them to use the aforementioned sentence stems.

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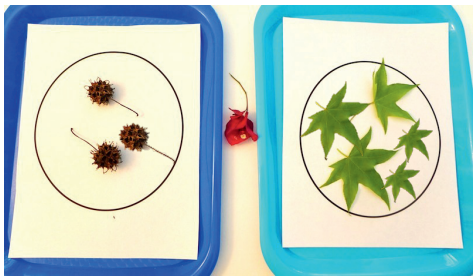
Part 2: Practice

Materials: (S) Per pair: baggies containing 2 groups of 2 different kinds of objects with 1 object that is not part of either group (e.g., 3 sweetgum burr balls, 5 leaves, and 1 flower; 2 ducks, 4 horses, and 1 cow), 2 sorting mats (Lesson 5 Template)



1. Send pairs to tables to sort the objects in their bags into two given groups (by color, shape, etc.).
2. Guide partners to ask and answer questions about their groups. For example, "What groups did you make?" or "How are the two groups the same? How are they different?" or "How did you sort the objects?"

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

It should be noted that some students may wish to determine their own attributes for grouping objects that belong together (e.g., sticks and acorns are found on trees). Accept a variety of responses, and use the Debrief as an opportunity to share different ways to sort.

Student Debrief (3 minutes)

Lesson Objective: Sort into two groups.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**sort**).

- How did you sort things today?
- Tell us how one of your groups was the same. Tell us how your two groups were the same or different.
- Can you think of any places in our classroom where we sort things?
- (Show a group of 10 mixed crayons and a group of 10 orange crayons.) I have two groups. (Point to the mixed group.) Can I call this a group of crayons? (Point to the orange group.) Can I call this a group of crayons? Can I call this an orange group? (Point to the mixed group again.) Can I call this an orange group? Tell your partner how these two groups are *the same, but….*

CENTER CONNECTION:

Look for opportunities to sort at familiar centers. For example, in the block center, have students sort the wooden blocks and the Legos into two different piles. Support children's language development as they describe how they sorted.

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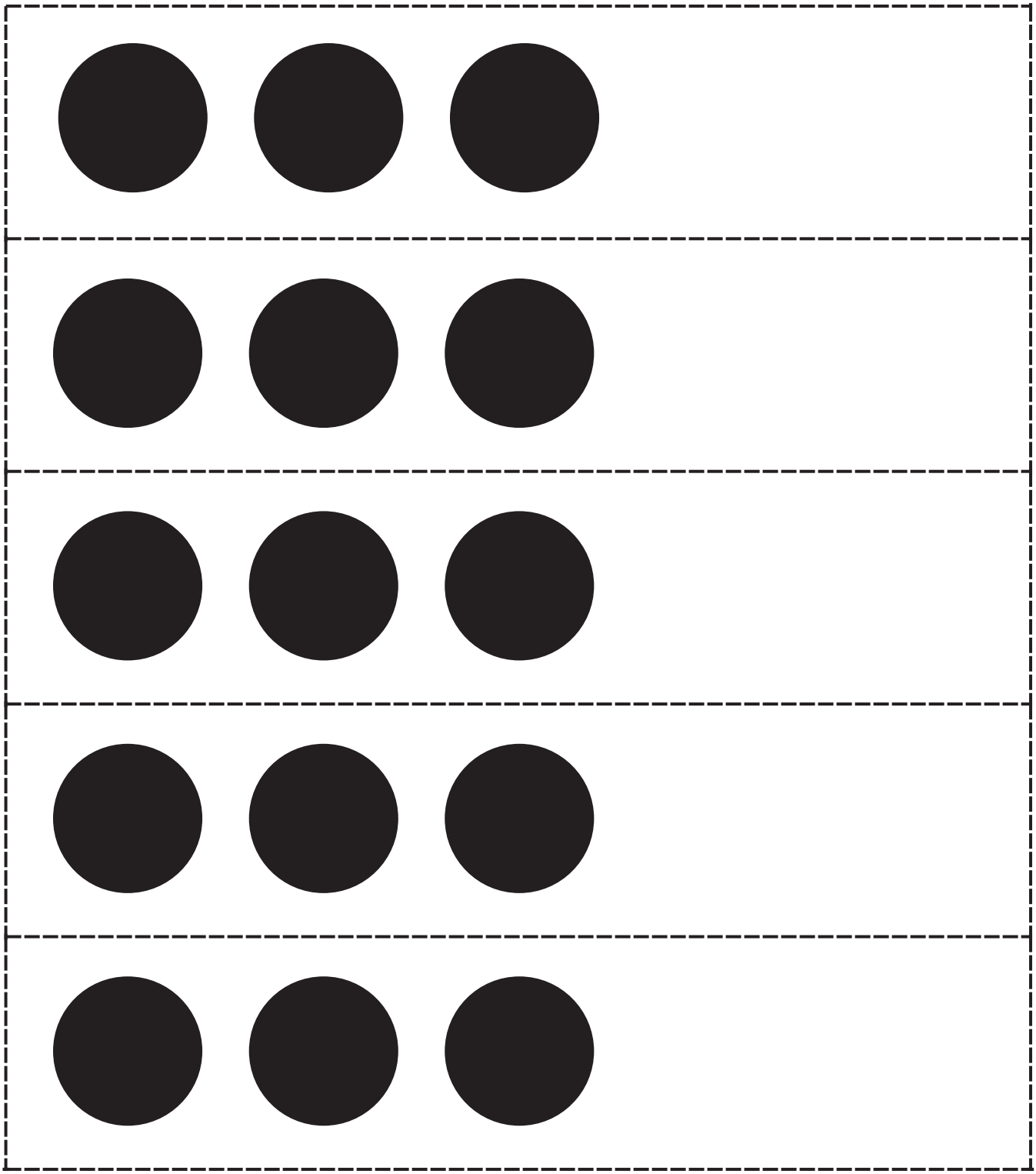

5-group strip (3-dot)

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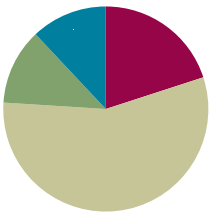
Lesson 7

Objective: Sort the same group of objects in two different ways.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Count to 3 Chant **PK.CC.1** (2 minutes)
- 1, 2, 3 Pass **PK.CC.3a** (3 minutes)

Count to 3 Chant (2 minutes)

Materials: (S) 5-group strip (3-dot, Lesson 6 Fluency Template)

Note: This fluency activity anticipates the need for students to be secure in rote counting before they practice touch and count in future lessons.

Conduct the activity as described in Lesson 6. If students have mastered the chant, call on students to lead new actions (e.g., 1, 2, 3, swim with me, stomp with me, etc.).

1, 2, 3, Pass (3 minutes)

Materials: (S) 5-group strip (3-dot, Lesson 6 Fluency Template)

Note: This activity anticipates the need to touch and count. Having the dots aligned on a strip organizes objects into a linear configuration.

Conduct the activity as described in Lesson 6.

The repetition of these activities from one lesson to the next is valuable. The first time, students are focused on learning the steps to a new activity, but by the second time, they are able to do it with ease and efficiency.

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Application Problem (3 minutes)

Materials: (T) 2 cups or vases, 2 sorting mats (Lesson 5 Template) (S) 2 different types of flowers (real or plastic)

Place a vase or cup on each sorting template. Give a flower to each student. Ask them to help create two groups of flowers (bouquets) for two teachers at school. Start by placing a dandelion in one container and a purple flower in the other one. Invite students to put their flower with its group. Ask students to tell how the items in each group are the same and how they are different.

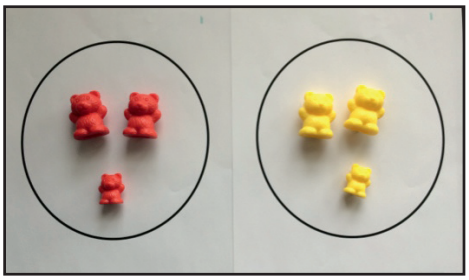
Note: In this Application Problem, students build upon their work from previous lessons on sorting (where they sorted objects into two groups). Now, they practice sorting two different types of flowers, and then explain how they made a group.

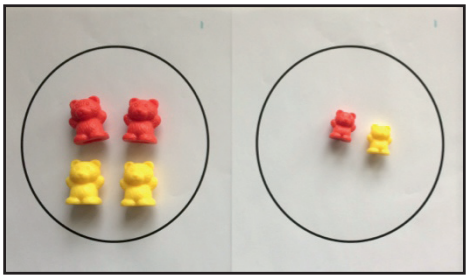
Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) 2 sorting mats (Lesson 5 Template), baggie with items that can be sorted into two groups by more than one attribute (e.g., 6 little people toys that can be sorted by gender and size, 6 teddy bear counters that can be sorted by color or size, etc.)

1. Show students a bag containing 2 big red bears, 2 big yellow bears, 1 little red bear, and 1 little yellow bear. Place the sorting mats on the rug.
2. Instruct students to sort the bears into two different groups on the mats, first by color.
3. Ask students, "What groups did we make?"
4. Guide students to say, "We made a group of _____ (red or yellow) bears."
5. Ask students, "How did we sort our groups?"
6. Guide students to say, "We sorted by color."
7. Repeat Steps 2–7, instructing students to sort the bears into two different groups by size.





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Part 2: Practice

Materials: (S) Per pair: differing baggies of items that can be sorted into 2 groups by more than 1 attribute (e.g., bears, vehicles, flowers, leaves, pine cones), 2 sorting mats (Lesson 5 Template)

1. Pair students at tables to sort objects.
2. Tell partners the category they will use to sort items, e.g., big or little, hard or soft, green or yellow. For example, "Sort the toys by size, big or little."
3. Guide partners to ask one another questions as they sort objects into the predetermined groups: "What groups did you make?"
4. Guide students to answer the questions using sentence stems such as, "I made a group of _____ (big or little cars)." MP.3
5. Tell partners a second sorting category, e.g., "Sort the toys by color, green or yellow."
6. Use parallel talk to model language as students communicate with each other about the items they are sorting, e.g., "Ethan is making a group of little things. Ethan is sorting by size."

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some children will need to practice sorting into two groups with varied attributes using the exact same materials used for the class demonstration in Part 1. Advanced students may want to choose their own categories for sorting. Create baggies that are differentiated so that the needs of different students can be met.

Student Debrief (3 minutes)

Lesson Objective: Sort the same group of objects in two different ways.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- What did we sort today?
- How did you sort objects with your partner? (Provide the sentence stem, "We sorted by _____.")
- Can objects be sorted in more than one way? Explain.
- Let's think about ways that we could sort our shoes. (Use student suggestions, such as sorting by laces or Velcro, size, sneakers or non-sneakers.)

CENTER CONNECTION:

The library center is a great place to practice sorting the same set of books in different ways. Depending on children's experience with the books, try any of the following ways to sort:

- About people or about animals
- Pictures only or words and pictures
- I have read or I have not read
- About Curious George or about another character

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Topic C

How Many Questions with 1, 2, or 3 Objects

PK.CC.1, **PK.CC.3ab**, **PK.CC.4**, PK.MD.2

Focus Standards:	PK.CC.1	Count to 20.
	PK.CC.3ab	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.
	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.
Instructional Days:	4	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

In Topic C, students build on their knowledge of sorting objects and counting to 3 as they learn to answer *how many* questions with objects in varying configurations (**PK.CC.4**). Throughout these lessons, students gain experience counting small sets (up to 3), which supports their understanding of one-to-one correspondence and cardinality.

In Lesson 8, children count to 3 and answer *how many* questions about "Goldilocks and the Three Bears." For instance, children point to and count 3 bears, bowls, chairs, and beds. As students touch and count the bears, they practice one-to-one correspondence by pairing each object with only one number name (**PK.CC.3a**).

In Lessons 9 and 10, students count up to 3 objects in different configurations. In Lesson 9, students sort animals into three groups and count each group, determining that the last number name said tells the number of objects counted (**PK.CC.3b**). They move the animals into lines for lunch and find that the number of animals stays the same in the new arrangement. They build upon this knowledge in Lesson 10, where they practice counting pictured objects in scattered and linear configurations.

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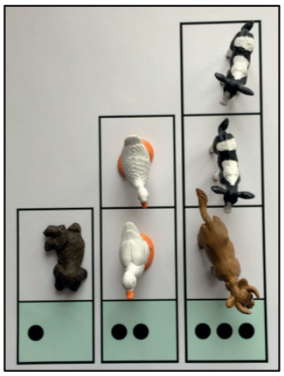

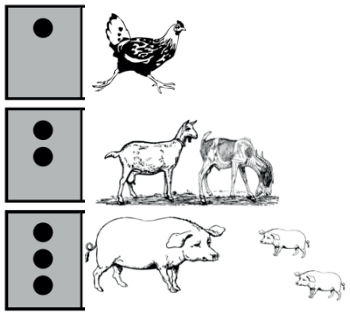

Finally, in Lesson 11, students put their new counting skills to work as they play a game, counting on dot cards to determine how many spaces to move their bears on the game board.

Please note that numerals 1, 2, and 3 are introduced in Topic D. The pre-written numerals are introduced in Topic D so that students have had plenty of time to touch and count before matching the count to the abstract numeral.

Throughout Topic C, students continue to work on touching and counting to 3 in the context of chants, games, and movement during Fluency Practice. The new Peek-a-Boo Counting game begins asking children to subitize (recognize without counting) quantities of 1, 2, and 3. Research shows that most children have an innate neurological ability to recognize small quantities without counting. Fluency activities in Topic C also anticipate future Module 1 work, introducing children to rote counting to 4 and counting forward and backward to 3.

A Teaching Sequence Toward Mastery of *How Many* Questions with 1, 2, or 3 Objects	
Objective 1:	**Count up to 3 objects. (Lesson 8)**
Objective 2:	**Arrange and count up to 3 objects in scattered and linear configurations. (Lessons 9–10)**
Objective 3:	**Arrange and count up to 3 objects to play a game. (Lesson 11)**

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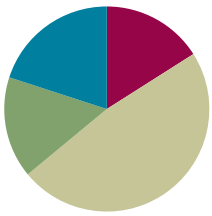
Lesson 8

Objective: Count up to 3 objects.

Suggested Lesson Structure

Fluency Practice	(4 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**



Fluency Practice (4 minutes)

- Count and Clap **PK.CC.1** (4 minutes)

Count and Clap (4 minutes)

Note: Now that students have counted to 3 by rote, their counting skills grow as they combine the rote counting with an action. This leads to being able to touch and count objects.

Demonstrate each step in *I do, you do* format. Check to be sure that the movements are said precisely with each number word, so that one word corresponds to one action just as students pair one number word with one object in today's lesson.

- Clap 1 time and count 1 at the same time.
- Clap 2 times and count to 2 at the same time.
- Clap 3 times and count to 3 at the same time.

- Stomp 1 time and count 1 at the same time.
- Stomp 2 times and count to 2 at the same time.
- Stomp 3 times and count to 3 at the same time.

Repeat the process but with different actions.

NOTE ON LITERACY CONNECTION:

This lesson uses characters and items from the classic children's tale "Goldilocks and the Three Bears." Many children may be familiar with this story, but some may not be. Read the story ahead of time to make this lesson more engaging and to provide a fun link to literacy.

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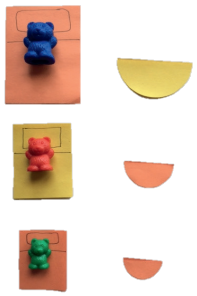
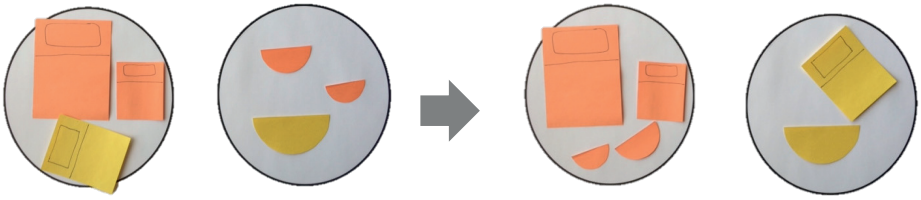
Application Problem (4 minutes)

Materials: (T) 2 sorting mats (Lesson 5 Template), 3 bears, 3 rectangle beds cut from construction paper (2 orange, 1 yellow), 3 semi-circle bowls cut from construction paper (2 orange, 1 yellow)

Ask children to recall how they sorted items yesterday in more than one way (by color, shape, size, type, use).



Introduce students to the three bears one at a time, matching each bear's bed and bowl as pictured to the right. Next, ask students to sort the items first by type (put the bowls on one mat and the beds on the other). Then, have them sort the bowls and beds by color as pictured below. Have students talk about the similarities and differences of objects in each group.



Note: This Application Problem reviews sorting one set of items into two given groups and provides groups of 3 that can be counted in the Concept Development. The two colors work not only as an attribute for sorting, but also as a subtle way for students to begin to see that 1 and 2 are embedded in a quantity of 3.

Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) Girl doll, 3 paper bowls, 3 chairs (e.g., doll furniture), 3 paper beds, 3 bears

Note: Use "Goldilocks and the Three Bears" as a playful context for counting to 3. Limit the details of the story so that counting remains the primary objective.

1. Hold up a doll. Say, "This is Goldilocks. One day she found a cozy cottage in the forest, and she walked right in."
2. Show the bowls. Say, "She saw bowls of porridge and decided to try them. One big bowl was too hot. One middle-sized bowl was too cold. One tiny bowl was just right."
3. Ask students, "**How many** bowls are there?"
4. Say, "Let's touch each bowl and **count** together, 1, 2, 3."
5. Use self-talk, "Three is the last number I said, so there are 3 bowls."

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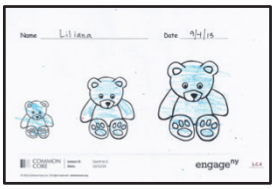
6. Guide students to use the sentence stem, "There are… (3 bowls)." Repeat chorally.
7. Continue the Goldilocks story, stopping after each part (chairs, beds, bears) to ask students a *how many* question. (Repeat Steps 3–5 above.) As students begin to use the sentence stem independently, reduce prompting.

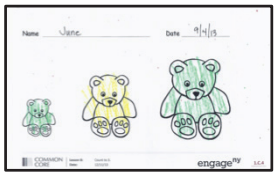
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Students who are struggling with cardinality may continue to count each item, 1, 2, 3, when asked how many. Guide them to understand that the last number tells how many. Continue the lesson pattern to provide students an opportunity to practice this concept.

Part 2: Practice

Materials: (S) Problem Set, crayons, baggie containing 3 bears: 1 small, 1 medium sized, and 1 large (make some baggies with 3 of the same color bears, some with 2 the same and 1 different, and some with all 3 different)





1. Choose two students to model the activity, as shown in the sample vignette.
   T: Matty and Carlito, will you be my helpers? (Give them each a baggie.)
   T: Matty, take your bears out and place them on the table. (Allow student time to place bears.) Carlito, you are going to ask a very important question, "How many bears are there?"
   S: How many bears are there?
   T: Matty, touch and count your bears while Carlito watches and listens carefully to your counting. (Allow students time to count and listen.) Right! Now, you switch jobs.
2. Pair students at tables, and give one baggie to each student.
3. Allow partners time to practice asking "How many…?" while touching and counting objects.
4. Hand each child a Problem Set. Instruct students to touch and count the bears for their partner.
5. Show children how to color the Problem Set to match a baggie of bears. Provide work time.
6. Circulate as students work and ask, "How many bears have you colored?"

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Student Debrief (5 minutes)

Lesson Objective: Count up to 3 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

Have children bring their completed Problem Sets to the circle. As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**how many, count**).

- How did we count objects today? (Notice if children describe touching and counting the bears.)
- What important question did you ask your partner about his or her bears?
- (Display student Problem Sets that show 3 bears colored in different ways: 3, 2 + 1, 1 + 1 + 1. Have students count the bears on each Problem Set.) What is the same or different about these groups?
- (Show a Problem Set with 2 bears in one color and 1 in another color.) How many bears are in this group? How many green bears? How many yellow bears?

CENTER CONNECTION:

The dramatic play center is a perfect place for children to practice counting to 3 while reenacting the story. Have sets of three objects (bowls, chairs, beds) ready for students who are working to master one-to-one correspondence and cardinality. Other students may be ready to start counting out 3 bowls to match with 3 bears.

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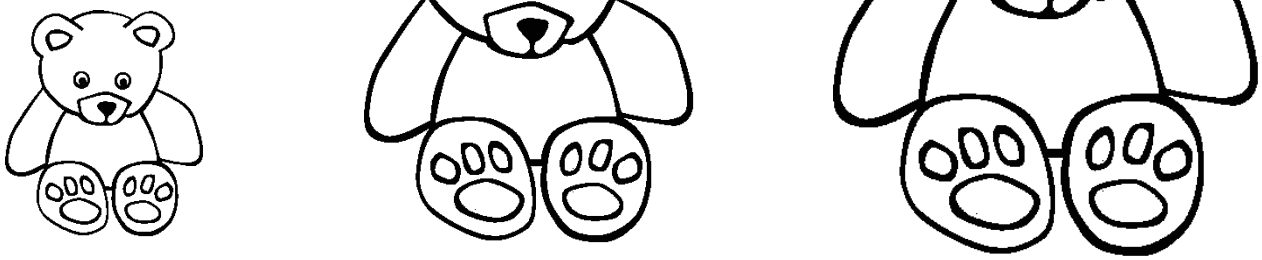

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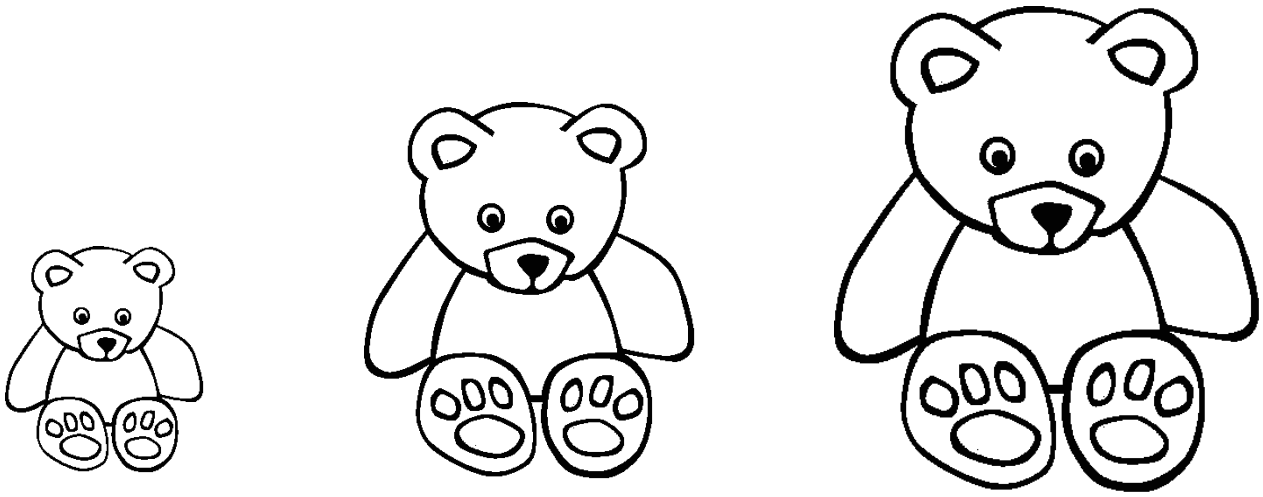

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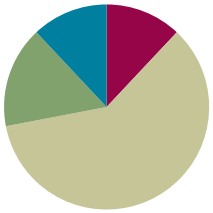
Lesson 9

Objective: Arrange and count up to 3 objects in scattered and linear configurations.

Suggested Lesson Structure

Fluency Practice	(3 minutes)
Application Problem	(4 minutes)
Concept Development	(15 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (3 minutes)

- Show Me Fingers **PK.CC.3** (1 minute)
- 1, 2, 3, Look at Me **PK.CC.1** (2 minutes)

Show Me Fingers (1 minute)

Note: In future lessons, students will be taught how to count on fingers the Math Way, which resembles a number line. For now, allow them to show fingers in any way that is comfortable for them.

T: I'm going to say a number, and I want you to show me that many fingers. Listen for the number. Ready? Show me 1 finger.

S: (Hold up 1 finger.)

T: Ooh, I see Ixchel is showing me her thumb; that's 1 finger. Very good, Ixchel. I see Starney is showing me his pointer finger; that's still 1 finger. Very good, Starney. Listen for the next number everyone. Ready? Show me 2 fingers.

Proceed similarly with 2 and 3. Inevitably, students will use different fingers to represent the numbers. Ask if they are still showing the correct number. If they are uncertain, encourage students to count their own fingers and their friends' fingers to verify. Invite students to use their words *the same but…* to describe these variations.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

To encourage effort and persistence, acknowledge student success and call attention to personal growth.

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1, 2, 3, Look at Me (2 minutes)

Note: Once students demonstrate mastery of rote counting up to 3, they can strengthen their understanding of the sequence by counting down from 3.

T: 1, 2, 3, look at me. (Make a silly movement.)

T/S: 3, 2, 1, let's have some fun! (Mimic silly movement.)

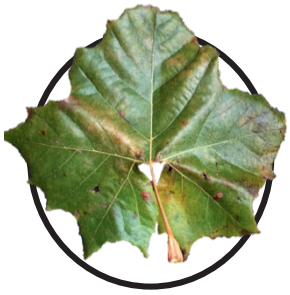
After a few iterations, experiment with varying the tempo, cadence, tone, and volume of the count.

Examples:

- Stretch it out: onnnnnnnne... twwooooooo… threeeeeeee.
- Staccato: One! Two! Three! (Each number is pronounced crisply, followed by a brief pause.)
- Silly voices: Say the chant with a baby voice, a giant's voice, and a squeaky mouse voice.
- Volume: Whisper, shout, classroom voice.

These slight variations increase the level of complexity by challenging students to recall the counting sequence while modifying the chant.

Application Problem (4 minutes)



Materials: (T) Set of 3 leaves (2 of an obviously different color, size, or shape from the other), 2 sorting mats (Lesson 5 Template)

Show the leaves and ask, "How many leaves do you see?" Touch the leaves as children count.

Ask children to share what they notice about the leaves, and then select one of the attributes described by students to sort. Have all the children count how many as a student places the leaves on the mat. Repeat for the group of 1.

Note: By asking students to identify attributes and then choosing one of those attributes for sorting, the activity validates students' emerging observational skills. Have students sort another way, and discuss changes or similartites between the two sorts.

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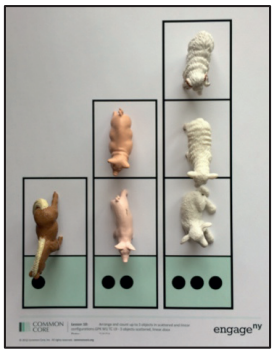
Concept Development (15 minutes)



Part 1: Concept Introduction

Materials: (T) 1–3 column template (Template 1); sorting mat (Lesson 5 Template); 6 objects in quantities of 1, 2, and 3 (e.g., 1 horse, 2 pigs, 3 sheep)

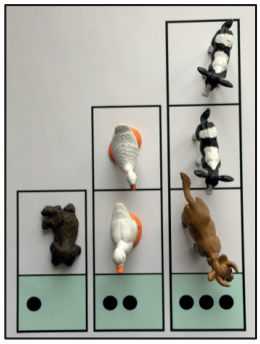
1. Place 6 plastic animals on the sorting mat. Tell students, "Old MacDonald's animals are waiting patiently in their pen for lunch."
2. Within the sorting mat, sort the animals into three groups with the students.
3. Touch and count the number in each group, possibly using the following suggested process:
   a. Ask, "How many horses do you see?"
   b. After modeling, touching, and counting 1, use self-talk: "I see 1 animal in this group."
   c. After students count the pigs, "1, 2," ask, "How many do you see?" Guide students to say, "I see 2 animals in this group." (Repeat with 3.)
4. Tell students, "Before they can eat, the animals have to line up."
5. Place the 1–3 column template next to the sorting mat. Point to the 1-dot column and ask, "How many animals will eat in this line?" and "Which group has 1 animal?" Have a student place the horse in the box above the dot.
6. Repeat for 2 dots and 3 dots. After each group is placed in a line, guide students to discover that the number of animals stays the same, even though the way they are arranged changes.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide frequent checks for understanding of vocabulary. Practice animal names throughout the day, through songs and stories such as the popular *Brown Bear, Brown Bear, What Do You See?* Also, when students use the animal names in discussions, be sure to pair names with a concrete representation.

Part 2: Practice

Materials: (S) Per pair: tray with 1–3 column template (Template 1), 6 pre-sorted objects per tray (e.g., 1 rabbit, 2 ducks, and 3 cows)



1. Pair students and send them to the prepared tables.
2. Invite students to pretend they are farmers. They must help their animals get into groups and then line up to eat.
3. Have students sort their animals into groups by type.
4. Guide partners to point to each set of dots on the template and ask, "How many animals will eat in this line?"
5. Partners take turns touching and counting the number of dots, finding the animals that match the count, and lining up the animals. MP.6

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Student Debrief (3 minutes)

Lesson Objective: Arrange and count up to 3 objects in scattered and linear configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**line**).

- Will Old MacDonald be able to count the animals better if they are in a line? Why?
- (Hold up a dot card with 1, 2, or 3 dots (Template 2).) This many animals are lining up for lunch on Old MacDonald's farm. On your fingers, show me how many animals are in line. (Continue with 2 and 1, repeating all of the dot cards.)
- (Hold up the 5-group strip with 3 dots (Lesson 6 Fluency Template).) Does this remind you of the animals lining up for lunch? How is it the same?

CENTER CONNECTION:

Practice counting to 3 in different configurations in the block center. Select 3 blocks, have children playfully mix them up and count how many. Then, ask the children to line up the blocks and count again. Some students use conservation to understand that the number of blocks does not change when the blocks are rearranged.

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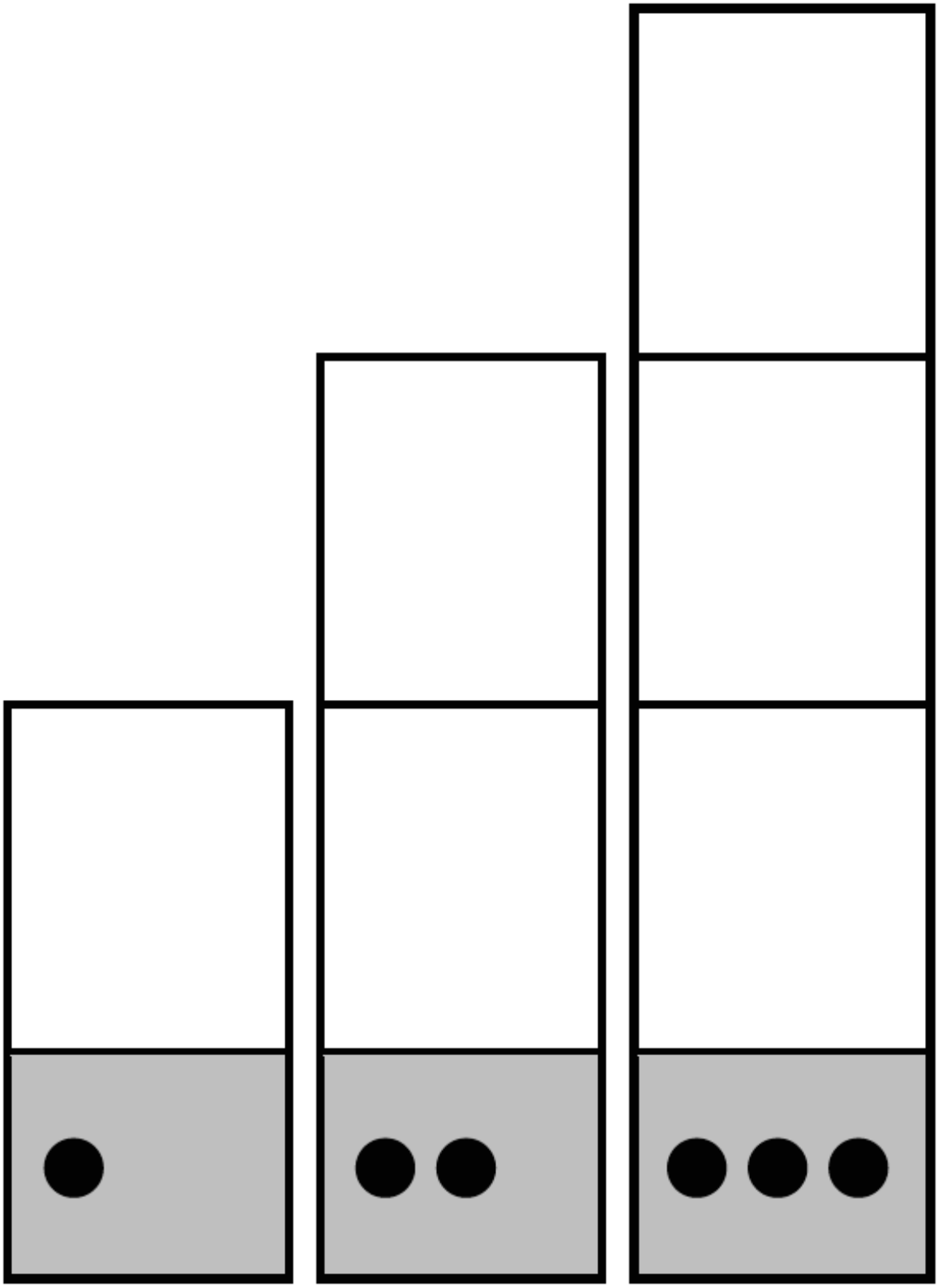

1–3 column template

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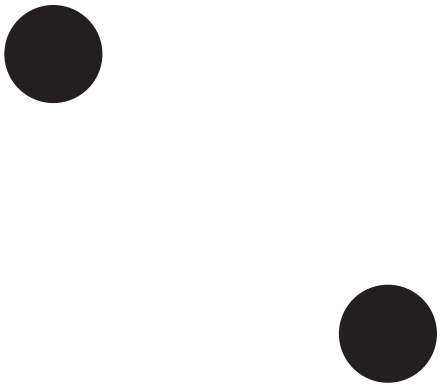
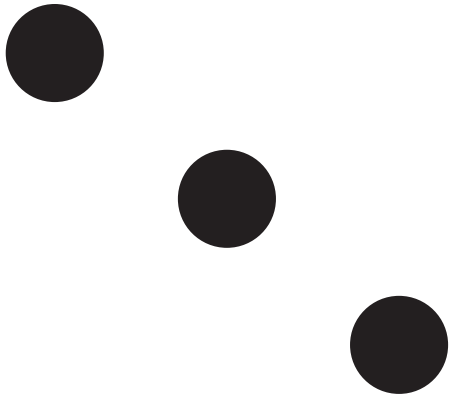
Dot Cards

Note: Consider making laminated sets on cardstock, as dot cards will be used in multiple lessons.





dot cards 1–3 (dice configuration)

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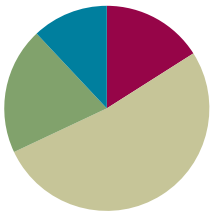
Lesson 10

Objective: Arrange and count up to 3 objects in scattered and linear configurations.

Suggested Lesson Structure

Fluency Practice	(4 minutes)
Application Problem	(5 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (4 minutes)

- Peek-a-Boo Counting **PK.CC.3b** (2 minutes)
- 1, 2, 3, 4, Touch the Floor **PK.CC.1** (2 minutes)

Peek-a-Boo Counting (2 minutes)

Materials: (T) 3 large objects (e.g., book, banana, and teddy bear), 2 manila file folders with ends stapled together to form a screen

Note: In this activity, students develop the ability to visualize a quantity and strengthen their memory to answer *how many* questions to 3. Students are encouraged to subitize but are given wait time so that those who wish to count may do so.

T: (Prior to beginning the activity, have 1 object placed on a desk or table, behind the screen.) Peek-a-Boo! (Raise and lower the screen.) Peek-a-Boo! (Again.) There is something behind this screen. Did you see it? (Lift and replace the screen.)

T: How many things did you see?

S: 1.

T: Very good. Let's play Peek-a-Boo again. This time there could be 1 thing, 2 things, or 3 things. (Place 2 objects behind the screen, and lift the screen.)

T: (Replace the screen.) When I give the signal, tell how many things you saw that time.

S: 2.

Continue in this manner to 3 then in random order. As students show mastery, see if they can hold the number in mind for a slightly longer period of time. This improves their ability to visualize a quantity and match it to a number.

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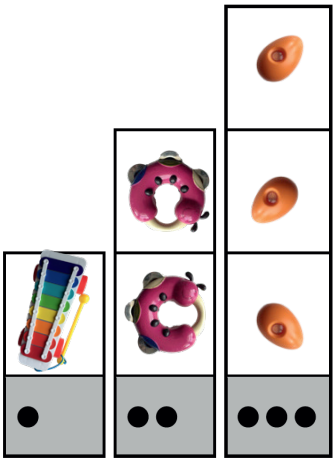
1, 2, 3, 4, Touch the Floor (2 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Students need to be comfortable rote counting to 4 before they work with a quantity of 4.

Count, "1, 2, 3, 4," then say, "Touch the floor!" and have the students touch the floor. Repeat the count and add the following actions: Point to the door, start to snore, give a roar, swim to shore. To add excitement, count slowly and say the action rapidly.

Application Problem (5 minutes)

Materials: (T) 1–3 column template (Lesson 9 Template 1) drawn on large butcher paper with enough space for students to stand on empty boxes, musical instruments in quantities 1–3 (e.g., 1 xylophone, 2 tambourines, 3 shakers)



Ask students how they organized Old MacDonald's animals yesterday. (In a line.) Give the instruments to a set of children. Have the others direct the members of the band into the correct lines by counting each type of instrument and matching it to 1, 2, or 3 dots.

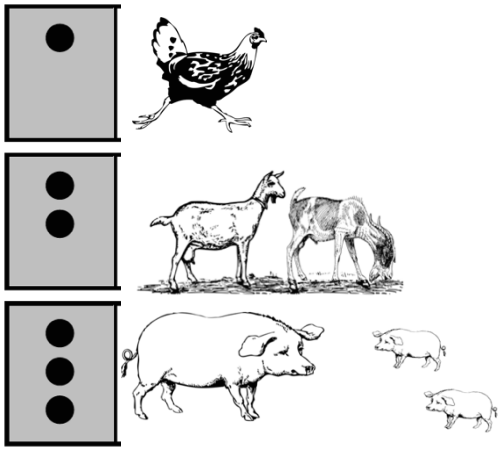
Invite the band to play along as the class sings "Old MacDonald Had a Farm."

Note: This problem allows students to practice a familiar skill, counting up to 3 objects arranged in a linear configuration and matching the count with a dot configuration. Singing "Old MacDonald Had a Farm" previews some of the farm animals they will use in the lesson. Use images of the animals while singing to support language learners.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Chart paper with 1-, 2-, and 3-dot configurations along the side, 3 farm animal pictures (Template 1), tape



1. Display chart paper with dot configurations. Tell students, "Let's look at some animals you might see on Old MacDonald's farm."
2. Show the picture of a chicken and ask, "How many chickens can you count?" Call a student to touch and count, "1."
3. Ask students where to put the chicken on the chart. Invite a student to tape the chicken next to 1 dot.
4. Guide students to say, "The number 1 tells how many."

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5. Repeat the process with the pictures of 2 goats and 3 pigs. Repeat Steps 2–4, guiding students to match the number of animals with the correct number of dots.

Part 2: Practice

Materials: (S) Per pair: 1 tray with a baggie of 6 farm animal cards (Template 2), 1 baggie of 6 dot cards with 2 each of numerals 1, 2, and 3 (Template 3); Problem Set

1. Pair students and send them to prepared tables to count the animals on Old MacDonald's farm. Partner A takes the farm animal card baggie. Partner B takes the dot card baggie.
2. Partner A chooses a picture, touching and counting the animals.
3. Guide Partner B to ask, "How many _____ (cows, pigs, etc.) can you count?" Partner A responds, "I can count…."
4. Partner B finds the card with the number of dots that matches the count, placing it next to the picture card.
5. Once they have matched all the picture and dot cards, partners switch roles.
6. Distribute a Problem Set to each student. Students draw a line with their fingers from the number of objects in the picture to 1, 2, or 3 dots.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

To encourage effort and persistence, provide concrete representations of the animals to pair with the pictures to help students who may have difficulty moving from the concrete to the pictorial representations.

Student Debrief (3 minutes)

Lesson Objective: Arrange and count up to 3 objects in scattered and linear configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

CENTER CONNECTION:

Invite students to recreate Old MacDonald's farm in the dramatic play center. They can practice counting groups of animals as they play and as they line up to eat. The difficulty of counting moving animals will help children see the benefit of counting objects in a line.

- Which animals on Old MacDonald's farm were in a line? Was it easier to count them?
- (Discuss the Problem Set.) Which group of animals matched with 1 dot, 2 dots, 3 dots?
- (Place 3 toy animals on a tray in a scattered configuration.) How can we arrange these in a line? How many animals are there now? Is it the same number?

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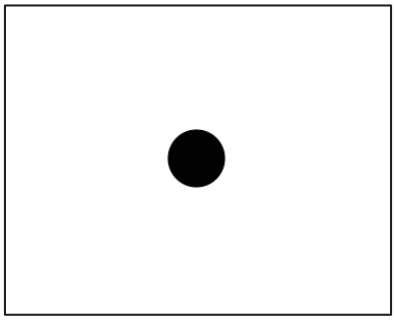
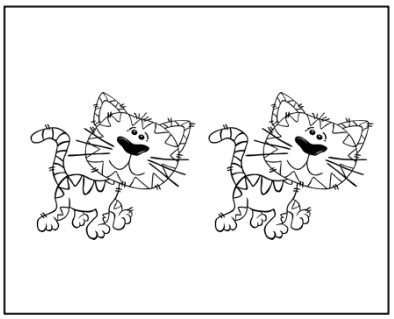
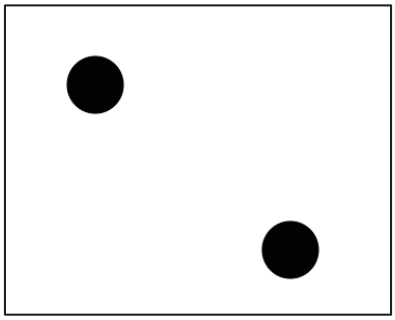
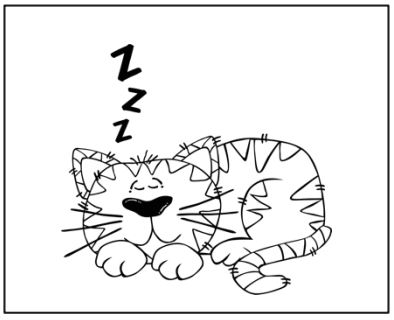
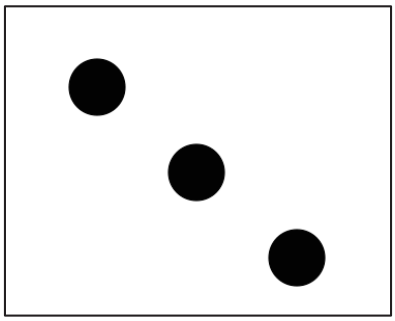
Point to the pictures that match by making a line with your finger. Tell your partner how many dots or cats you count.

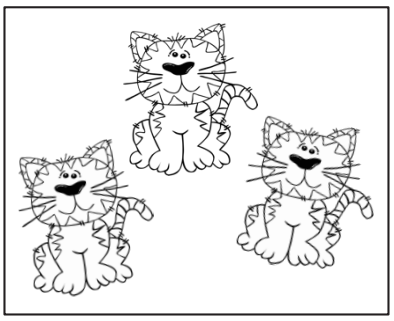












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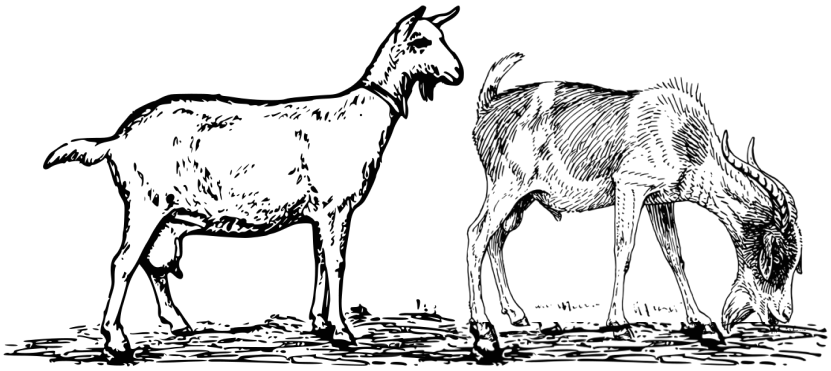

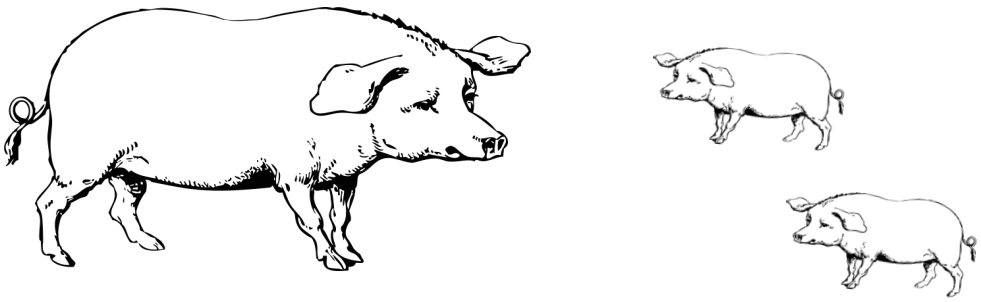

farm animal pictures

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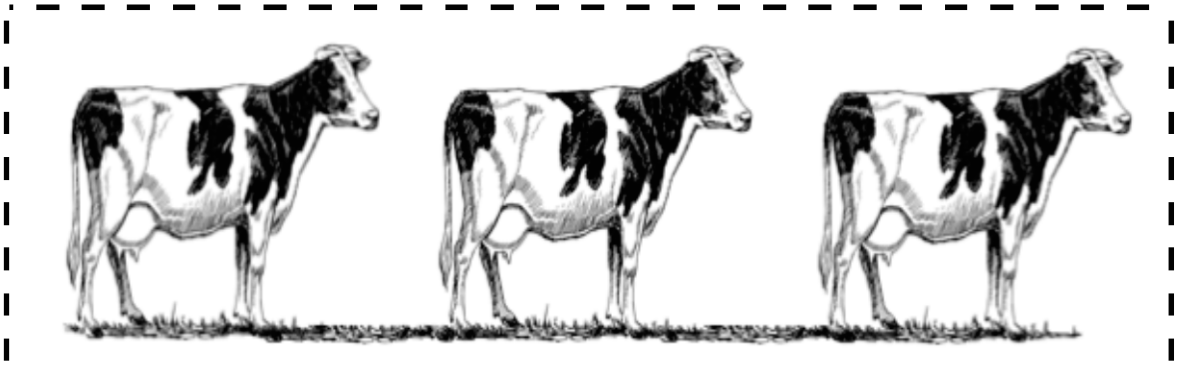

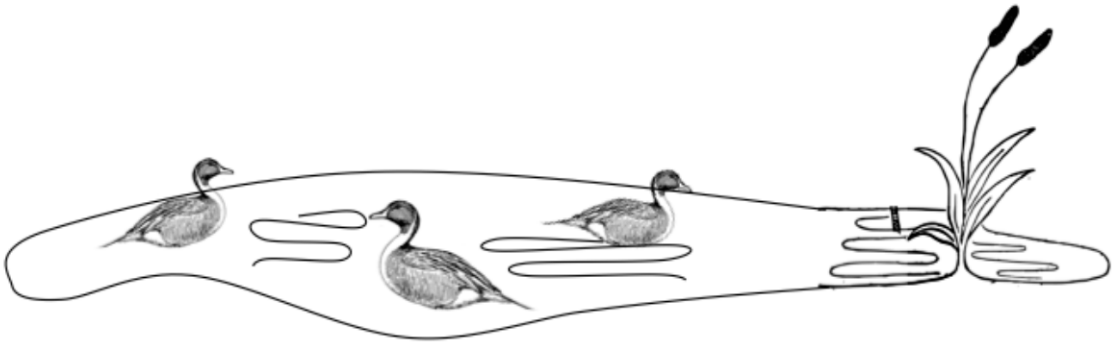

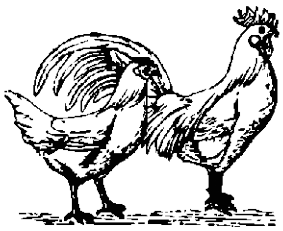

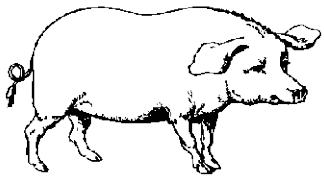

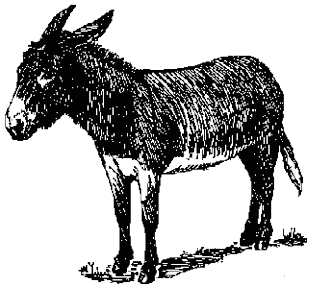

farm animal cards

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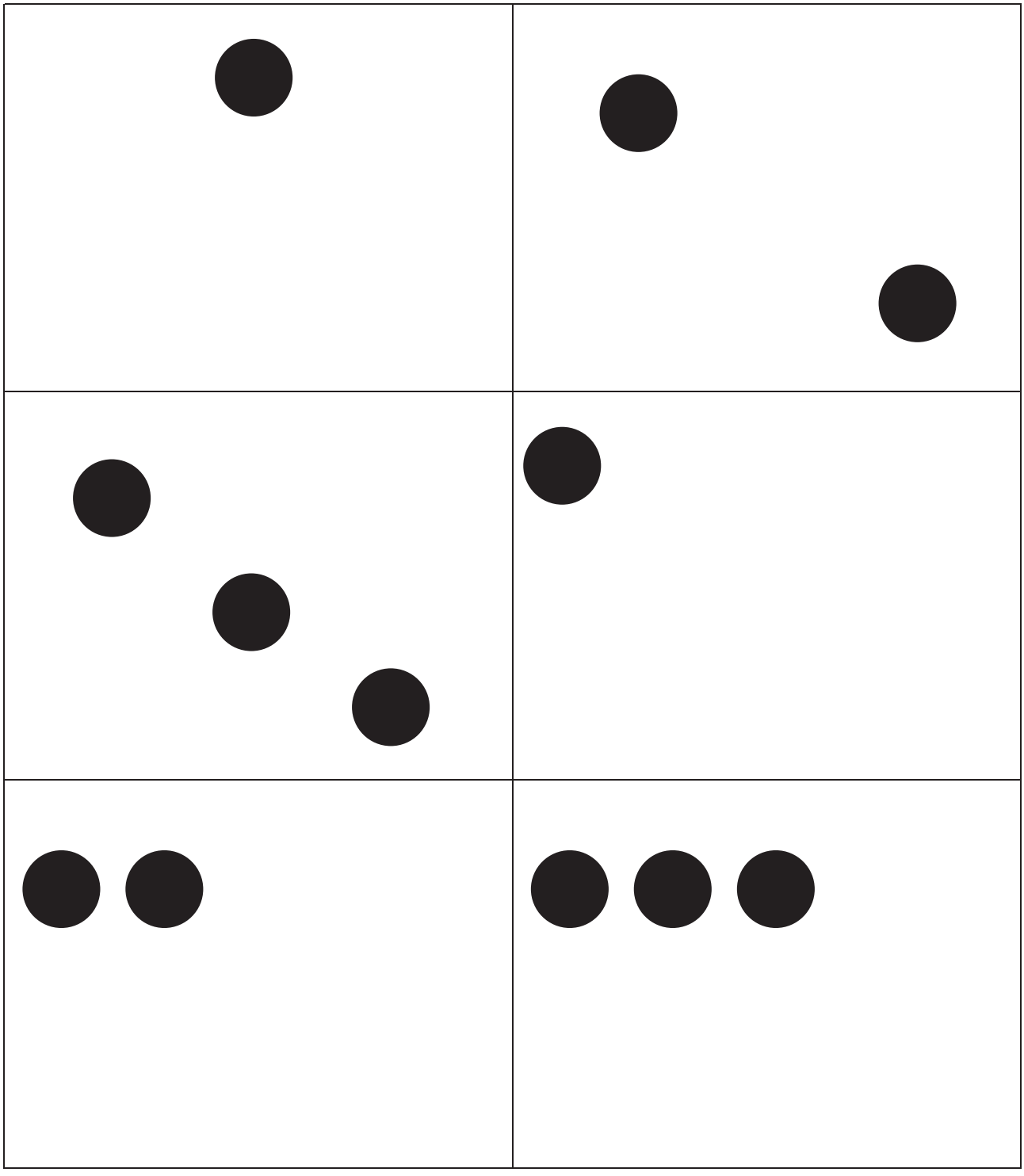

dot cards

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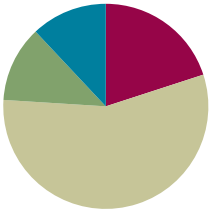
Lesson 11

Objective: Arrange and count up to 3 objects to play a game.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

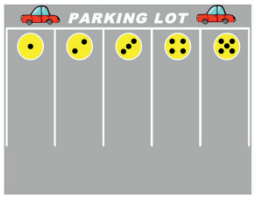
Fluency Practice (5 minutes)

- Dot Path Parking Lot **PK.CC.3a** (3 minutes)
- 1, 2, 3, 4, Touch the Floor **PK.CC.1** (2 minutes)

Dot Path Parking Lot (3 minutes)

Materials: (T) Photograph of a parking lot (optional) (S) Per pair: 3 toy cars, dot path parking lot (Fluency Template) folded to show only 3 of the dots and spaces

Note: In this activity, students practice one-to-one correspondence within a familiar context, preparing them for the counting game in today's lesson.



T: (Show photo of parking lot.) Who has seen cars in a parking lot like this before?

S: (Raise hands.)

T: In a parking lot, each car gets its own space, just like each student has his own chair in our classroom. In a parking lot, the lines show where to park. Let's practice parking our toy cars in our little parking lots, like this (demonstrate how to *drive* each car into its space while counting to 3). One partner will be the driver; the other partner will listen for good counting. Take turns and have fun!

1, 2, 3, 4, Touch the Floor (2 minutes)

Note: This fluency activity was selected in anticipation of future lessons. Students need to be comfortable rote counting to 4 before they work with a quantity of 4.

Count, "1, 2, 3, 4," then say, "Touch the floor!" and have students touch the floor. Repeat the count and add the following actions: Point to the door, start to snore, give a roar, swim to shore. To add excitement, count slowly and say the action rapidly.

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Application Problem (3 minutes)

Materials: (S) Blank 5-group strip (Template 1) or 1" wide strip of blank paper, crayon

Have students search around the room for items that are grouped together in a linear configuration (e.g., paint bottles, books, chairs at table). Then, give each student an empty 5-group strip and have him choose a line (of 2 or 3 objects), drawing that number of dots on his strip (from left to right) with a crayon and sharing it with a partner.

Note: As children identify and count objects arranged in linear configurations in their classroom environment, they begin to connect the math concepts they are learning to the real world. If children are not ready to draw dots, use stickers to create a dot strip.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Bear game board (Template 2), 2 teddy bear counters (e.g., 1 red, 1 blue), stack of 9 dot cards with 3 threes, 3 twos, 3 ones (Lesson 10 Template 3)

1. Show teddy bear counters and tell students, "Let's play a game! These bears are going to march to get to the beehive!"
2. Choose two students, Partner A and Partner B, to model the game. Give Partner A the red bear and Partner B the blue bear. Both bears should be placed at the start sign.
3. Partner A picks a card from the stack. Partner B asks, "How many dots are there?"
4. Partner A touches and counts the number of dots on the card and moves the red bear that many footprints along the trail. Partner B asks, "How many spaces did your bear march?"
5. The class counts the number of spaces the red bear traveled on the trail.
6. Guide Partner B to repeat Steps 3–5. Focus on cardinality by ensuring the bear stops on the last number counted, "The bear stops moving when he gets to [number of dots on card]!"
7. Continue to alternate between Partners A and B.

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Part 2: Practice

Materials: (S) Per pair: bear game board (Template 2), 2 teddy bear counters (e.g., 1 red, 1 blue), stack of 9 dot cards with 3 threes, 3 twos, 3 ones (Lesson 10 Template 3)

1. Pair students and send them to the prepared tables.
2. Tell students to take turns picking a card, counting, and placing their bear counters on the game board. Remind them to start at the sign. MP.6
3. Encourage partners to ask each other, "How many dots are there?" and "How many spaces did your bear march?"
4. Circulate and use parallel talk, emphasizing when students stop on the correct space: "Marshall counted 2 dots, so he moved his bear 2 spaces and stopped."

Student Debrief (3 minutes)

Lesson Objective: Arrange and count up to 3 objects to play a game.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- What number would help the bears get to the beehive the fastest? Slowest?
- What important question did you ask your partner when it was her turn to pick a card?
- Did your game board remind you of the dots you drew earlier? How?

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Some students benefit from a partner share before answering questions in a larger group. This provides students who may struggle with language an opportunity to practice and feel comfortable before sharing with the class.

CENTER CONNECTION:

Give children an opportunity to continue playing the game during centers. They can cut up the game board and make their own path from the sign to the beehive. Children who are ready can also make their own dot cards for the game.

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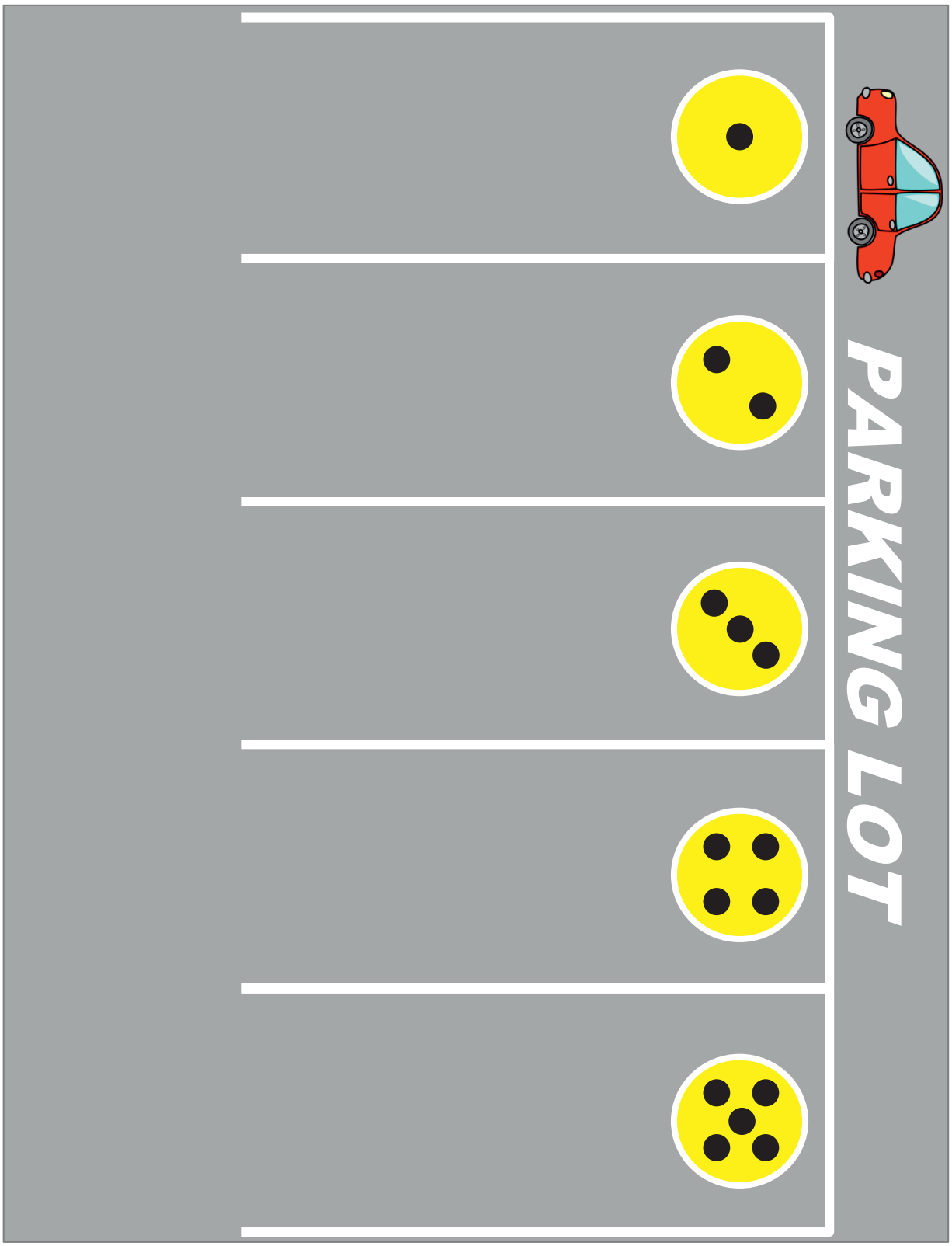

dot path parking lot

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blank 5-group strips

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bear game board

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Topic D

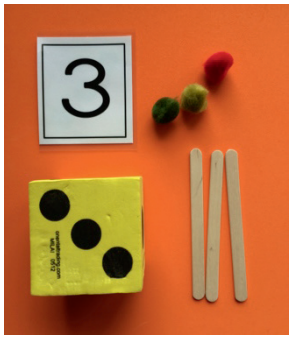
Matching 1 Numeral with up to 3 Objects

PK.CC.2, PK.CC.3ab, PK.CC.4, PK.CC.1

Focus Standards:	PK.CC.2	Represent a number of objects with a written numeral 0–5 (with 0 representing a count of no objects).
	PK.CC.3ab	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.
	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.
Instructional Days:	3	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

The important work of Topic D involves students answering *how many* questions for groups of up to 3, finding the matching numeral, and making groups. They work with prewritten numerals (e.g., foam numerals or numeral cards) as they build the fine motor skills necessary to start writing numerals in Module 5.

Lesson 12 has children matching a group of objects to a given numeral (**PK.CC.2**). In Lesson 13, children roll a die (with dot configurations of 1, 2, and 3), count to tell *how many* dots are shown, and find the matching numeral. Then they create two different groups to match the number of dots shown: one using puffballs and one using sticks. Matching one puffball to each dot supports students who are not yet able to retain the number and stop when that target number is reached. Modeling the number 3 using different objects helps students to realize that 3 describes the number of objects, not the objects themselves: 3 puffballs, 3 sticks, 3 dots, etc. Here they understand that the quantities in two very different sets are both represented by the number 3.



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In Lesson 13, the dots on the face of the die provided a visual cue for students and allowed them to make groups using one-to-one matching. In Lesson 14, the visual cue is removed as students are asked to show a group of up to 3 cubes. Following up on this, students are then shown the numeral 2 and asked to show that many cubes. Using cards with numerals on one side and dots on the other provides support for children who still need to match to create a group of 1–3 objects. Children need a solid understanding of all four parts of the number core (cardinality, number word list, one-to-one correspondence, and written number symbols) to reach this step.

Topic D fluency activities introduce rote counting to 5, which prepares children to work with quantities of 4 and 5 in the upcoming topics. Fluency activities continue to provide practice counting and subitizing 3. The Mid-Module Assessment is administered after Topic D.

A Teaching Sequence Toward Mastery of Matching 1 Numeral with up to 3 Objects	
Objective 1:	**Match the numerals 1, 2, and 3 to quantities. (Lesson 12)**
Objective 2:	**Make a group of up to 3 objects and match the numeral (concrete to abstract). (Lesson 13)**
Objective 3:	**Look at a numeral and count out a group of objects to match (abstract to concrete). (Lesson 14)**

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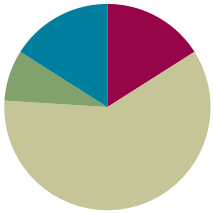
Lesson 12

Objective: Match the numerals 1, 2, and 3 to quantities.

Suggested Lesson Structure



Fluency Practice	(4 minutes)
Application Problem	(2 minutes)
Concept Development	(15 minutes)
Student Debrief	(4 minutes)
Total Time	**(25 minutes)**

Fluency Practice (4 minutes)

- Show Me Fingers **PK.CC.3** (1 minute)
- Peek-a-Boo Counting **PK.CC.3b** (2 minutes)
- 1, 2, 3, Look at Me **PK.CC.1** (1 minute)

Show Me Fingers (1 minute)

Note: In future lessons, students are taught how to count on fingers moving from left to right to set the foundation for subitizing five and for the number line. For now, allow them to show fingers in any way that is comfortable for them (see Lesson 9).

T: I'm going to say a number, and I want you to show me that many fingers. Listen for the number. Ready? Show me 1 finger.

S: (Hold up 1 finger.)

T: Ooh, I see Ixchel is showing me her thumb; that's 1 finger. Very good, Ixchel. I see Starney is showing me his pointer finger; that's still 1 finger. Very good, Starney. Listen for the next number everyone… Ready? Show me 2 fingers.

Peek-a-Boo Counting (2 minutes)

Materials: (T) 3 large objects (e.g., book, banana, and teddy bear), 2 manila file folders with ends stapled together to form a screen

Note: In this activity, students develop the ability to visualize a quantity and strengthen their memory to answer *how many* questions to 3. Students are encouraged to subitize but are given wait time so that those who wish to count may do so.

T: (Prior to beginning the activity, have 1 object placed on a desk or table behind the screen.) Peek-a-Boo! (Raise and lower the screen.) Peek-a-Boo! (Again.) There is something behind this screen. Did you see it? (Lift and replace the screen.)

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T: How many things did you see?

S: 1.

See full description in Lesson 10.

1, 2, 3, Look At Me (1 minute)

Note: Once students demonstrate mastery of rote counting up to 3, they can strengthen their understanding of the sequence in this activity by counting down from 3.

See full description of activity in Lesson 9.

T: 1, 2, 3, look at me. (Make a silly movement.)

T/S: 3, 2, 1, let's have some fun! (Mimic silly movement.)

Application Problem (2 minutes)

Materials: (T) 1 flower, 2 bees, 3 bluebirds (Template 1, cut out)

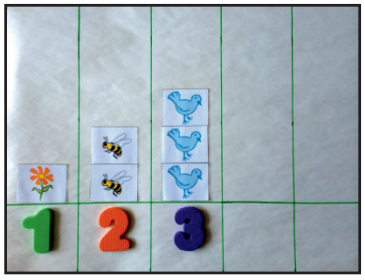
Give each object to a child and have them stand in front of the group. Teach students the following rhyme.

One little flower, 2 little bees,
3 little bluebirds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3.

Ask questions such as, "How many flowers are there?" "How many bees?" "How many bluebirds?"

Note: The Application Problem reviews counting up to 3 in preparation for matching numerals to quantities in Concept Development. This rhyme will extend through Modules 1 and 3 until the class has created the charts pictured to the right.

Concept Development (15 minutes)



Part 1: Concept Introduction

Materials: (T) Set of small magnetic numerals 1, 2, 3; set of large numerals 1, 2, 3; pre-sorted sets of 1, 2, and 3 magnetic objects (e.g., 1 flower, 2 bees, 3 bluebirds from Template 1); large white board and marker (S) Baggie containing 1, 2, or 3 objects

Note: In Topic E, numbers 4 and 5 will be added to this chart. Select a white board that can be used for this purpose for several days and leave space on the right side for the additions. Alternatively, use chart paper and objects and numerals with tape on the back. In Module 3, a similar chart will be created for numbers 6–10.

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1. Make three vertical columns on the white board. Place 1 flower in the first column. Ask students, "How many flowers are there?" Lead them to respond, "There is 1 flower."
2. Place the numeral 1 below the flower. Tell students, "This is the **number** 1." Students repeat statement. Repeat the process for the numerals 2 and 3, with 2 bees and 3 bluebirds.
3. Take the numerals off the board and give them to three students.
4. Instruct the student with the number 1 to hold it up. Ask students, "Which group has 1 object?" Instruct the student to affix it under the flower. Repeat with the numerals 2 and 3.
5. Display a large number 1, 2, and 3 in different areas of the classroom.
6. Pass out baggies, one to each student, containing either 1, 2, or 3 objects. Tell students to move to the number that matches the number of objects in their baggie.
7. Once all students are standing by a number, have them check to see if everyone in their area has the same number of objects. Guide all the students at number 1 to clap once, all the students at number 2 to clap twice, and all the students at number 3 to clap three times.

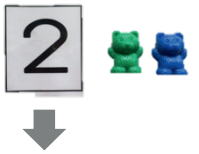
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide an opportunity for the students to practice with the numerals 1, 2, and 3 throughout the day. This repeated practice will help the students connect the numerals to their quantities.

Part 2: Partner Practice (7 minutes)

Materials: (S) Per pair: numeral cards (Template 2 cut apart); baggies containing 1, 2, or 3 objects or a dot card (Lesson 10 Template 3)

1. Match students with a partner and tell them, "Let's play a game! One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a bag and ask your student how many things are in the bag."
3. Say, "Students, count the number of things in the teacher's bag. Then, find the number that shows how many you counted."
4. Students switch roles, repeating Steps 2 and 3.
5. Circulate among groups and help students correctly match quantities to numerals. Show students how to use the dots on the back of the numeral cards to check their work.



Flip card to check.

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Student Debrief (4 minutes)

Lesson Objective: Match the numerals 1, 2, and 3 to quantities.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**number**).

CENTER CONNECTION:

Invite children to bring their numeral cards to centers today. They can count up to 3 objects and match the corresponding numeral card. Remind them to use the dots on the back to check their work.

- What did we do today?
- (Hold up the dot card that shows 2. Display foam numerals on carpet.) Which number matches these dots?
- (Write the numeral 1 on the board or hold up a foam numeral 1). Look at this number. How many is this? Show me on your fingers. (Continue with the numerals 2 and 3.)

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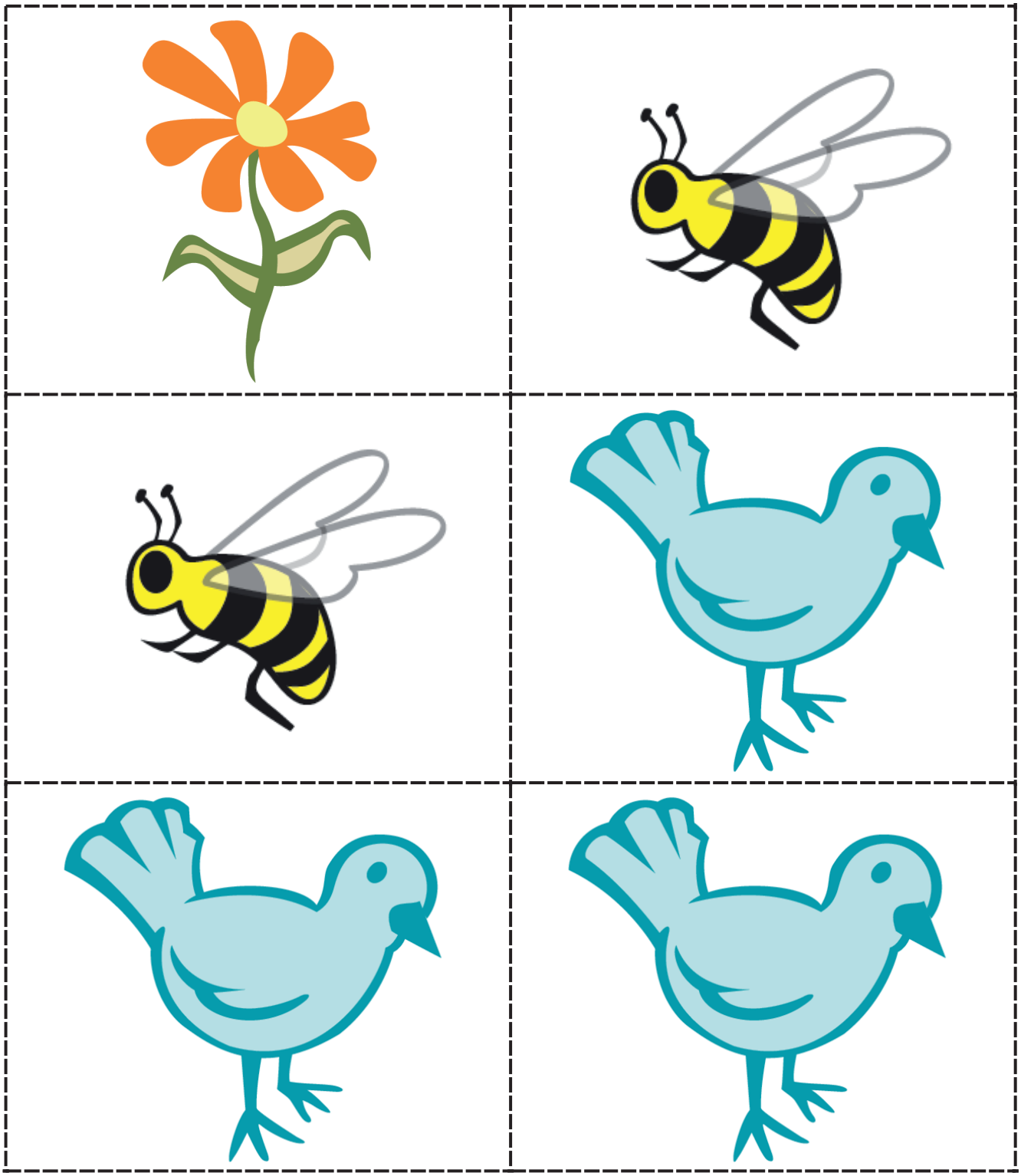

1 flower, 2 bees, 3 bluebirds

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To create numeral cards:

1. Print
2. Fold lengthwise so the outline on the numeral side matches the outline on the dot side.
3. While the paper is folded, cut out individual cards. Do not cut along the fold!
4. Laminate with cards still folded so that numeral and dots match.

Only 1–3 are needed for this lesson. Set aside other cards for use in future lessons.

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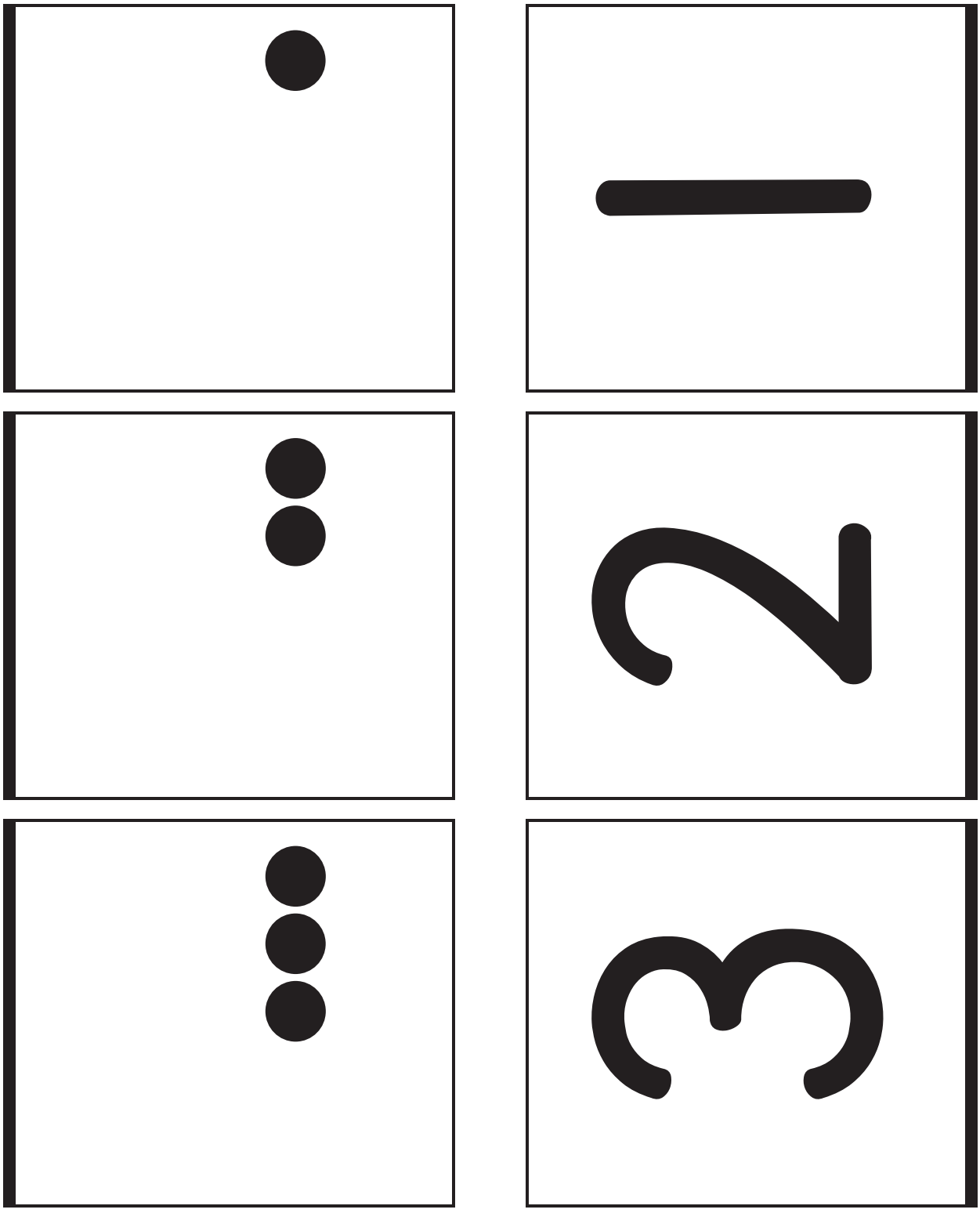

numeral cards

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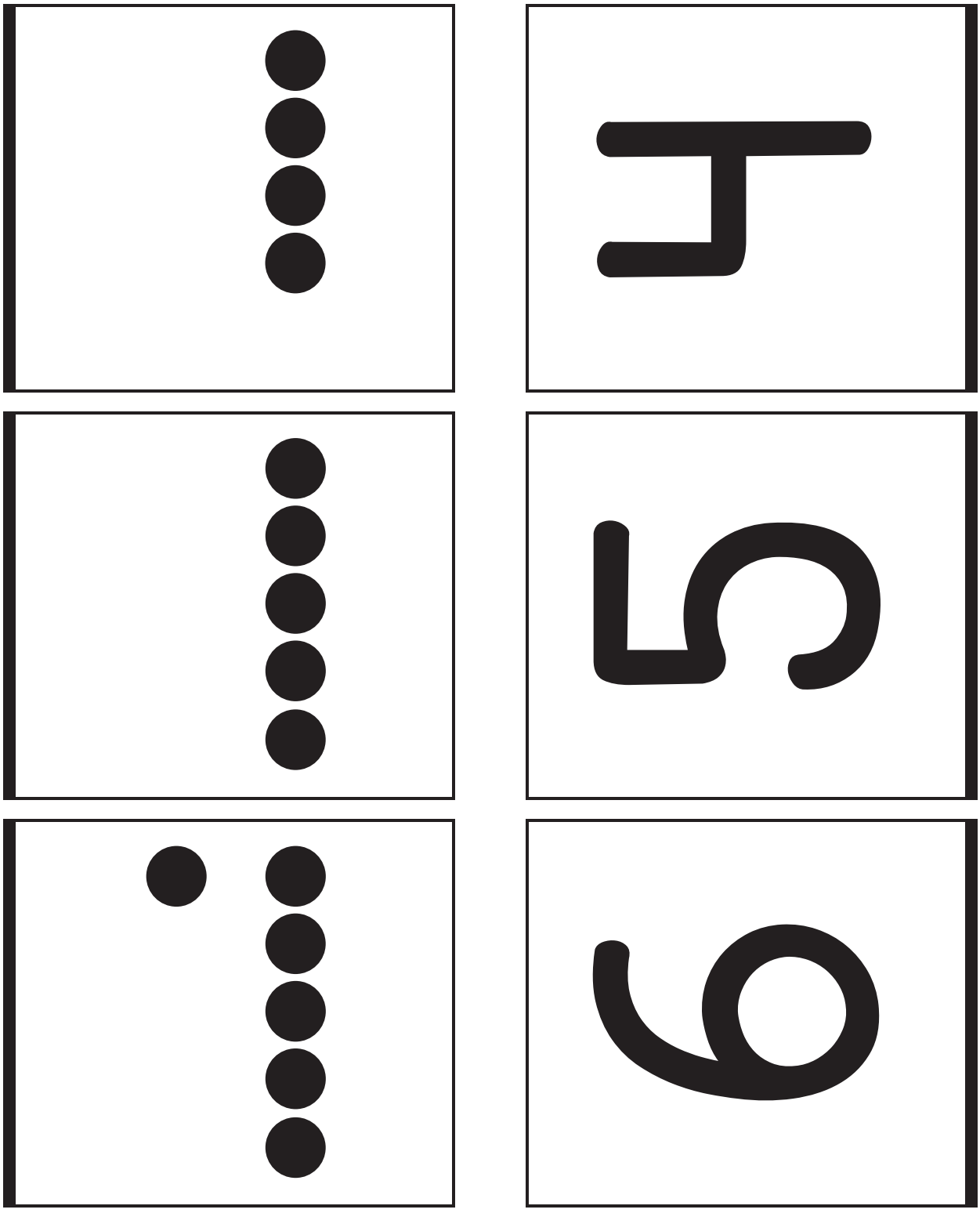

numeral cards

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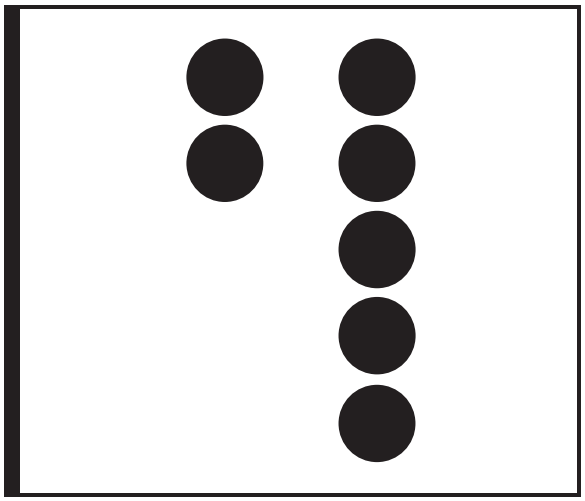

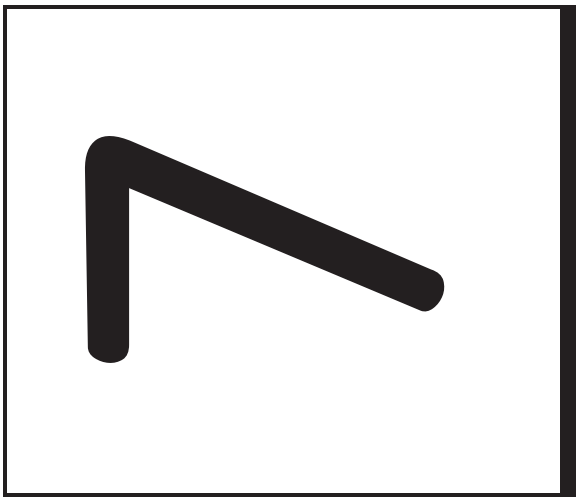

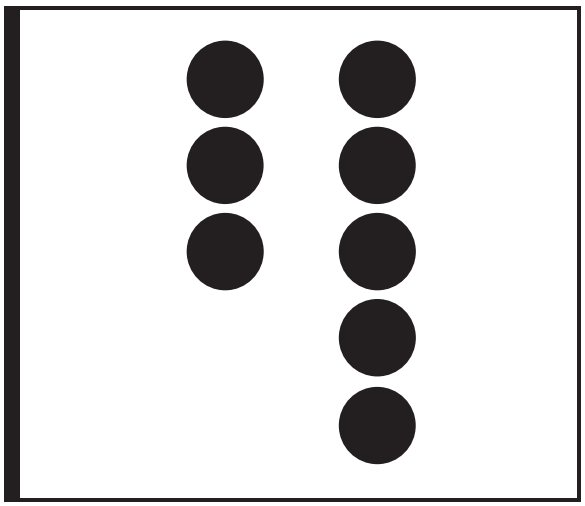

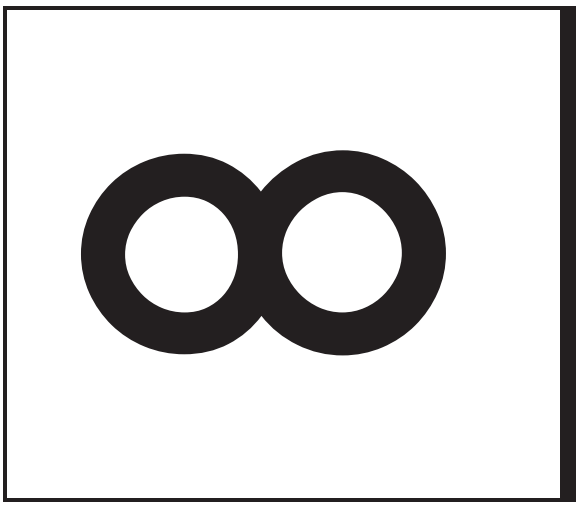

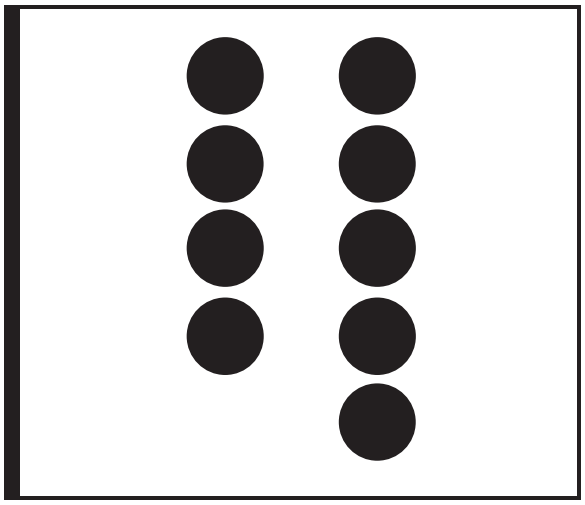

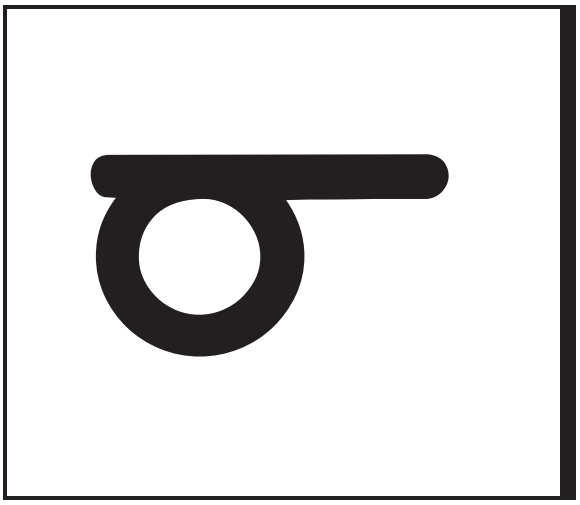

numeral cards

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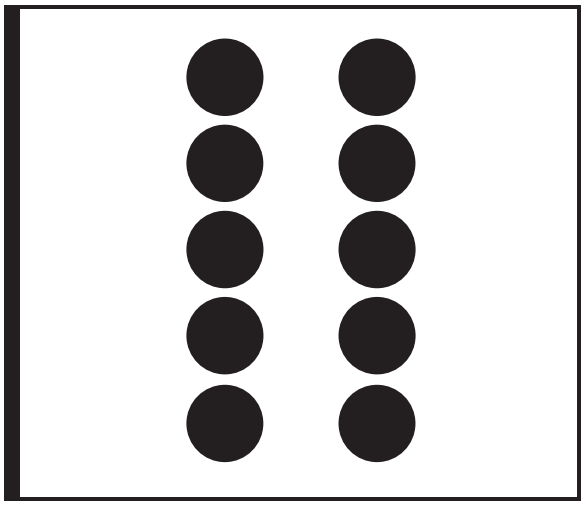

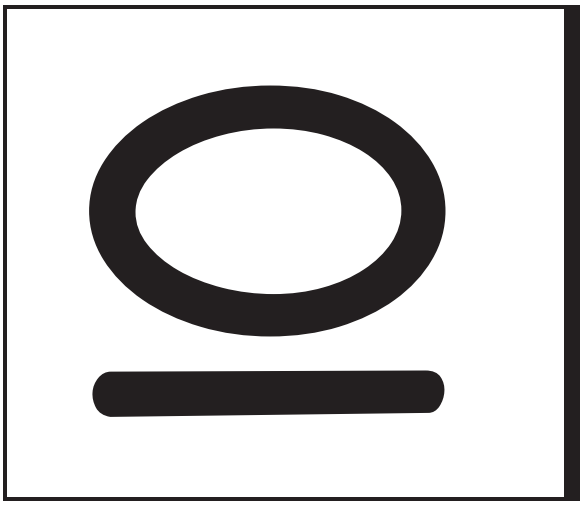

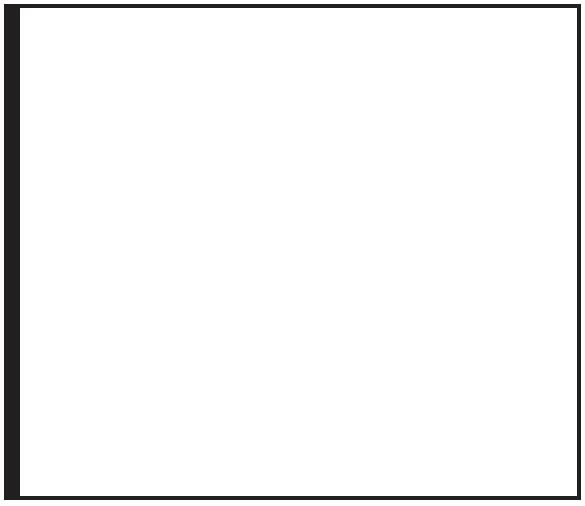

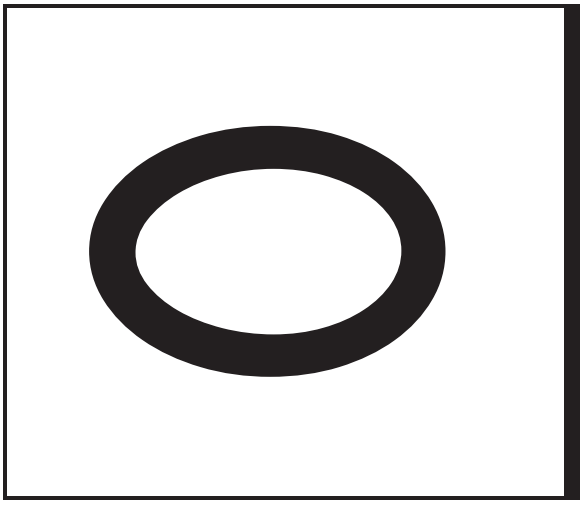

numeral cards

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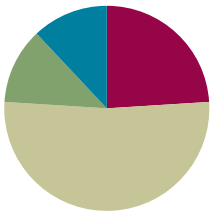
Lesson 13

Objective: Make a group of up to 3 objects and match the numeral (concrete to abstract).

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Dot Path Parking Lot **PK.CC.3a** (4 minutes)
- On 5 We Jive Chant **PK.CC.1, PK.CC.3a** (2 minutes)

Dot Path Parking Lot (4 minutes)

Materials: (S) Per pair: dot path parking lot (Lesson 11 Fluency Template), up to 5 toy cars

Note: In this activity, students practice one-to-one correspondence within a familiar context.

T: In a parking lot, each car gets its own space just like each student has his own chair in our classroom.

See full description in Lesson 11. Differentiate by folding the dot path to show 3 dots, 4 dots, or use the entire strip of 5. Replace the dots with numerals as students show mastery.

On 5 We Jive Chant (2 minutes)

Note: This fluency activity anticipates the need for students to be comfortable rote counting to 5 before counting 5 objects in Topic E.

1, 2, tie my shoe (act out tying shoe).

3, 4, close the door (act out closing a door).

On **5,** we jive (count 5 fingers and shake hips).

On **5,** we jive (count 5 fingers and shake hips).

Repeat chant.

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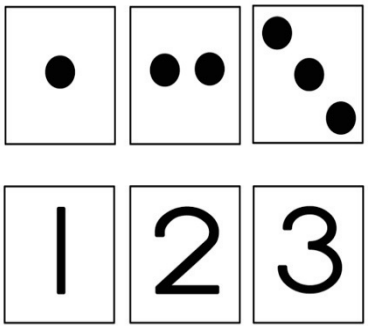
Application Problem (3 minutes)

Materials: (T) Dot cards 1–3 (Lesson 10 Template 3) (S) Baggie with numeral cards 1–3 (Lesson 12 Template 2)

Hold up a dot card showing 1, 2, or 3 (one at a time) and ask the students, "Which number matches these dots?" Have students find the matching number card and hold it up. Make sure to tell them the number so they can hear the number and visualize 1, 2, or 3 dots while they are matching the numeral. Ask students to then look around the classroom for numerals. Ask them to match the numeral with the number of objects that were counted if they can.



Note: This Application Problem reviews the numerals learned in the last lesson, which students will use in the upcoming Concept Development.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 5 cotton puffballs, 5 craft sticks, die with dots 1–3 (place tape over some of the dots on the 4, 5, and 6 faces if needed), numeral cards (Lesson 12 Template 2) or foam numerals

1. Display the numerals 1, 2, and 3.
2. Roll the die and ask students, "How many dots do you see?"
3. Example after students respond:
   - Touch and chorally count each dot, "1, 2, 3."
   - Have students point to the matching numeral.
   - Lay down 3 puffballs as students count.
   - Ask students, "How many puffballs are in this group?" Lead them to respond, "There are 3 puffballs."
   - Count out 3 sticks to match the 3 puffballs.
4. Repeat Steps 2–3.
5. Guide students to see that what is the same about the dots, the group of puffballs, and the group of sticks is the number 3; the number 3 tells how many objects are in each group.

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Some students may struggle to create a group of 3. Invite them to place their puffballs directly on top of the dots on the die as they count, placing one puffball on each dot.

Challenge students who are ready by adding in numerals. Put numerals and dot configurations on their die, or provide foam numerals for them to match to their quantities.

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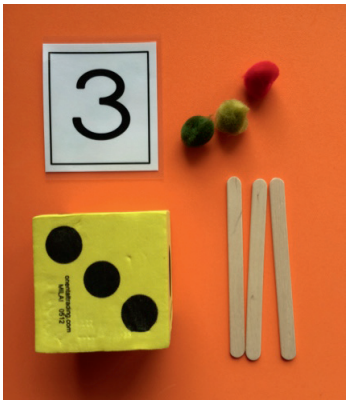
Part 2: Practice

Materials: (S) Per pair: tray with 5 cotton puffballs, 5 craft sticks, die with dots 1–3, foam numbers 1–3 or numeral cards (Lesson 12 Template 2)

1. Pair students and send them to tables with a tray.
2. Instruct students to take turns rolling the die, counting how many, and making groups with the same number of puffballs and sticks. MP.6
3. Instruct students to point to the matching numeral.
4. Encourage students to ask and answer *how many* questions. Circulate and use parallel talk: "I hear Aleem asking, 'How many sticks are in your group?'"
5. Check that the number in each group matches the dot configuration and numeral and that students are moving their puffballs and sticks into new groups as they count.



Student Debrief (3 minutes)

Lesson Objective: Make a group of up to 3 objects and match the numeral (concrete to abstract).

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, use new vocabulary, and explore new concepts.

- What tools did we use to count in our lesson today?
- How did you know how many puffballs or sticks to put in a group?
- (Show student tray with die, puffballs, and sticks matching.) Let's look at Sitiyana and Tashawn's work. What is the same about the dots, the puffballs, and the sticks? What number tells how many are in each group?
- I'm showing some fingers. Who can ask a *how many* question about my number of fingers?

CENTER CONNECTION:

The kitchen center is a perfect place to practice making groups of 3 or less. The *diners* can show how many meatballs they want by picking a dot card. The *chef* can count out the right number of meatballs for each plate using the dot cards to match.

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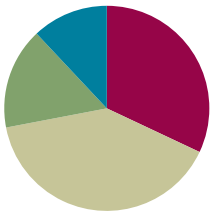
Lesson 14

Objective: Look at a numeral and count out a group of objects to match (abstract to concrete).

Suggested Lesson Structure

Fluency Practice	(8 minutes)
Application Problem	(4 minutes)
Concept Development	(10 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (8 minutes)

- Baggie Buddies **PK.CC.2** (2 minutes)
- On 5 We Jive Chant **PK.CC.1, PK.CC.3a** (1 minute)
- Pop Up 5 **PK.CC.3ab** (3 minutes)
- Counting Ice Cubes to 3 **PK.CC.3** (2 minutes)

Baggie Buddies (2 minutes)

Materials: (T) 3 objects (seasonally appropriate natural materials, such as leaves, sticks, and rocks, which are particularly engaging to students) (S) Baggie filled with numeral cards 1–3 (Lesson 12 Template 2)

Note: This fluency activity is intended to develop and maintain students' ability to match quantities with numerals up to 3.

1. Pass out baggies containing numeral cards 1, 2, and 3 to all students.
2. Hold up 1 object.
3. Ask students to tell how many.
4. Have students find the matching numeral card and hold it up.

Repeat with 1, 2, or 3 objects.

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On 5 We Jive Chant (1 minutes)

Note: This fluency activity anticipates the need for students to be comfortable rote counting to 5 before counting 5 objects using one to one correspondence in Topic E.

1, 2, tie my shoe (act out tying shoe).

3, 4, close the door (act out closing a door).

On **5,** we jive (count 5 fingers and shake hips).

On **5,** we jive (count 5 fingers and shake hips).

Repeat chant.

See Lesson 13 for directions.

Pop Up 5 (3 minutes)

Note: This quick counting game develops students' ability to count to 5. Conduct the activity as described in Lesson 5, but now the student who says the number 5 *pops up* (stands). Continue until all students are standing.

Begin with all students seated in a circle or around the rug.

Student A: 1 (remains seated).

Student B: 2 (remains seated).

Student C: 3 (remains seated).

Student D: 4 (remains seated).

Student E: 5 (stands, or pops up).

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students who are having difficulty recognizing numerals could benefit from a multi-sensory approach. For example, experiment throughout the day with numerals made with different textures such as sand paper or puffy paint. Kinesthetic learners might benefit from practicing with large numerals made from duct tape on the floor, stating the numeral name as they hop across the numeral.

Counting Ice Cubes to 3 (2 minutes)

Note: In this activity, students practice counting objects and answering *how many* questions to 3 in preparation for today's work with numerals.

Materials: (S) 3 linking cubes, small paper or plastic cup

T: (Pass out 3 cubes and a cup to each student.) Here are some ice cubes. Touch and count so you can tell how many.

S: (Count.)

T: How many ice cubes?

S: 3.

T: 3 what?

S: 3 ice cubes.

T: We are going to be restaurant workers. Our job is to put the ice cubes in the cups. I will call out the ice cube orders. Ready?

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T: 3 ice cubes.
S: (Put three linking cubes in the cup.)
T: How many ice cubes are in your cup?
S: 3 ice cubes!
T: Order filled. Put your three ice cubes back. Get ready for a new order.
S: (Empty their cups.)

Continue calling out different *orders* of ice cubes. The next time students do this activity, they will use a mat to relate the quantity to the numeral.

Application Problem (4 minutes)

Materials: (T) Large dice with dots for 1–3 (or Lesson 10 Template 3), numerals 1–3, 5-group strips (Template) (S) 5 craft sticks

Give each student a set of craft sticks. Show the students three fingers and ask them, "How many?" After they answer, ask them to lay down exactly the same number of sticks. Repeat the process using the dot configurations and 5-group strips for 1 and 2. Continue to use different representations of 1, 2, and 3 while students lay down exactly the same number of sticks.

Note: This activity asks students to count a group of sticks to match different representations of the numbers 1, 2, and 3. Such practice helps deepen their understanding of cardinality as they see that the same number can be represented in different ways. They will discuss how the representations are related in the Student Debrief.

Concept Development (10 minutes)

Part 1: Concept Introduction

Materials: (T) 5 cubes, numeral cards 1–3 (Lesson 12 Template 2)

1. Have a child select a number card and show it to the class. Ask all students to name the number.
2. Count out that number of cubes using self-talk to share the thinking involved (e.g., "I'll make a group to match the number 2. I'll count and stop when I get to 2. One (move one cube), 2 (move the second cube). Stop.").
3. Ask students if the group matches the number. If they are unsure, show how to match the cubes to the dots on the back of the card.
4. Repeat with another number. Invite students to say, "Stop!" when they hear the target number.
5. Silently show the number 1. Ask a volunteer to come up and count that many cubes.

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Part 2: Practice

Materials: (S) Baggie containing 5 cubes, numeral cards 1–3 (Lesson 12 Template 2)

1. Pair students and send them to prepared tables.
2. Tell Partner A to take a card from the stack and show the number without saying it. Tell Partner B to make a group of that number of objects. Then, they switch.
3. Encourage students to use the dots on the back of the cards if they need help remembering.
4. As the students work, circulate and describe what they are doing using parallel talk, (e.g., "Marissa is making a group of 3 cubes. She saw the number 3.").

Student Debrief (3 minutes)

Lesson Objective: Look at a numeral and count out a group of objects to match (abstract to concrete).

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, use new vocabulary, and explore new concepts.

- (Show the numeral 2.) I want to make a group of this many. How many cubes should I put in my group? (Repeat with 1 and 3.)
- (Show 3 sticks, the dot configuration for 3, and the numeral 3.) Which of these tells how many cubes I have? (Help students realize that all of these represent the quantity 3.)
- Who can ask a friend a *how many* question about the fingers you see me holding up? Which numeral matches my fingers? (Show numerals 1, 2, 3.)
- What math tools did you use to count today? Which ones do you have at home?

CENTER CONNECTION:

Use the kitchen center to make groups like yesterday. Today, have the *diners* use numeral cards to show the number of meatballs they want instead of dot cards.

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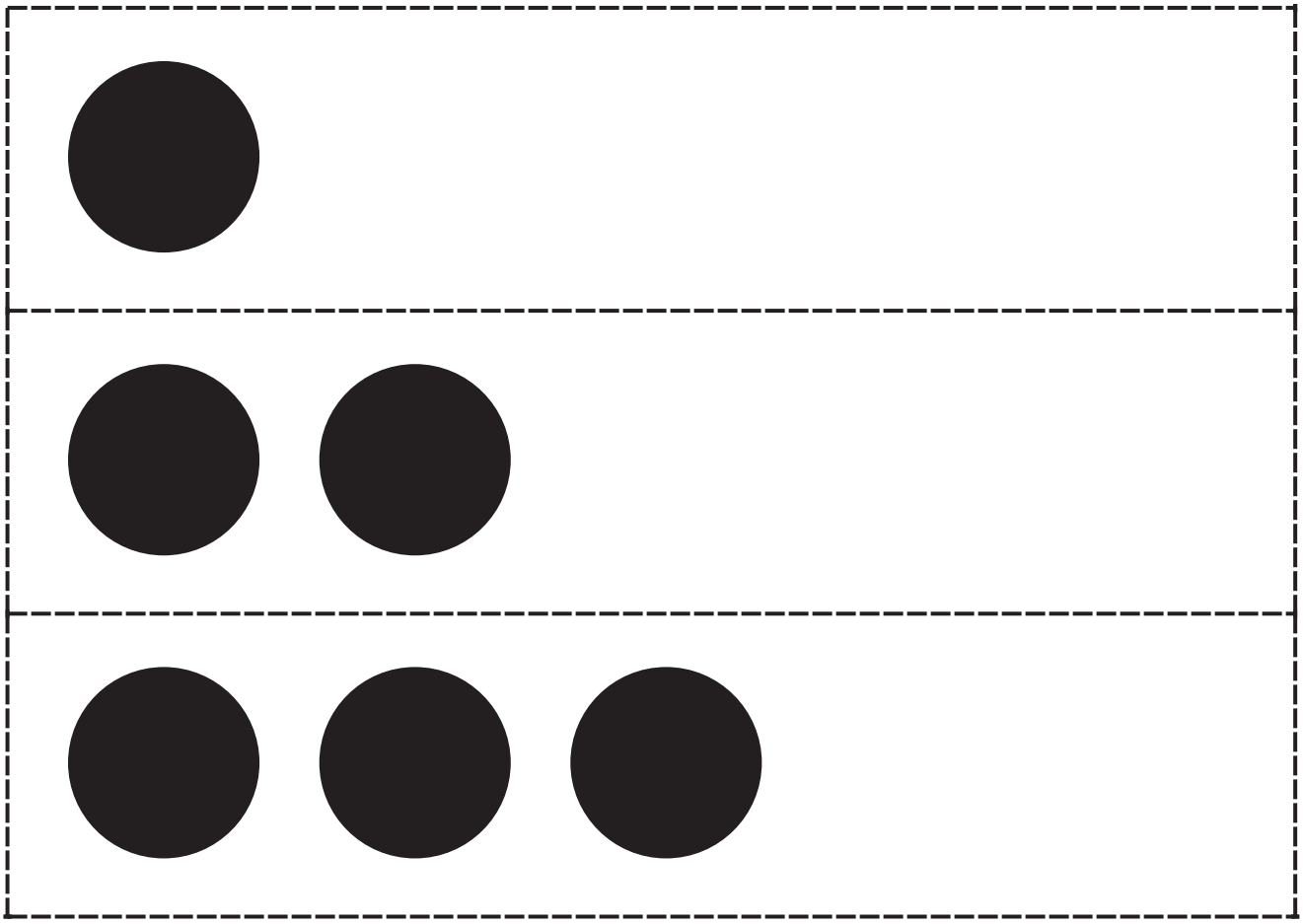

5-group strips

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Pre-Kindergarten Mid-Module 1 Assessment Instructions (Administer after Topic D)

Purpose: These assessments inform daily planning, enhance parent conferences with specific documentation of students' skill development, and provide valuable information about a student to his next teacher.

Materials Needed: Linking cubes as pictured on each page, Module 1 assessment picture cards, crayon, scissors, apple, dish, paper, yellow items, green items, paper plate, craft sticks, and numerals 1–3.

Preparation: This may be a pre-kindergarten student's first assessment experience, so it is critical to make it a positive one. Greet the child warmly, and sit beside her rather than opposite. Tell the child that it is time to play some number games.

Procedure: Use the specific language of the assessment, translating as necessary for non-English speakers. Use the second hand of the classroom clock to assure there is ample wait time, and note when there is a significant delay (i.e., more than 20 seconds) in response. Record the student's results in two ways, (1) the narrative documentation and (2) the overall score per topic. It is key to allow the child to explain his reasoning in his primary language.

Initial Assessment: Use the rubric to determine at what step the student is performing.

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)

If the student is unable to get the correct answer on any part of the assessment, his score cannot exceed Step 3. However, if the student is unable to use his words to explain what he did, do not count that against him quantitatively. (Be aware of the difference between a native English speaker's and a non-English speaker's ability to articulate something.) If the student asks for or needs a hint or significant support, provide either, but automatically lower the score. This is to ensure that the assessment provides a true picture of what a student can do independently.

Repeated Assessment: If a student scores at Step 1 or 2, repeat that task 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 form. If the student is very delayed in his response but completes it, reassess after two weeks to see if there is a change in the time elapsed.

Documentation Availability: Keep the assessments in a three-ring binder or student portfolio. There are two assessments (mid and end) per module for each student. Use the Class Record Sheet following the rubric for an at-a-glance look at students' strengths and weaknesses and follow-up lesson planning.

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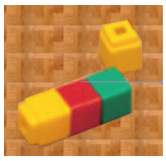
	Date 1	Date 2	Date 3
Topic A			
Topic B			
Topic C			
Topic D			

Student Name _____

Topic A: Matching Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 4 linking cubes (2 yellow, 1 red, 1 green), Module 1 assessment picture cards (cut out), paper, apple (toy or real), scissors, crayon, and dish



1. Here are some linking cubes (give separated cubes to the student). Show me two matching cubes that are exactly the same. How are they exactly the same?
2. (Show Module 1 assessment picture cards.) Show me two things that are the same and use your words, "They are the same, but…" to tell me about the two things.
3. (Present a piece of paper, apple, scissors, crayon, and dish.) Show me two objects that are used together. Tell me how they are used together. (There is more than one answer, e.g., paper and scissors, crayon and paper, apple and dish.)

What did the student do?	What did the student say?
1.	
2.	
3.	

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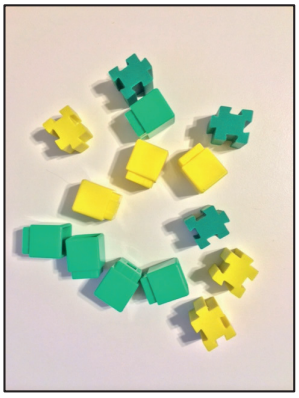
Topic B: Sorting

Rubric Score: _____ Time Elapsed: _____

Materials: (S) Module 1 assessment picture cards (cut out), 5 green cubes, 3 yellow cubes, 3 yellow items (e.g., erasers), 3 green items



1. (Show the Module 1 assessment picture cards.) Mama cat is looking for her kittens. Can you help me make a group of kittens?
2. Here are some linking cubes and erasers (place items in front of the student). Sort these things by color.
3. (Point to the yellow group.) Use your words, "They are the same, but…" to tell me about this group.
4. Help me mix them up again. (Mix the two groups.) Now, sort them into two groups: a cube group and an eraser group.

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	

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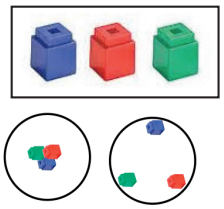
Topic C: *How Many* Questions with 1, 2, or 3 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 3 different color linking cubes, paper plate



1. (Put 3 unconnected cubes in a straight horizontal line on the plate.) Touch and count the cubes. How many are there?
2. Move the cubes close together. (Student moves the cubes.) How many are there?
3. Move the cubes far apart on the plate. (Student moves the cubes.) How many are there?
4. (Show 2 cubes on the plate.) How many cubes are there?
5. (Put 1 cube on the plate.) How many cubes are there?

Note: If a child is unable to count 3 objects with one-to-one correspondence (one object paired with one number word), ask her to rote count to 3. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	
5.	

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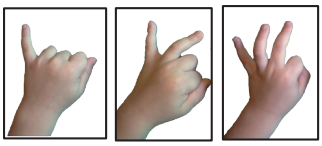
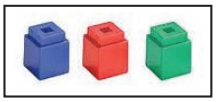
Topic D: Matching 1 Numeral with up to 3 Objects





Rubric Score: _____ Time Elapsed: _____

Materials: (S) 3 linking cubes, 5 craft sticks, numerals 1–3

1. Count to 3 on your fingers (any 3 fingers will do).
2. I will help you put these hats on top of your 3 fingers (put a linking cube on each finger). How many hats do you have?
3. Use your sticks to show that number. How many sticks are in the group?
4. (Show numerals 1–3.) Which number shows how many sticks are in your group?
5. (Show 1 craft stick.) What number shows how many sticks are in this group?
6. (Show 2 cubes.) What number shows how many cubes are in this group?

What did the student do?	What did the student say?
1. 2. 3. 4. 5. 6.	

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Mid-Module Assessment Task Standards Addressed	Topics A–D

Know number names and the count sequence.

PK.CC.1 Count to 20.[1]

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

Count to tell the number of objects.[2]

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.

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.

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

PK.MD.2 Sort objects into categories; count the numbers of objects in each category (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.

[1] PK.CC.1 is assessed directly if a child is not able to demonstrate mastery of PK.CC.3a since rote counting is embedded in counting with one-to-one correspondence.

[2] Within 3.

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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 **PK.MD.2**	The student shows little evidence of understanding how to match objects and identify or explain similarities and is almost non-responsive.	The student shows evidence of beginning to identify matching objects by similarities and demonstrates early explanation skills but with incomplete reasoning.	The student correctly matches objects by similarities, but only provides a partial explanation of how the objects match. OR The student provides a reasonable explanation of the categories, but sorts incorrectly.	The student correctly: ▪ Matches 2 cubes that are exactly the same color. ▪ Matches 2 cards that are the same, but… and explains how the two objects differ. ▪ Matches 2 objects that are used together and explains how they are used together.
Topic B **PK.MD.2**	The student shows little evidence of understanding how to sort objects into two groups and is unable to explain the process.	The student shows a beginning understanding of sorting objects into two groups (with some misplaced items) and demonstrates early explanation skills but with incomplete reasoning.	The student correctly sorts the objects but cannot explain why the objects belong together. OR The student provides an explanation about the groups but mis-sorts.	The student correctly: ▪ Makes a group of 3 kittens. ▪ Sorts the cubes by color. ▪ Explains how items within a group are the same and how the two groups are different.

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A Progression Toward Mastery				
Topic C **PK.CC.1** **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to count objects in any configuration is unable to count from 1 to 3 with one-to-one correspondence (one object paired with one number word), and does not recognize that the last number counted tells how many. Note if child is able to rote count to 3.	The student shows evidence of beginning to understand how to count objects in a line or scattered configuration, but has some difficulty understanding cardinality (e.g., repeats count when asked how many) or one-to-one correspondence (says more than one number for each object or skips an object).	The student is able to do two of the following: ▪ Arrange and count cubes in a line and in a scattered configuration correctly to 3. ▪ Demonstrates understanding of cardinality. ▪ Count with one-to-one correspondence.	The student correctly: ▪ Arranges and counts cubes in a line and in a scattered configuration correctly to 3 and begins to show conservation. ▪ Demonstrates understanding of cardinality (the last number said tells how many). ▪ Counts with one-to-one correspondence (one object paired with one number word).
Topic D **PK.CC.2** **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity. Child is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity and how to create a group of a particular quantity.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Creates a group of 1–3 sticks. ▪ Matches the numerals 1–3 to the corresponding quantities.	The student correctly: ▪ Creates a group of 1–3 sticks. ▪ Matches the numerals 1–3 to the corresponding quantities.

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Class Record Sheet of Rubric Scores: Mid-Module 1 Assessment					
Student Names	**Topic A: Matching Objects**	**Topic B: Sorting**	**Topic C: *How Many* Questions with 1, 2, or 3 Objects**	**Topic D: Matching 1 Numeral with up to 3 Objects**	**Next Steps:**

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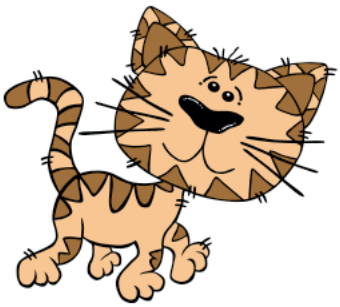
Module 1 Assessment Picture Cards

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Topic E

How Many Questions with 4 or 5 Objects

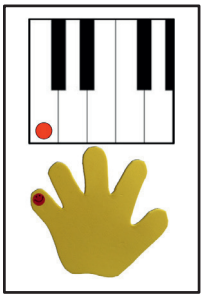
PK.CC.1, PK.CC.3ab, PK.CC.4, PK.MD.2

Focus Standards:	PK.CC.1	Count to 20.
	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 of the order in which they were counted.
	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.
Instructional Days:	6	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

Having counted as many as 3 objects in prior topics, children now move on to groups of as many as 5 objects and answer *how many* questions in the context of play (**PK.CC.4**).

In Lessons 15 and 16, children extend their ability to count up to 5 objects in both scattered and linear configurations (**PK.CC.3ab**). They use fun contexts for making and counting a line of objects as they did in Topic D (e.g., a line of fish swimming through a small window in a sunken pirate ship). Because it is also important for students to move beyond the concrete, Lesson 16 moves to the pictorial, where students tell how many family members are shown in photos (**PK.CC.4**).

In Lesson 17, they tap and count to 4 and 5 on their left hand from pinky to thumb (i.e., the Math Way), using a piano template. This naturally flows from their previous work with linear configurations and prepares students to understand the number path and number line models in subsequent grades.



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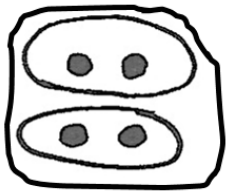
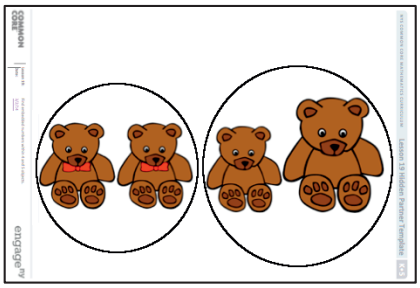
At this point in the Pre-K year, most children will find it easiest to count the Math Way using the piano template, which allows them to drop fingers rather than holding the targeted counting fingers up while trying to hold other fingers down. When asking students to show a number by raising their fingers, expect and accept different patterns based on fine motor skill development levels and cultural norms. (There are several different methods used throughout the world.)



Lesson 18 asks students to count 4 and 5 objects arranged in an array configuration. This provides a natural entry point for finding decompositions, or embedded numbers in Lesson 19 (e.g., "Look! I have a group of 4. I found two groups inside 4!"). With the children, these embedded numbers are referred to as *partners* or numbers "inside" bigger numbers.

At the concrete level, Lesson 19 asks students to find pairs of embedded numbers within groups of 4 and 5 objects by breaking apart a tower of linking cubes to make 2 smaller towers, e.g., a tower of 5 linking cubes is broken into 2 smaller towers of 2 and 3. During Concept Development Practice, students work with pictures to decompose into two groups and recompose to find the original whole, e.g., a group of bears with bowties and a group of bears with no bowties are "inside" a group of 4: "When I put the smaller groups back together, I have 4 bears again" (**PK.CC.1–4**).



In the final lesson of Topic E, students learn strategies to count a group of 5 objects in a circular configuration. Circular configurations are tricky, because it is easy to forget the starting point and thus continue counting around the circle. Children will identify ways to mark their starting point to ensure an accurate count.

Throughout Topic E Fluency Practice, students work on touching and counting to 5 in the context of chants, games, and movement. The new Hop Hop game helps children maintain their ability to count and match quantities with numerals up to 3. Children will continue to practice counting on their fingers the Math Way during Fluency Practice throughout the module.

A Teaching Sequence Toward Mastery of *How Many* Questions with 4 or 5 Objects

Objective 1: **Arrange and count up to 5 objects in scattered and linear configurations. (Lessons 15–16)**

Objective 2: **Count fingers on the left hand from 1 to 5. (Lesson 17)**

Objective 3: **Arrange and count 4 objects in an array configuration. (Lesson 18)**

Objective 4: **Find embedded numbers within 4 and 5 objects. (Lesson 19)**

Objective 5: **Arrange and count 5 objects in a circular configuration. (Lesson 20)**

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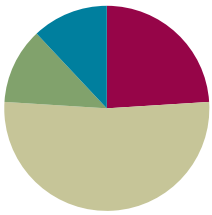
Lesson 15

Objective: Arrange and count up to 5 objects in scattered and linear configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



A NOTE ON FLUENCY PRACTICE:

With the Mid-Module Assessment completed, students' needs for challenge and remediation have likely surfaced by this point in the school year. When students struggle, revisit earlier fluency activities from Module 1, and when they are ready for a challenge, look ahead to the Fluency Practice in Module 2. Adjust the Fluency Practice to meet the needs of the class, and look for ways to differentiate for individual students with independent and partner fluency practice.

Fluency Practice (6 minutes)

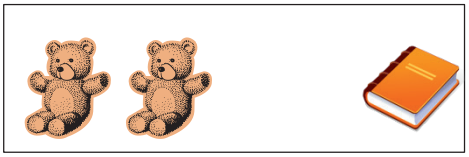
- Peek-a-Boo Counting **PK.CC.3b** (2 minutes)
- Number Cha-Cha to 5 **PK.CC.1** (4 minutes)

Peek-a-Boo Counting (2 minutes)

Materials: (T) 3 large objects (e.g., book and 2 teddy bears), 2 manila file folders with ends stapled together to form a screen

Note: This variation subtly guides students to recognize 2 and 1 embedded in the group of 3, anticipating future work with embedded numbers.

Conduct activity as described in Lesson 10, but now leave a substantial gap between objects (see picture below) to show 3 as 2 and 1, and vice versa.



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Number Cha-Cha to 5 (4 minutes)

Materials: (T) Instrumental music with a cha-cha beat (optional)

Note: This activity extends students' rote counting skills and challenges them to develop fluidity in the counting sequence. Although it is not essential that students master the movements, it facilitates memorization and taps into a variety of learning styles.

T: I want to teach you a new counting dance. I call it the Number Cha-Cha. First, let's learn the steps. Put one hand out to the side, like this (demonstrate).

S: (Mimic the teacher's movement.)

T: Now, the other hand.

S: (Again, follow the teacher's example.)

T: Now, here comes the cha-cha…. It's just three quick little steps, like this: cha-cha-cha (while stepping in place, rhythmically).

S: (Again, follow the teacher's example.)

T: Let's put it together now! Hand, hand, cha-cha-cha (while doing the dance steps).

S: Hand, hand, cha-cha-cha (while doing the dance steps).

T: (Continue until students are reasonably comfortable with the steps.) You're getting good at this! Now, this time instead of saying "hand," we'll say "1, 2." So, it goes, "1, 2, cha-cha-cha." Try it!

S: 1 (one hand out to the side), 2 (the other hand out to the side), cha-cha-cha (stepping in place rhythmically).

This is a possible stopping point for today. If students show mastery, proceed to the next part.

T: Wow, I think you're ready to count to 5! So, instead of saying "cha-cha-cha," this time, we'll say "3, 4, 5." Like this: 1 (hand out), 2 (other hand out), 3, 4, 5 (stepping in place, rhythmically).

S: (Continue the counting and movement.)

Hand

1

Hand

2

Cha-cha-cha

3, 4, 5.

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Application Problem (3 minutes)

Materials: (T) Underwater mat (Template 1), Goldfish crackers (3 per student), 5-group strip (3-dot) (optional, Lesson 6 Fluency Template)

Note: Based on the dietary needs or food allergies of your classroom, adjust the materials as needed. A possible substitution for the Goldfish crackers could be paper or plastic fish counters.

If possible, complete in groups of 10 or fewer to save time and maintain student engagement.

Place some Goldfish on the underwater mat. Invite each student to count out three Goldfish for a snack, while the class counts along. Students should only touch the fish they are going to eat, so they must be careful to stop at 3. Use a 3-dot 5-group strip to help students who still need to match one-to-one to count out a group of 3 (they can place one Goldfish on each black dot).

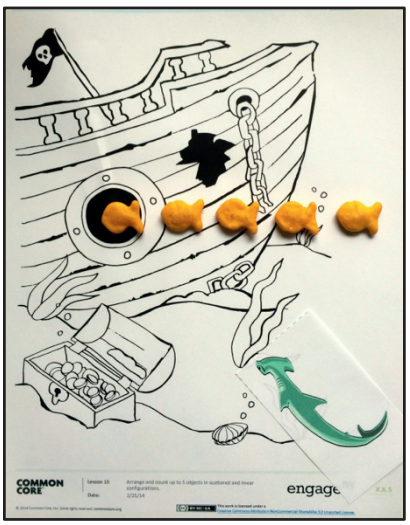
Note: Children review how to count out a group of 3 and also prepare to work with Goldfish crackers in the upcoming lesson. Providing an opportunity for children to eat three fish now helps most students use the fish as math tools during the Concept Development.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Underwater mat (Template 1), 5 Goldfish crackers, plastic shark (or shark from Template 2)

1. Gather students in a circle around the underwater mat. Place 4 Goldfish crackers in a scattered configuration on the mat.
2. Use self-talk to describe the scene. "I see some fish playing tag. This guy is *it*. The others are swimming away. Look! One is next to the rock. Two are over the plant." Lead students in counting, "1, 2, 3, 4."
3. Ask students, "How many fish are playing tag?" Guide them to answer in a complete sentence: "There are…."
4. Add another fish to the game. Lead students in counting: "1, 2, 3, 4, 5." Repeat Step 3.
5. Say, "Oh no, a shark is coming! These fish need to line up, so they can swim through this little window to get away from the shark." Ask students, "What should the fish do: line up or swim in a circle?" Students respond, "Line up!"
6. Invite a student forward to line up the fish and to lead the class in a choral count to 5 again. Guide students to see that there are still 5 fish, just arranged differently.
7. Quicken the pace. Say, "Let's have them play tag again!" Move the fish into the scattered configuration and count. Then say, "Let's have them line up quickly!" Move the fish into a line and count again. Repeat.



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Part 2: Practice

Materials: (S) Underwater mat (Template 1), small cup of Goldfish crackers

1. Pair students and send them to tables with a cup of Goldfish crackers and underwater mats.
2. Say, "Let your 4 fish play tag! Tell your partner where your fish are swimming." Encourage students to use position words.
3. Instruct partners to take turns counting and asking a *how many* question.
4. Say, "Uh oh, the shark is coming. Now, have them line up!"
5. Again, instruct partners to take turns counting and asking a *how many* question.
6. Repeat Steps 2–5 with 5 fish.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Circulate and listen to all students count their Goldfish, checking for one-to-one correspondence. Assist students who are having difficulty by guiding a finger as they point to each Goldfish and count 1, 2, 3, 4, 5.

Student Debrief (3 minutes)

Lesson Objective: Arrange and count up to 5 objects in scattered and linear configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and explore new concepts.

- (Use two underwater mats, one with 5 fish in a scattered configuration, one with 5 fish in a line.) Which group is easier for you to count? Why?
- What happened when we moved the fish from playing tag to lining up? Did we have the same number of fish?
- (Place 4 fish on a mat.) Watch as I touch and count these fish: 1, 2, 3 (point to same object twice), 4, 5. What mistake did I make?

CENTER CONNECTION:

Practice counting to 5 in different configurations in the block center. Select 5 blocks, have children playfully mix them up and count how many. Then, ask the children to line up the blocks and count again. Finally, ask them to stack the blocks and count. Some students use conservation to understand that the number of blocks does not change when the blocks are rearranged.

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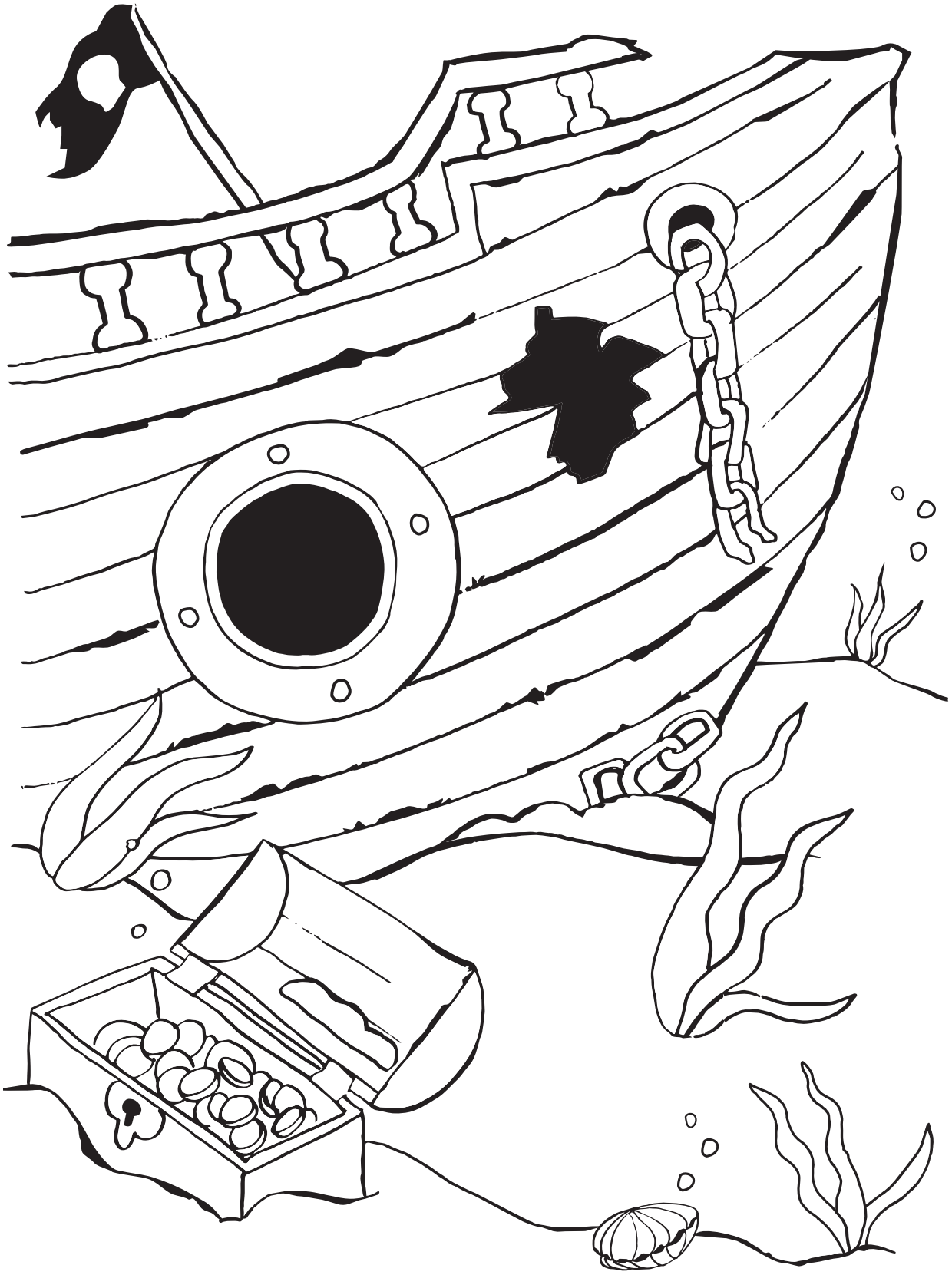

underwater mat

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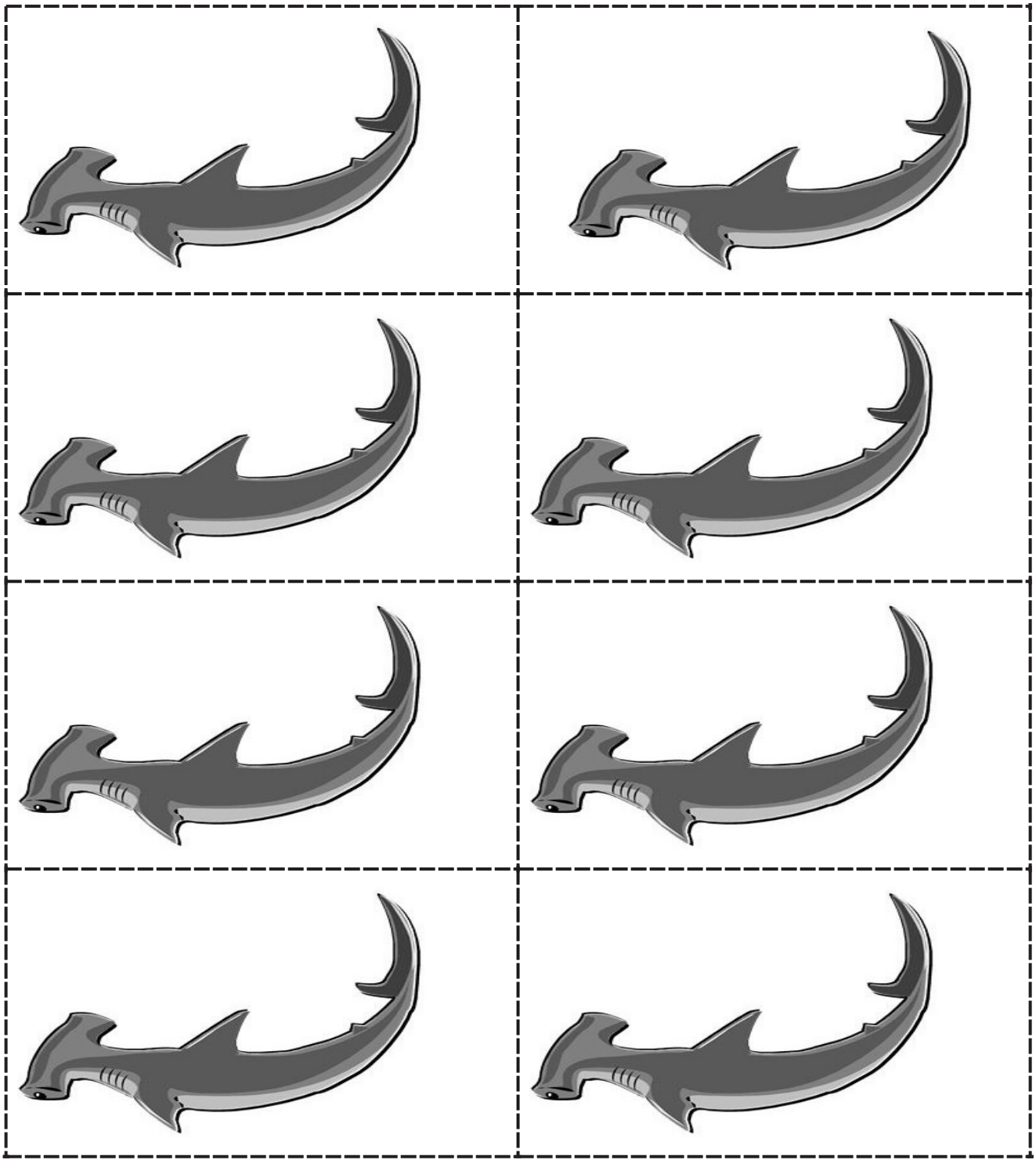

sharks

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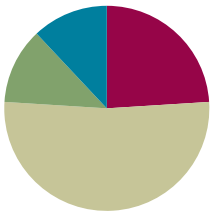
Lesson 16

Objective: Arrange and count up to 5 objects in scattered and linear configurations.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



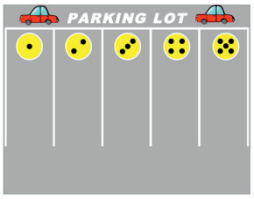
Fluency Practice (6 minutes)

- Dot Path Parking Lot **PK.CC.3a** (3 minutes)
- Number Cha-Cha to 5 **PK.CC.1** (3 minutes)

Dot Path Parking Lot (3 minutes)

Materials: (S) Per pair: dot path parking lot (Lesson 11 Fluency Template), up to 5 toy cars

Note: In this activity, students practice one-to-one correspondence within a familiar context, preparing them for counting in a linear configuration in today's lesson.



Conduct the activity as described in Lesson 11, with students putting each car in its own space while counting, but now use 3, 4, or 5 spaces, depending on students' abilities. The template can be folded or covered to show the desired number.

Number Cha-Cha to 5 (3 minutes)

Note: Students increase speed and accuracy in the counting sequence by engaging kinesthetic and musical modalities.

Conduct as outlined in Lesson 15, but now have students compare today's practice with yesterday's. Ask them if they got better. Guide them to realize that yesterday they had to work hard just to learn the movements and follow directions, whereas today they were able to focus more on counting smoothly. Doing the same activity two days in a row allows students to see immediate growth.

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Application Problem (3 minutes)

Select 4 students to be fish swimming in the middle of the circle. After a few seconds of swimming, have the fish freeze. Ask the other children to count and tell how many there are. Have the fish line up to get fish food. Ask the other children to tell how many fish are in the line. Select 5 new students and repeat.

Note: Some students may begin to show conservation for the second count, realizing that the number of fish does not change based on the arrangement. If this is happening, give a few volunteers an opportunity to share how they knew *how many*. Students benefit from hearing more than one strategy.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Chart with 2–5 dot configurations drawn across the top, baggie with pictures of different families (students' own or Template 1), tape

Note: Use the Module 1 Second Half Family Math Newsletter to request family pictures from students.

1. Reach into a baggie, and hold up a family picture. Ask, "How many people are in this family? Let's count."
2. Point to each person, as students count chorally, "1, 2, 3, 4."
3. Guide students to respond, "There are ____ people in that family."
4. Call a student forward to match the number of family members to the correct dot configuration, and affix the picture under it.
5. Repeat Steps 1–4 with various family pictures (with 2–5 family members), matching each one to a dot configuration.

Part 2: Practice

Materials: (S) Per pair: baggie with 8 dot cards 2–5 (Template 2 cut up), baggie with family picture cards (students' own or Template 3)

Guide students through the following steps:

1. Send student pairs to tables to match their family pictures to dot cards. MP.6
2. Guide partners to ask and answer questions about their pictures, e.g., "How many people are in this family?" "How many dots?"

NOTES ON MULTIPLE MEANS FOR ENGAGEMENT:

Pairing students based on ability for this task can provide an opportunity for differentiation. Students who are ready could use family pictures with more than five members and ask questions such as "How many are girls?" or "How many are grown-ups?" This will provide a challenging extension and allow for all students to have their family pictures included in the activity.

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3. As students work, circulate and describe what they are doing, using parallel talk, e.g., "Vanessa counted 4 people in the line. She matched this family with 4 dots." MP.6

Student Debrief (3 minutes)

Lesson Objective: Arrange and count up to 5 objects in scattered and linear configurations.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Show a family picture.) Ask a *how many* question about this picture.
- (Show two family pictures of 4 or point to the column of 4 on the chart.) The families in these pictures are different, but what is the same?
- (Have 5 students stand in a line and then scatter around the room.) How many friends are in this line? How many friends are scattered throughout the room? Which group was easier to count?

CENTER CONNECTION:

Invite students to draw or paint pictures of their families at the art center. Ask them to count the number of people in their family. If there are more than five people in a family, support students in counting beyond 5.

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large family pictures

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large family pictures

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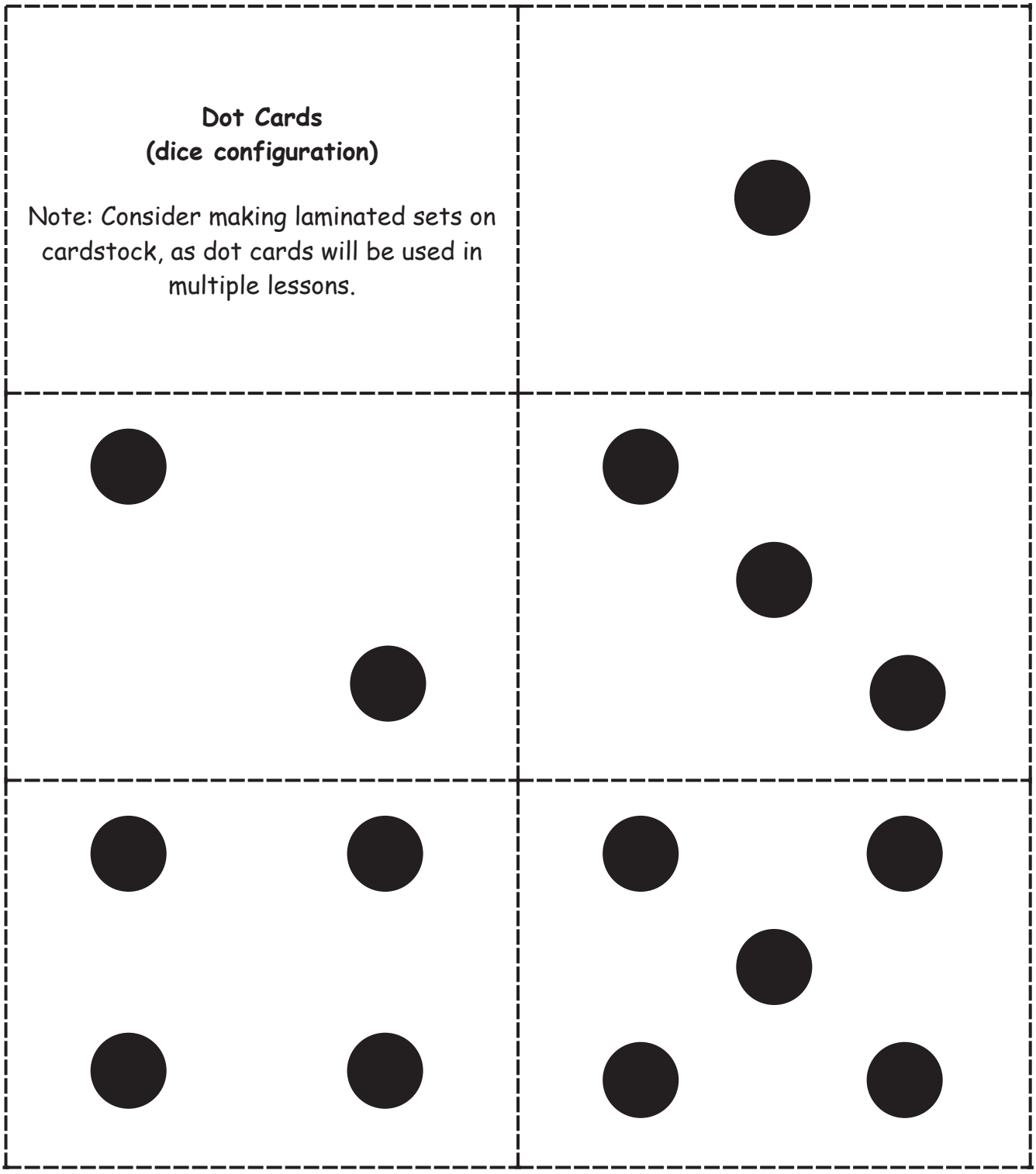
Dot Cards
(dice configuration)

Note: Consider making laminated sets on cardstock, as dot cards will be used in multiple lessons.



dot cards 1–5 (dice configuration)

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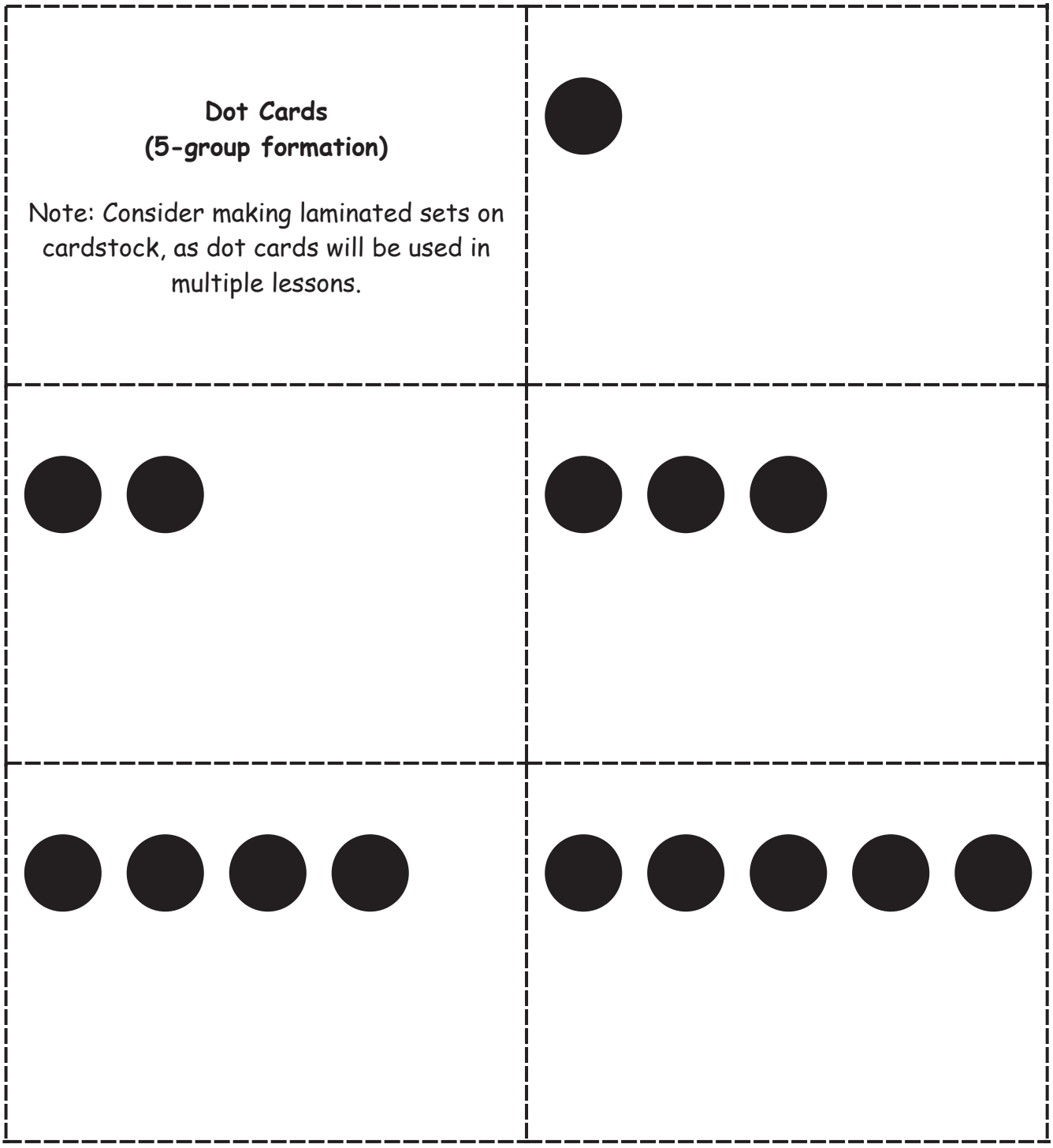
Dot Cards
(5-group formation)

Note: Consider making laminated sets on cardstock, as dot cards will be used in multiple lessons.



dot cards 1–5 (5-group formation)

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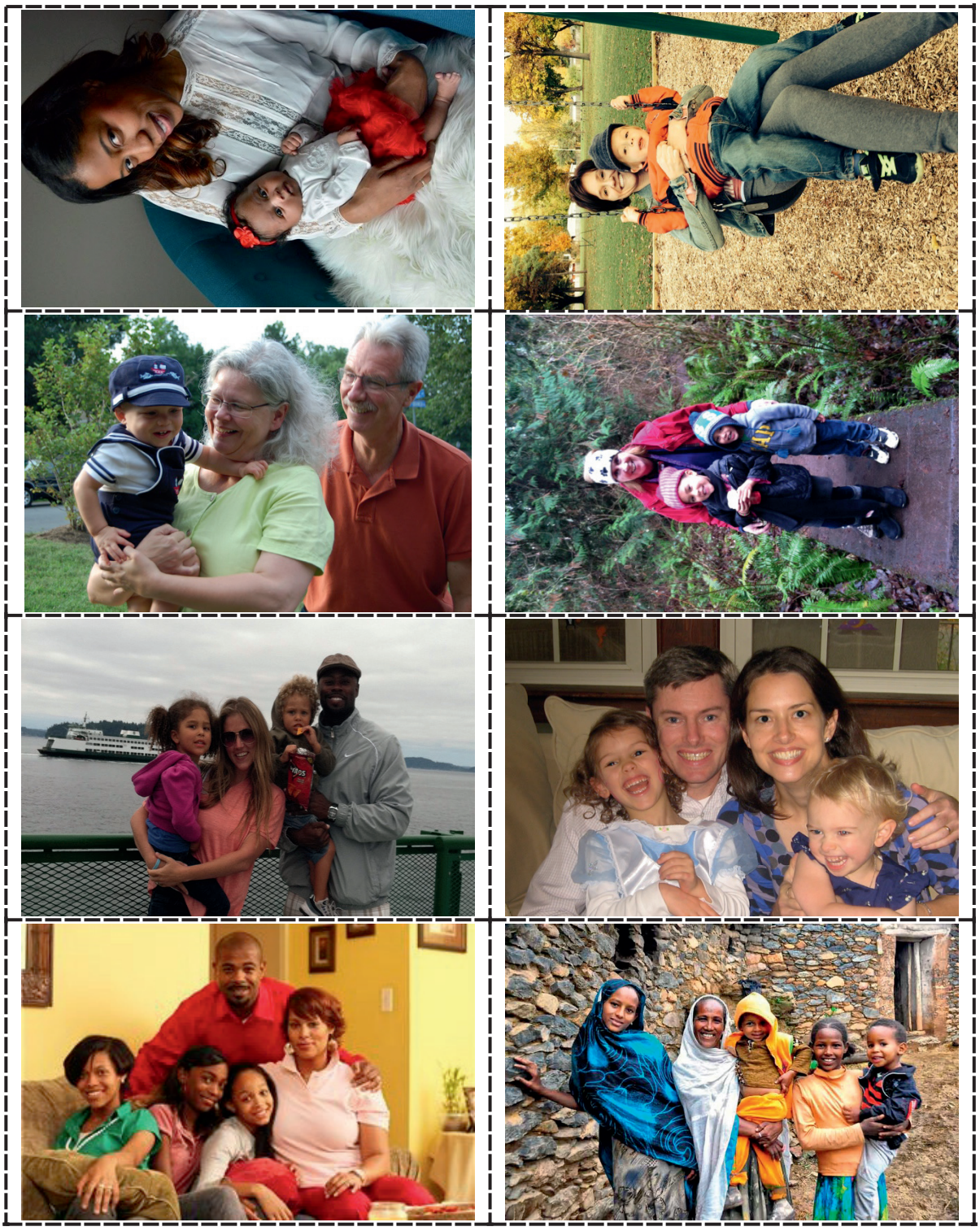

family picture cards

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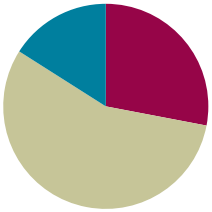
Lesson 17

Objective: Count fingers on the left hand from 1 to 5.

Suggested Lesson Structure



Fluency Practice	(7 minutes)
Concept Development	(14 minutes)
Student Debrief	(4 minutes)
Total Time	**(25 minutes)**

Fluency Practice (7 minutes)

- 1, 2, 3, 4, Pass **PK.CC.3a** (3 minutes)
- Hop-Hop **PK.CC.2** (4 minutes)

1, 2, 3, 4 Pass (3 minutes)

Materials: (S) 4-dot 5-group strip (Fluency Template)

Note: This activity anticipates touching and counting up to 4 objects. Aligning the dots for the students on a strip ahead of time eliminates the need to organize objects into linear configuration. Conduct activity similarly to 1, 2, Pass in Lesson 5, using the 4-dot strip. Students again use the same index finger to move from dot to dot. Replace the verse with "1, 2, 3, 4, slide those dots across the floor!"

T/S: 1 (touch the first dot), 2 (touch the second dot), 3 (touch the third dot), 4 (touch the fourth dot). Slide those dots across the floor! (All pass their strips to the person to their right.)

Repeat until the teacher gives a signal to stop. Again, do this efficiently and delightfully by having one student place her dot cards in a basket until all dot cards are in the basket.

Be sure that students point to each dot individually, rather than slide. Using the analogy of pushing buttons may prove helpful.

This game is inspired by the Ghanaian rock-passing game *Obwisana*.

Hop-Hop (4 minutes)

Materials: (T) Bowl filled with numeral cards 1, 2, and 3 (1 card per student, Lesson 12 Template 2)

Note: This fluency activity is intended to maintain students' ability to count and match quantities with numerals up to 3.

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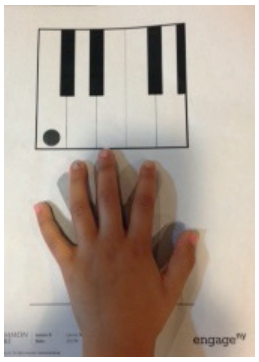
Hold a bowl filled with numeral cards 1, 2, and 3. Have one student pick a card and hop the number of times written on the card. The other children count the hops and say the numbers. The student shows the class the number and then keeps the card and sits back down.

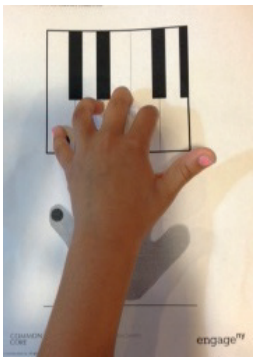
T: Count Jenny's hops.
S: 1, 2, 3.
T: How many hops did Jenny make in all?
S: 3.

Continue around the circle until every student has had a turn. (If the class is large, have two or three students hop at one time.)

To close, consider having all students holding the digit 1 card stand up, hop one time, and then sit back down. Repeat with 2 and 3. Collect the cards.

Concept Development (14 minutes)





Part 1: Concept Introduction

Materials: (T) 1 Piano mat (Template), stickers for each child's left pinky (S) Piano mat (Template)

1. Distribute a piano mat to each student, and name the piano. Place a sticker on each child's left pinky to mark where they will begin their count.
2. (Teachers should turn their back toward children, so they can match their left hand to the teacher's left hand.) Instruct students to match their left hand to the picture of the left hand. Then, have students slide their left hand up so their fingers match the piano keys.
3. Guide students to start with their pinkies and "play" 1, (tapping finger on key). Then, play 1, 2, 3, 4.
4. Tap a rhythm with an object as students say and play, "1, 2, 3, 4" on their piano mats.
5. Ask, "How many fingers played? Show me!"
6. Instruct students to play piano in the air, moving each finger while counting, "1, 2, 3, 4." Tell students, "You just counted up to 4 **the Math Way**!"
7. Invite thumbs to join in, counting up to 5 the Math Way. (Repeat Steps 3–6.)

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Provide a variety of ways for students to interact with the Piano Template. Students with visual-spatial or fine motor delays would benefit from an enlarged template or the template being placed on an inclined plane, for example, a three-ring binder. If the classroom has a piano or keyboard of any kind, of course, have the students come up and use their four fingers to play four consecutive white keys! Many young children have never played a keyboard. It will fascinate them.

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Part 2: Practice

Materials: (S) Per pair: baggie with a set of 10 dot cards with 1–5 dots (5-group formation, Lesson 16 Template 2), piano mat (Template)

1. Pair students and send them to tables with a baggie and a piano template.
2. Tell Partner A to hold up a dot card and ask, "How many dots are there?"
3. Tell Partner B to count the dots, e.g., "1, 2, 3, 4." Guide him to answer in a complete sentence: "There are…"
4. Guide Partner B to count to 4 the Math Way on the piano.
5. Partners switch roles. As the students work, circulate and comment, e.g., "I heard you answering a *how many* question," or "Wow! You're counting to 5 the Math Way!"

Student Debrief (4 minutes)

Lesson Objective: Count fingers on the left hand from 1 to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the lesson, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**the Math Way**).

- Teach me how to count to 5 the Math Way. Where do I start?
- (Show 4 fingers.) Ask me a *how many* question about my fingers.
- (Hold up a 5-dot card. Point and count.) How many dots? Show me 5 with your fingers. What is special about 5 fingers?

CENTER CONNECTION:

If a keyboard is available, add it to the dramatic play center. Invite students to count to 5 while pressing on the keys. For some students, this auditory connection will support counting and provide incentive to practice the muscle movements needed to count the Math Way.

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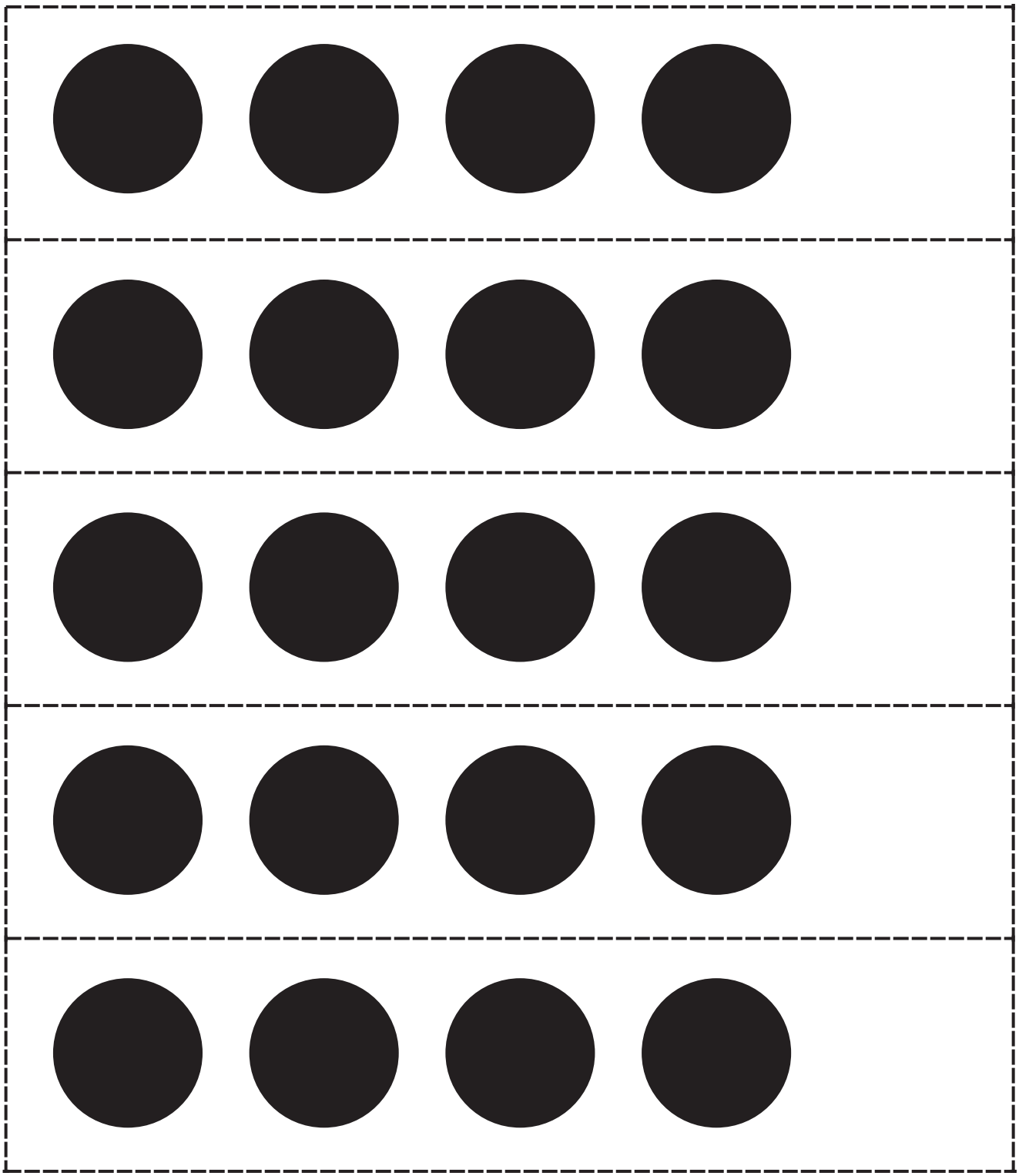

4-dot 5-group strip

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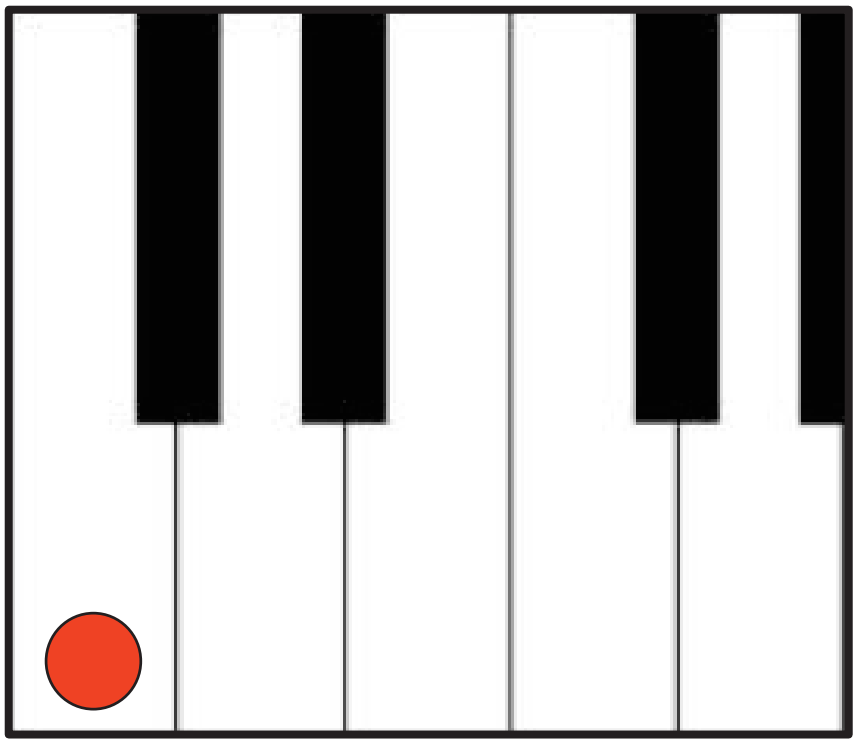

piano mat

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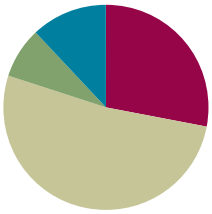
Lesson 18

Objective: Arrange and count 4 objects in an array configuration.

Suggested Lesson Structure

Fluency Practice	(7 minutes)
Application Problem	(2 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (7 minutes)

- Peek-a-Boo Counting **PK.CC.3b** (3 minutes)
- On 5 We Jive Chant **PK.CC.1, PK.CC.3a** (1 minute)
- Counting the Math Way on the Piano **PK.CC.3a** (3 minutes)

Peek-a-Boo Counting (3 minutes)

Materials: (T) 4 large objects (e.g., 4 teddy bears), 2 manila file folders with ends stapled together to form a screen

Note: This variation subtly guides students to recognize numbers 1, 2, and 3 embedded in the group of 4, anticipating future work with embedded numbers.

Conduct the activity as described in Lesson 10, but now leave a substantial gap between objects (see example below) to show 4 as 3 and 1, 2 and 2, 1 and 3, and 2 and 1 and 1.

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On 5 We Jive Chant (1 minute)

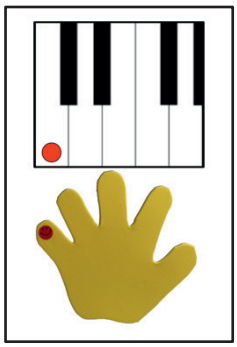
Note: This fluency activity maintains students' rote counting to 5.

1, 2, tie my shoe (act out tying shoe).
3, 4, close the door (act out closing a door).
On 5, we jive (count 5 fingers and shake hips).
On 5, we jive (count 5 fingers and shake hips).

Repeat chant.

Counting the Math Way on the Piano (3 minutes)

Materials: (T) Stickers (for students who still need them) (S) Piano mat (Lesson 17 Template)



Note: In counting the Math Way on the piano, students see the number of fingers increase as they count from 1 to 5, moving from left pinky to thumb without interruption. This provides a foundation for understanding the number path and number line, on which numbers also increase from left to right. Internalization of the number line develops multiple areas of number sense and facilitates future work in operations.

After a brief review, practice counting as described in Part 1 of the Concept Development of Lesson 17.

Note: Realize that other methods of finger counting should not be discouraged outside of this activity. Students now have a special Math Way to add to their repertoire.

Application Problem (2 minutes)

Invite four students at a time to be baby chicks while an adult serves as the mother hen. Have the baby chicks follow the mother hen in a single-file line (one by one). Then, instruct the two chicks at the end of the line to move up next to the first two, thus creating pairs (2 × 2). Count each pair of students, 1, 2. Now, have them create a line again, with the two chicks originally at the front of the line moving to the back. Continue moving between the line and the pair arrangement.

Note: This activity anticipates both work with arrays and the playful context of "baby chicks" in the Concept Development.

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Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Bag with 4 cotton balls

1. Scatter 4 cotton balls on the carpet. Tell students some baby chicks just hatched, and the mommy hen is looking for them. Ask, "How many chicks are there? Count with me." Count chorally, "1, 2, 3, 4."
2. Ask students, "How can we arrange the baby chicks so it's easier for them to follow their mommy?" Guide students to see that they can arrange them in a line and the count is still the same.
3. Move the two chicks at the end of the line next to the first two, thus creating pairs (2 × 2 array). Say, "Sometimes, each chick follows the mommy with a partner. They make a pair."
4. Separate the pairs of chicks (two groups of 2). Say, "Sometimes the pairs wander off together." Count each pair, "1, 2." Point out, "Look! I see partners that are also lined up!"
5. Push the pairs of chicks back together (2 × 2 array) to follow the mommy, "1, 2, 3, 4."
6. Continue to ask *how many* questions.

Part 2: Practice

Materials: (T) Extra cotton ball for each student (S) Baggie with 4 cotton balls

Give each student a baggie with 4 cotton balls, and send them to tables.

1. Have children arrange and count their chicks in a line, "1, 2, 3, 4." Ask, "How many chicks are there?"
2. Say, "Sometimes, the chicks walk to the henhouse with a partner. Make a pair of 2 chicks."
3. Say, "Another pair of chicks decides to follow." Tell students to move chicks so that each one has a partner. Be sure they arrange their pairs correctly (2 × 2 array) before touching and counting again.
4. Separate the pairs of chicks (two groups of 2). Say, "Two of the chicks stopped to nibble on some mealworms." Have children count each pair, "1, 2." MP.5
5. Have students push the chicks back together (2 × 2 array) to continue to the henhouse. Invite partners to ask and answer a *how many* question.
6. Tell students to put the chicks in a line again. Give each student 1 additional cotton ball "chick," and have them add it to the line, counting, "1, 2, 3, 4, 5."
7. Tell students to move them so that each chick is walking with a partner again. Point out what happens with the fifth chick, using parallel talk: "Becca is noticing that we can't put them all into pairs when we have 5." Or, "Stephan said that one is left out; he needs a partner."

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Students who are struggling with correctly forming the 2 × 2 array may benefit from a model to use as a reference. For example, provide a template to place the cotton balls when forming the array (see array template). As students progress, they can use the template as a model and eventually form arrays without it.

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Student Debrief (3 minutes)

Lesson Objective: Arrange and count 4 objects in an array configuration.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

CENTER CONNECTION:

Consider setting up a car in the dramatic play area using 4 chairs placed in a 2 × 2 array. Invite students to work the car into their play. Encourage them to count the number of seats in the car and the number of people in the seats.

- What was the same about the pairs of chicks today?
- (Arrange 4 cotton balls in a line and 4 in a 2 × 2 array.) How many chicks are there in each group? How can I count them?
- What happened when we tried to add another chick to our group of 4? Could we make another pair? Did the chick have a partner?

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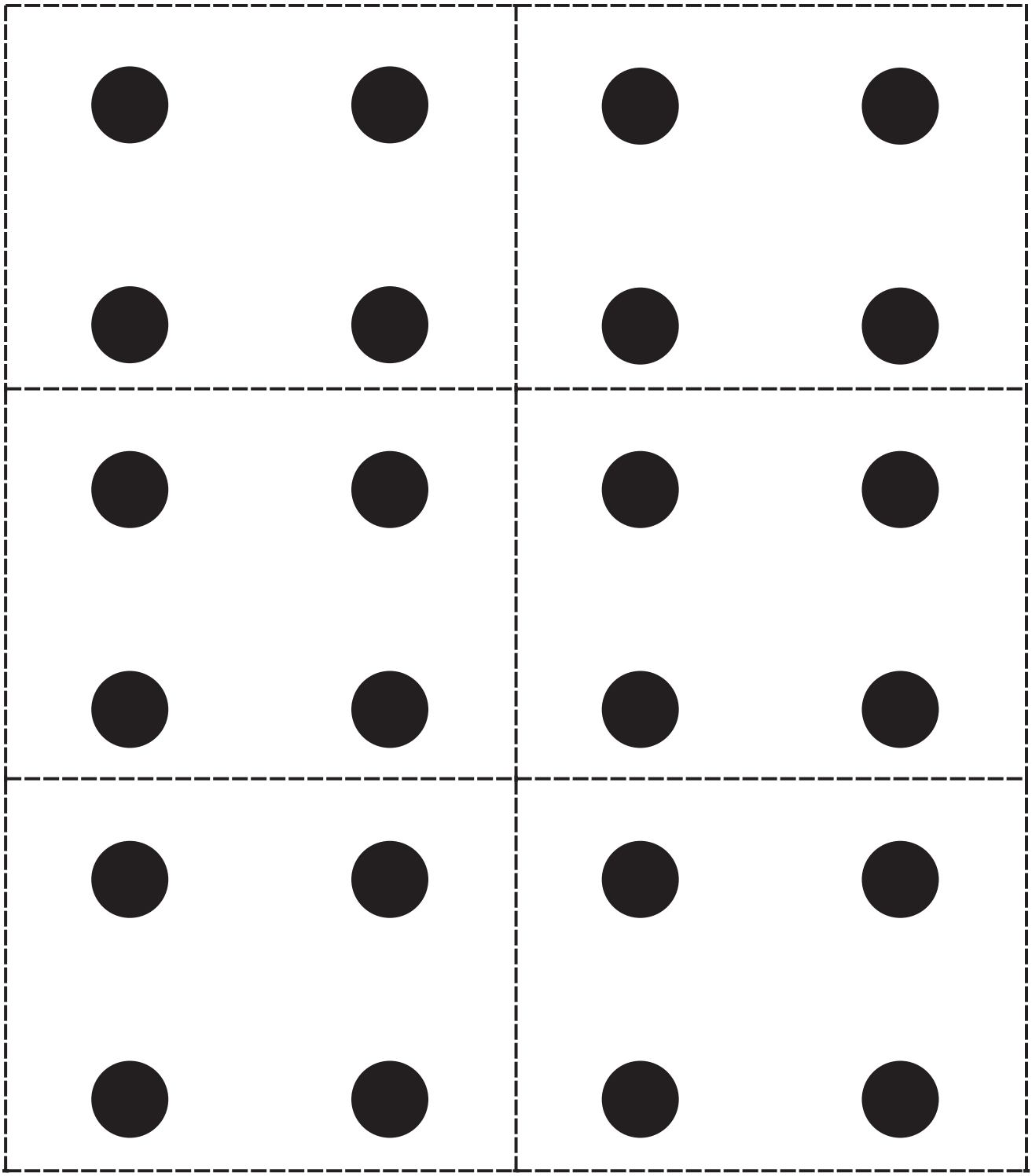

array template (see UDL box)

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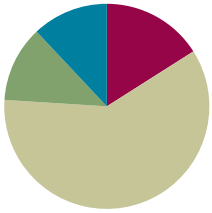
Lesson 19

Objective: Find embedded numbers within 4 and 5 objects.

Suggested Lesson Structure

Fluency Practice	(4 minutes)
Application Problem	(3 minutes)
Concept Development	(15 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (4 minutes)

- Peek-a-Boo Counting **PK.CC.3b** (3 minutes)
- Number Cha-Cha to 5 **PK.CC.1** (1 minute)

Peek-a-Boo Counting (3 minutes)

Materials: (T) 5 large objects (e.g., 5 beach balls), 2 manila file folders with ends stapled together to form a screen

Note: This variation subtly guides students to recognize numbers 1, 2, 3, and 4 embedded in the group of 5, preparing students to work with embedded numbers.

Conduct the activity as described in Lesson 10, but now leave a substantial gap between objects (see example below) to show 5 as 4 and 1, 3 and 2, and 2 and 2 and 1 (as well as the inverse combinations).

Number Cha-Cha to 5 (1 minute)

See Lesson 15 for full description. 1 (hand out), 2 (other hand out), 3, 4, 5 (step in place, rhythmically).

Note: In addition to developing fluidity in the counting sequence, a movement-based fluency activity placed before a less active component improves students' engagement and ability to attend to instruction.

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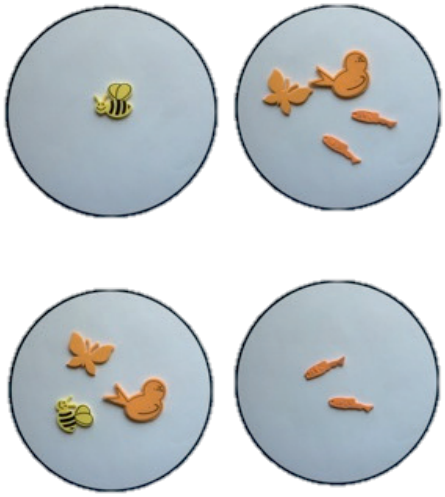
Application Problem (3 minutes)

Materials: (T) 2 sorting mats (Lesson 5 Template, set of objects that can be sorted in more than one way (e.g., orange alligator, orange bird, yellow fish, yellow bee, yellow butterfly)



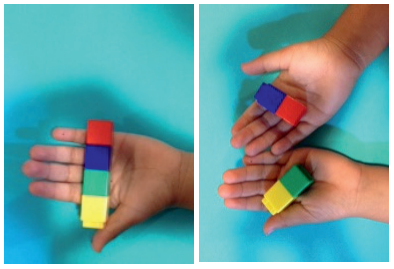
Show the children the set, and ask for ideas about how to sort. Use a suggestion to have children sort in one way, for instance, by color. Count the number of animals in each group. Then, ask students to sort in a different way (use suggestions if available), for instance, animals that fly and animals that swim. Count the number of animals in each group. Encourage students to point out differences between the first and second sort.

Note: Sorting into groups in more than one way anticipates the work with embedded numbers in the Concept Development and supports seeing multiple perspectives and flexible thinking.

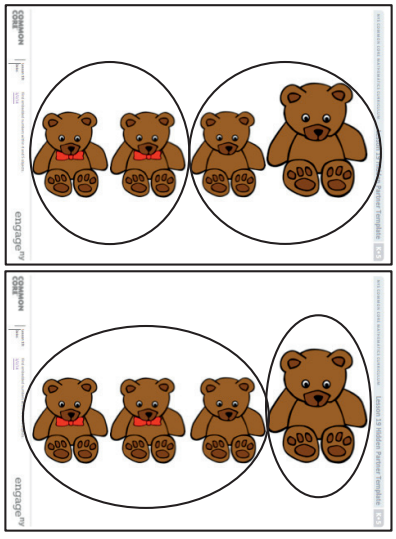
Concept Development (15 minutes)

Part 1: Concept Introduction

Materials: (T) 4 different colored linking cubes, partners of 4 picture (Template 1) inside a plastic sheet protector, dry erase marker (S) 4 different colored linking cubes



1. While building a tower of 4 cubes, tell a story about Charlie building a tower and his baby sister breaking it. Break the tower, and show one small tower in each hand.
2. Ask, "How many small towers does Charlie have now?" Guide students to say, "Charlie has 2 small towers inside his big tower."
3. Guide students to see that when the 2 small towers are put back together, they get back to the original tower. "The 2 small towers make the big tower."
4. Have students each build a tower of 4 cubes and repeat the activity. Encourage them to keep one small tower in each hand to reinforce the idea that there are two parts. "Do you have 4 in your right hand? Do you have 4 in your left hand? Put the towers back together. Do you have 4 now?"
5. Show the partners of 4 picture. Guide students to use the sentence stem, "I have a group of… (bears)."



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6. Use self-talk to explain your thinking, "How could I make these bears into two groups? Hmm… some of the bears have bowties. I could make one group of bears with bowties (circle) and one group of bears with no bowties (circle)."
7. Invite students to think of other ways to make the bears into two groups. If they don't respond, circle a group of small bears. Guide them to say, "I found small bears inside this group." Ask them, "When I put the groups back together, do I have 4 bears again?"

Part 2: Practice

Materials: (S) 5 linking cubes, crayon; per pair: baggie with partners of 4–5 cards (Template 2, cut out)

Before sending children to prepared tables, give each student 5 linking cubes so she can practice making and breaking towers of 5.

1. Have students each build a tower of 5 cubes and break it in two. Encourage students to count and see how many cubes are in each of their small towers before putting them back together to have 5 again.
2. Pair students to work at tables. For each picture, encourage them to use the sentence stems, "I have a group of…," and "I found ____ and ____ inside this group."
3. Once children understand that there are two smaller groups inside the larger group, encourage them to count the number of objects in each group. ("I found 3 sitting cats and 2 walking cats inside 5.")

Note: This lesson is intended to expose students to the concept of embedded numbers, but students are not expected to master this skill in Module 1. The objective is foundational to the work in later modules where students will be composing and decomposing numbers.

Student Debrief (3 minutes)

Lesson Objective: Find embedded numbers within 4 and 5 objects.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**partners**).

CENTER CONNECTION:

Point out sets of objects that show embedded numbers (partners) at centers. For example, as children play with 5 vehicles, notice aloud that there are 5 vehicles. Ask, "How many are cars? How many are trucks?"

- (Show the fish picture from the partners of 4–5 cards.) What two groups do you see inside this group of fish? Does anyone see something different? We call these **partners**.
- Show me 5 fingers. Wiggle 3 fingers. (Repeat with different numbers of fingers. Let children use their fingers in any way they wish.)
- (Build a tower of 5.) What happens if I break this tower? What if I put it back together?

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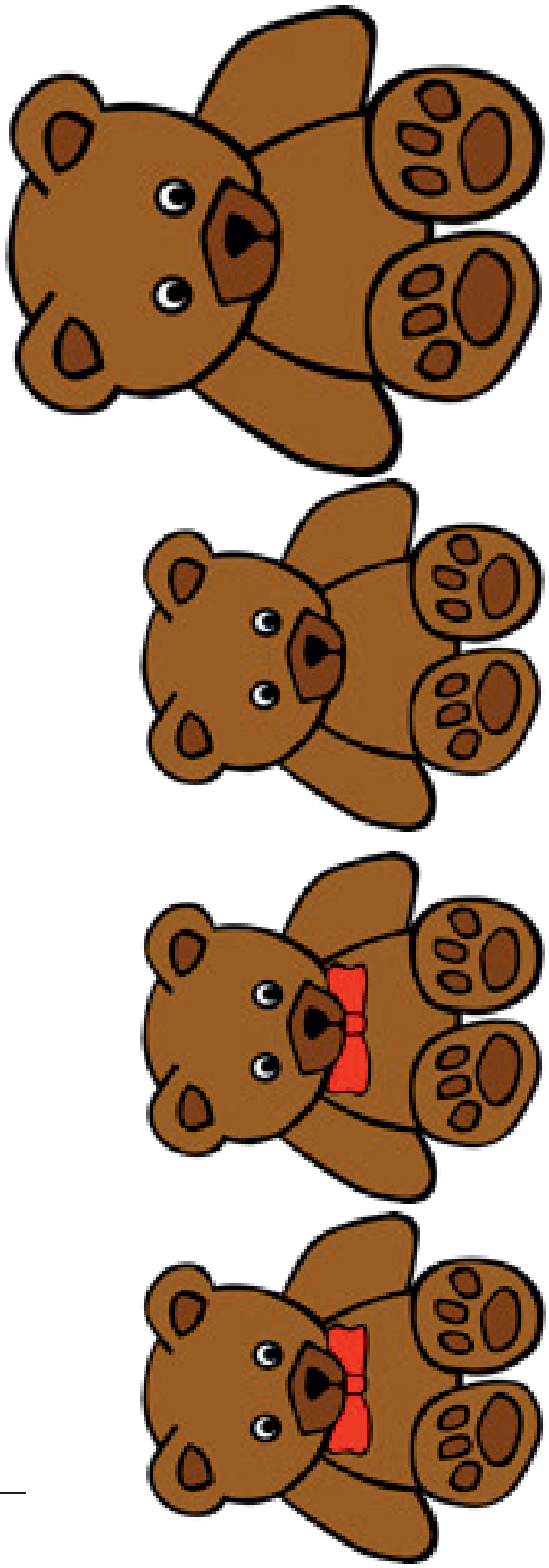

partners of 4 picture

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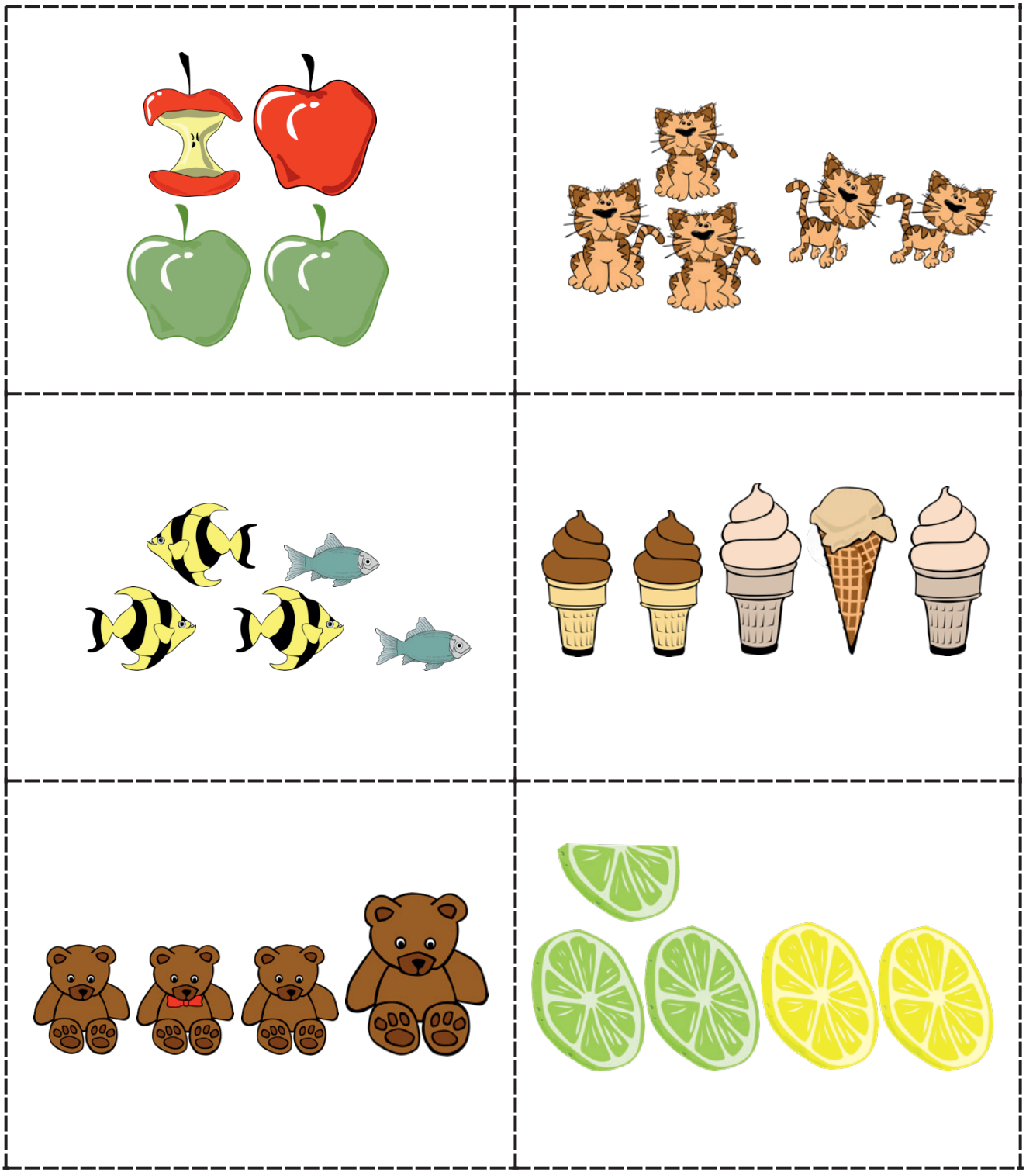

partners of 4–5 cards

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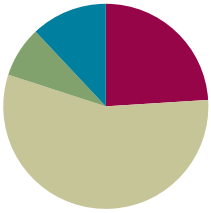
Lesson 20

Objective: Arrange and count 5 objects in a circular configuration.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(2 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Counting Ice Cubes to 3 **PK.CC.3** (3 minutes)
- Baggie Buddies **PK.CC.2** (3 minutes)

Counting Ice Cubes to 3 (3 minutes)

Materials: (S) 3 linking cubes, small paper or plastic cup

Note: In this activity, students practice counting out a group of objects and answering *how many* questions to 3.

Conduct the activity as before in Lesson 14, with students filling cups to match the ice cube order.

Baggie Buddies (3 minutes)

Materials: (T) 3 objects (natural objects such as leaves, sticks, and rocks are particularly engaging to students) (S) Baggie filled with numeral cards 1, 2, and 3 (Lesson 12 Template 2)

Note: This fluency activity maintains students' ability to match quantities with numerals to 3.

Hold up 1–3 objects, and have students show the matching numeral. See Lesson 14 for full a description.

NOTES ON SUPPORTING BACKGROUND KNOWLEDGE:

Students may not be familiar with the carnival and carousel context in the Concept Development. Use photographs or video to provide this background knowledge in advance of the lesson.

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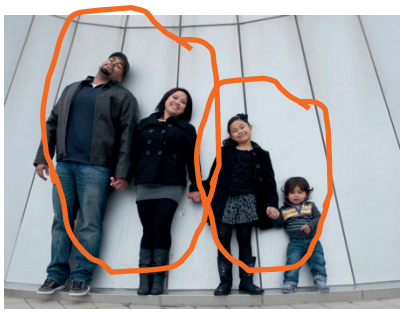
Application Problem (2 minutes)

Materials: (T) Family picture (Template 1) inside a plastic sheet protector

Show the family photo, and have students count the number of people in the family. Ask students for ideas about how they can make the family into two groups (adults and children, girls and boys, wearing a hat and not wearing a hat). Circle the groups based on student suggestions. "How many girls are there?" "How many boys are there?"



Reverse the process to show composition. "When we put the family members back together in one group, how many are there?"

Note: This activity reviews embedded numbers by helping students see that a group can be broken into two parts. This early work with decomposition and composition hints at the part–part–whole relationship fundamental to addition and subtraction concepts.

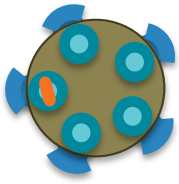
Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Party hat, small paper plate, 5 teddy-bear counters, sticker or paper clip (to mark the start of the count), crayon, table image (Template 2)

1. Call 5 students forward, and arrange them in a line. Tap each one on the shoulder while counting chorally, "1, 2, 3, 4, 5."
2. Tell students that these friends are at a birthday party, and they would like to play Duck-Duck-Goose. "I'll be the counter." Instruct them to hold hands to form a circle, and then, sit down.
3. Use self-talk to describe the activity: "I want to know how many friends are playing, so I am going to tap (on the shoulder) and count each one." Count beyond 5, continuing around the circle, even as students say to stop counting.

4. Count again, this time asking students to tell you when to stop. Then, say, "Hmm… I need to remember where I started. How can I remember?" Affirm student suggestions: "Yes, I need something to **mark** the start!"
5. Repeat the count, this time placing a party hat on the first friend's head to mark the start of the count.
6. Arrange 5 teddy-bear counters around a paper plate. Tell students that these bear friends are on a merry-go-round. Count past 5 again, and ask students, "How can I remember where I started?" **"**Mark the start!" Repeat the count, using a paper clip to mark the start of the count.
7. Repeat with a picture of 5 plates on a circular table. Say, "Jordan helped his parents set the table. How many plates are on the table?" Call a student forward to touch and count each plate on the table. Show him how to make a dot on the first plate with a crayon to mark the start of the count.



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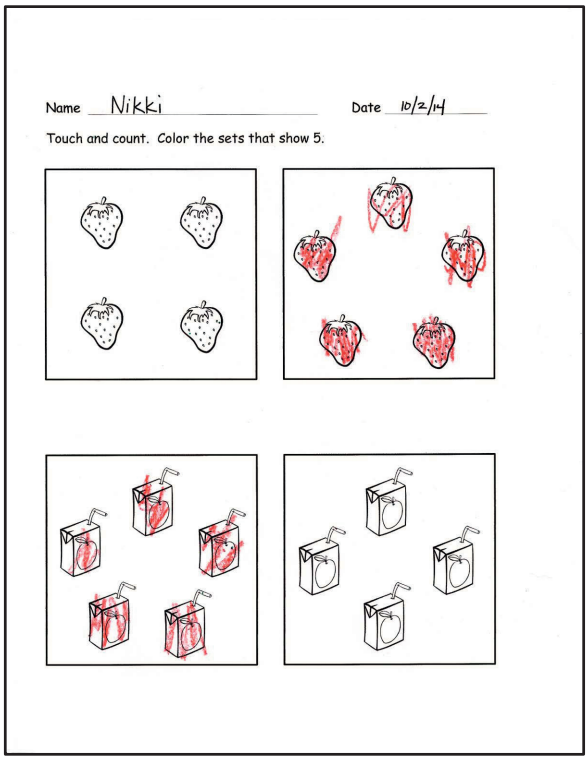
Part 2: Practice

Materials: (T) Small paper plate from Part 1 (S) Small paper plate; baggie with 5 linking cubes, a sticker, and crayon; Problem Set

1. Give each student a paper plate and baggie, and send them to tables to line up their cubes and quietly count them with a partner.
2. Hold up the paper plate. Say, "Some friends (cubes) are riding on the carousel at the carnival." Instruct students to put the friends in a circle around the plate and count them. MP.5
3. Allow children time to discover that they need to mark the starting point (sticker provided in each baggy). Encourage children to start their count with a different bear each time.
4. As students practice counting with a partner, circulate and describe what they are doing using parallel talk: "Serena is marking the first cube with a paper clip, so she knows where to stop counting," or "Asher is touching and counting around the circle, and he knows exactly where to start and stop."
5. Tell students to take a crayon from their baggies. Distribute the Problem Set, and instruct students to touch and count each object in the circle. Show them how to make a dot on the first object with their crayon to mark where their count starts.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Provide a variety of ways for students to mark the start of the count. For example, students who are having difficulty could use a sticker to mark the first cube. Other students will not need a marker because they can visualize where to start and end the count.


Name Nikki Date 10/2/14

Touch and count. Color the sets that show 5.

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Student Debrief (3 minutes)

Lesson Objective: Arrange and count 5 objects in a circular configuration.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**mark**).

CENTER CONNECTION:

Look for opportunities to count objects in a circle during centers activities. If students are sitting in a circle at a table, ask them to count how many students in chairs are at the table. Assist them in marking the starting point of their count if needed.

- How did you know which strawberry you counted first? What did you do to mark the first strawberry you counted?
- Show your partner which group of juice boxes you colored. Did you color the same ones?
- Is it easier to count things in a line or in a circle? Why?

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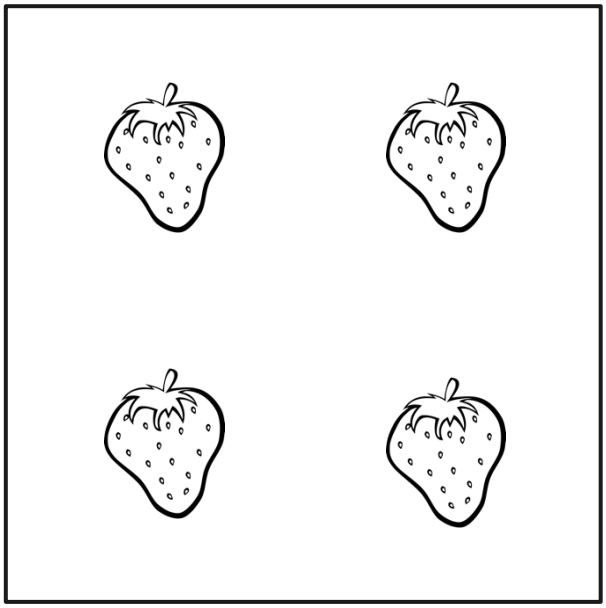
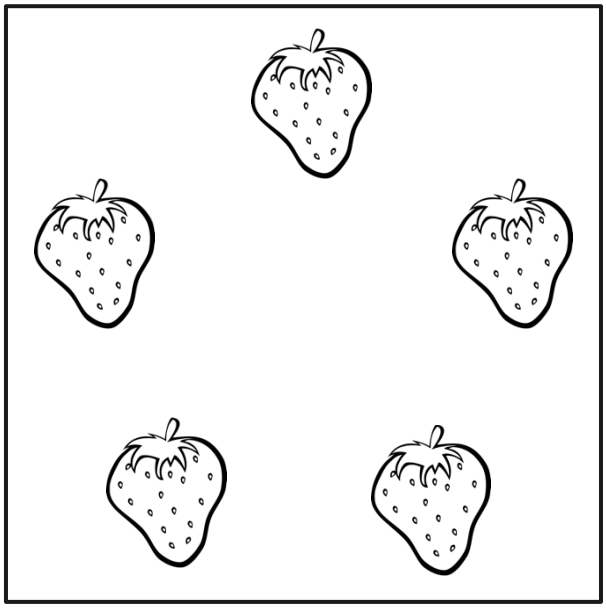
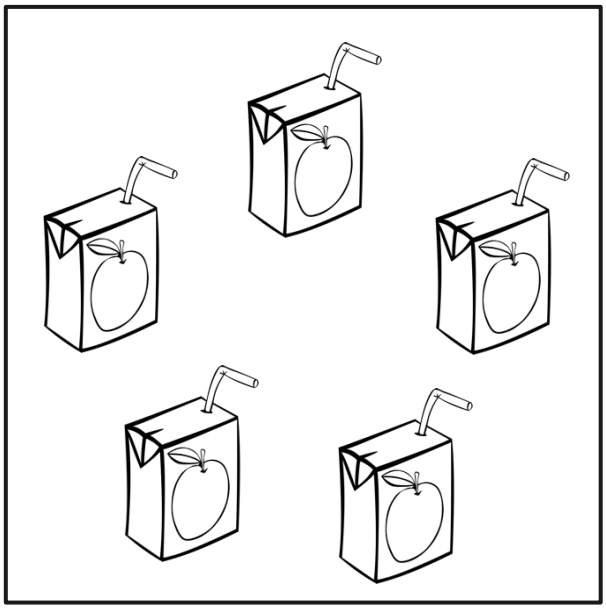
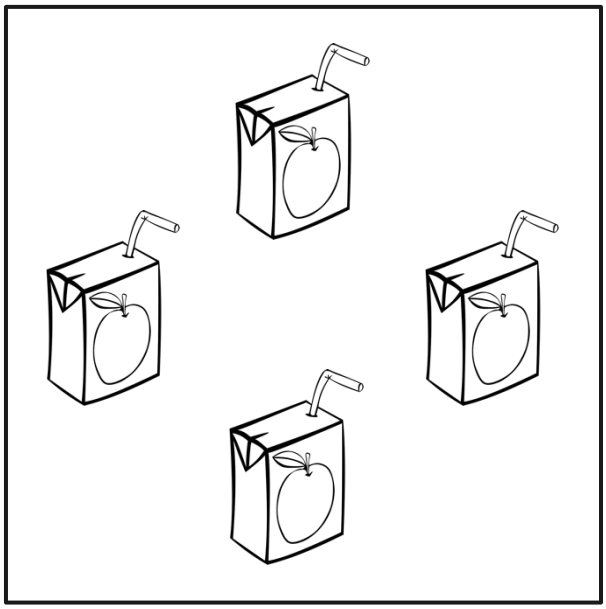
Name _____ Date _____

Touch and count. Color the sets that show 5.









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family picture

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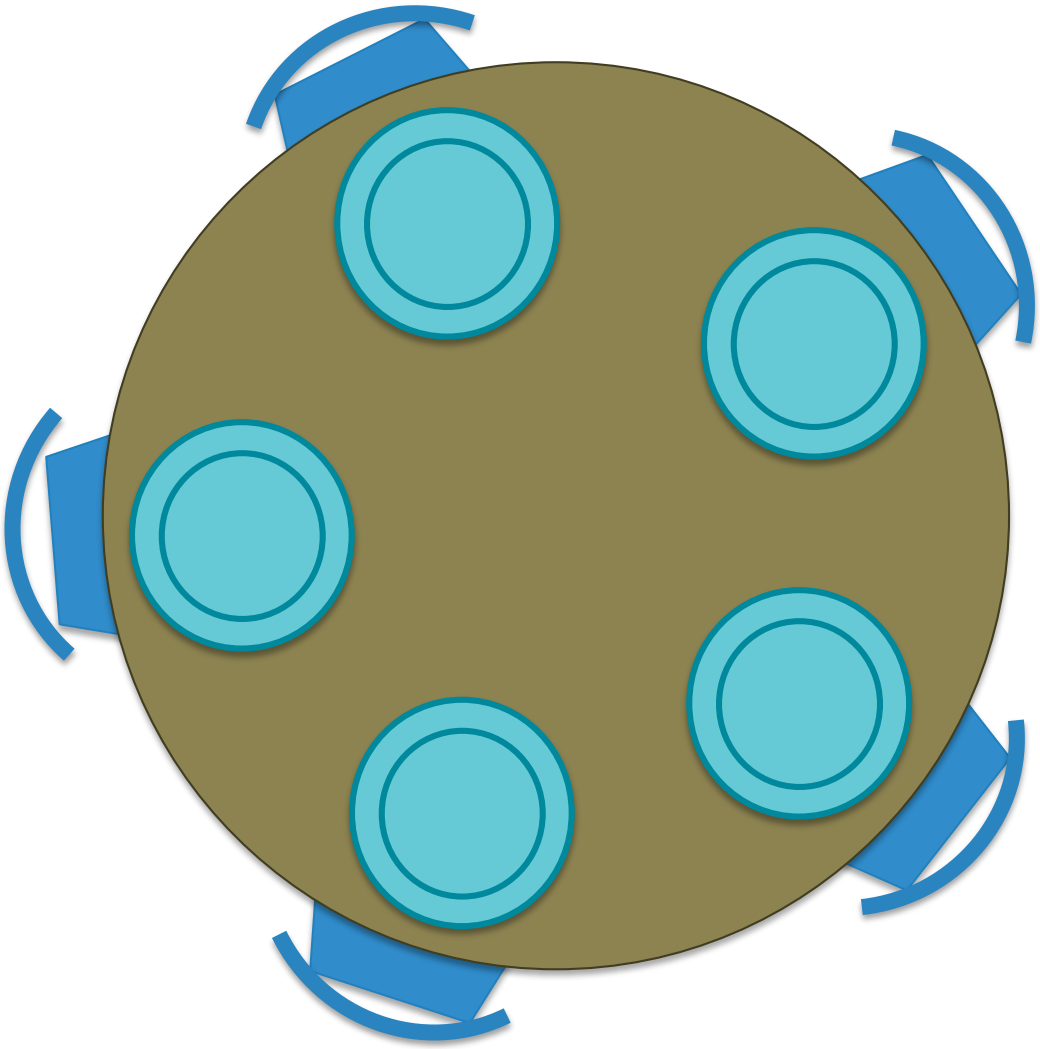

table image (5 plates)

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Topic F

Matching 1 Numeral with up to 5 Objects

PK.CC.2, PK.CC.3ab, PK.CC.4

Focus Standards:	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.
	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.
Instructional Days:	7	
Coherence -Links to:	GK–M1	Numbers to 10
	GK–M5	Numbers 10–20 and Counting to 100

In Topic D, children worked within 3, matching a group to the numeral that tells *how many*. Now, In Topic F, they extend this skill to groups of 4 and 5 (**PK.CC.2, PK.CC.3ab**).

In Lessons 21 and 22, children count groups of 4 and 5 and match them to the numeral that tells how many. They use objects and pictures to practice this skill.

Lessons 23 and 24 follow the pattern developed in Topic D for creating a group. In Lesson 23, children roll a die (with dot configurations of 1, 2, 3, 4, and 5), count to tell how many dots, and find the matching numeral (**PK.CC.2**). Then, they create two different groups to match the number of dots shown: one using puffballs and one using sticks. Lesson 24 asks students to create a group after seeing a numeral or hearing a number. As in Topic D, students use cards with numerals on one side and dots on the other to support those children who still need to use matching in order to create a group.

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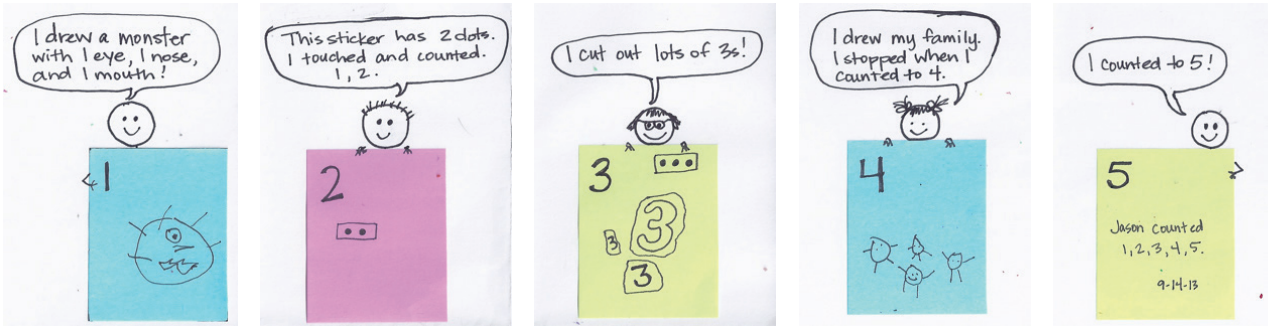
In Lessons 25 and 26, children create number books to demonstrate their understanding of numbers 1–5. The lessons are structured so that children make choices about how to represent the numbers using objects, pictures, and numerals (respectively: concrete, pictorial, and abstract). Differentiated opportunities (as pictured below) are provided for every child to represent numbers 1–5.



In Lesson 27, students synthesize their understanding of the quantities 1–5 by playing a bingo game. Then bingo boards show numerals 1–5 and 1–5 objects arranged in different formations. When children are shown a numeral card, they put a chip on the matching space on their bingo boards.

In Topic F Fluency Practice, students maintain their skill of counting and matching quantities with numerals to 5 in the context of pretend play (e.g., Counting Ice Cubes activity), games, and movement. Students continue to practice counting the Math Way on the piano, now with matching numerals for each finger, so that they can begin to internalize the number line. This counting sequence anticipates the work with *1 more* in Topic G.

A Teaching Sequence Toward Mastery of Matching 1 Numeral with up to 5 Objects	
Objective 1:	**Count up to 4 objects and match the numerals. (Lesson 21)**
Objective 2:	**Count up to 5 objects and match the numerals. (Lesson 22)**
Objective 3:	**Make a group of up to 5 objects and match the numeral (concrete to abstract). (Lesson 23)**
Objective 4:	**Look at a numeral and count out a group of objects to match (abstract to concrete). (Lesson 24)**
Objective 5:	**Represent numbers 1–5 using objects, pictures, and numerals. (Lessons 25–26)**
Objective 6:	**Play a game involving numbers to 5. (Lesson 27)**

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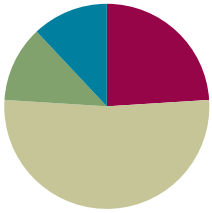
Lesson 21

Objective: Count up to 4 objects and match the numerals.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Merry-Go-Round **PK.CC.4** (3 minutes)
- Pop Up 5 **PK.CC.1** (3 minutes)

Merry-Go-Round (3 minutes)

Materials: (T) Die with 6 replaced by 4 or 5 (S) Paper plates with a dot sticker or line to mark the starting point, 1–5 teddy bear counters

Note: Students maintain the skill of counting in circular configurations within a familiar context. Provide a visual representation (photo or video) of a merry-go-round at a fair for students who may be unfamiliar with this word.

Begin with students seated around the edges of the rug or in a circle.

T: The teddy bears are at the fair, and they want to go for a ride on the merry-go-round. I will roll a die, and we will see how many teddy bears want to get on. (Roll the die.) How many dots?

S: 3.

T: So, we will put 3 bears on the merry-go-round. Pretend that the dot on the plate is the gate. Let them in, one by one. Count and make sure there are 3. Now let them go for a ride.

S: (Spin the plate.) Wee!

T: The ride is over. Let's roll again, and let some of the other bears go.

Roll the die, and repeat the process. The same activity could be conducted with numeral cards if students would benefit from reviewing numerals 1–3 prior to the lesson. If using numeral cards, have students seated in rows rather than a circle so that they do not view the numeral in reverse.

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Pop Up 5 (3 minutes)

Note: Since students have practiced counting to 5 in a variety of ways by this point, the goal now is to develop speed and accuracy.

As in Lesson 14, begin with all students seated in a circle or around the rug. Each student says a number. The student who says, "5," pops up (stands). The next student begins again at 1. Continue around the circle until all students are standing.

Application Problem (3 minutes)

Materials: (T) 1 flower, 2 bees, 3 bluebirds (Lesson 12 Template 1), 4 kittens (Template or objects)

Give each object to a child, and have them stand in front of the class, but do not group them by type. Say the following rhyme:

One little flower, 2 little bees,
3 little bluebirds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3!
4 little kittens come out to play,
On this warm and sunny day.

Ask questions such as, "How many bluebirds are there?" "How many kittens?" Discuss ways to make counting the animals easier (grouping, lining up by type), and try out student ideas.

Note: The Application Problem reviews counting up to 4 in preparation for matching numerals to quantities in the Concept Development. It also asks students to apply their knowledge to make counting easier and more efficient.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

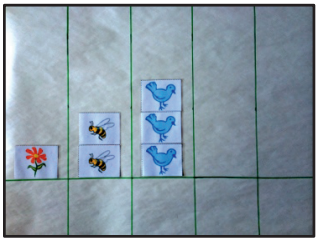
If an interactive white board is available, the lesson structure could be adjusted to include this technology. Students could interact with a chart on the board following the procedure that is described in the lesson with the paper chart. Adjusting the lesson to include technology cultivates student excitement.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Large white board with magnetic numerals 1–3; 1 flower, 2 bees, 3 bluebirds (Lesson 12 Template 1); copy paper with large numeral 1, 2, 3, or 4; additional sets of 4 objects with magnetic tape on back (e.g., 4 kittens from Template); dry erase marker (S) Baggie containing 1, 2, 3, or 4 objects

1. Display the 1, 2, 3 white board without numerals, and review the "One Little Flower" rhyme. Distribute the magnetic numerals 1, 2, 3 to three students and ask them to affix their numerals under the matching quantity, e.g., "Which group has 3 objects?" Invite remaining students to give a thumbs-up if they agree.



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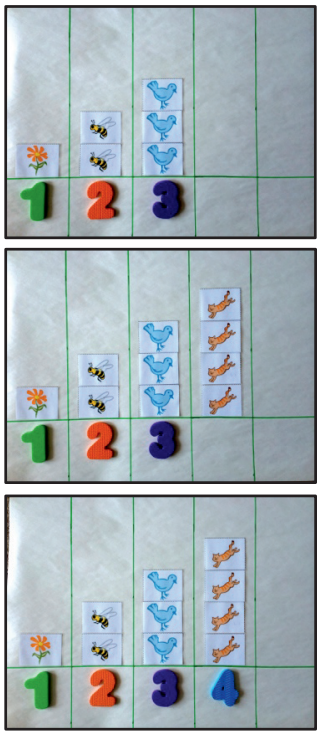
2. Add one more vertical column to the white board so that there are four columns. Place 4 kittens in the fourth column. Ask students, "How many kittens are there?" Lead them to respond, "There are 4 kittens."
3. Place the numeral 4 below the kittens. Tell students, "This is the number 4." Have the students repeat, "4."
4. Tell students, "Let's play Find the Matching Number." Display copy paper with a large number 1, 2, 3, or 4 in each of the four corners of the classroom.
5. Distribute 1 baggie to each student. Baggies contain 1, 2, 3, or 4 objects. Tell students to move to the number that matches the number of objects in their baggie. Ask them, "What number matches?"
6. Guide students to respond, "____ matches my ____." For example, "Four matches my beans." Once all students are standing by a number, have them check to see if a friend in their area has the same number of objects and that they match the numeral.
7. Guide all students at number 1 to clap once, all the students at number 2 to clap twice, and so on. Repeat with a different baggie.



Part 2: Practice

Materials: (S) Per pair: numeral cards 1–4 (Lesson 12 Template 2); baggies containing 1, 2, 3, or 4 objects or dot cards (Lesson 16 Template 2)

1. Match students with a partner, and tell them, "Let's play a game. One of you will be the teacher and one of you will be the student."
2. Say, "Teachers, pick a bag, and ask your student what number matches the objects in the bag."
3. Say, "Find the number that matches the number of objects in your baggie, and hand it to the teacher."
4. Students switch roles, repeating Steps 2 and 3.
5. Circulate among groups, and help students correctly match quantities to numerals. Show students how to use the dots on the back of the numeral cards to check their work.

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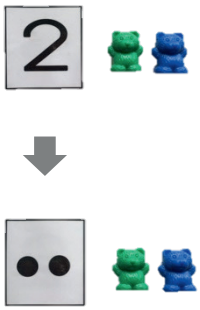

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Student Debrief (3 minutes)

Lesson Objective: Count up to 4 objects and match the numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- What did we do today?
- (Hold up the dot card that shows 4. Display foam numerals on the carpet.) Which number matches these dots?
- (Write the numeral 4 on the board or hold up a foam numeral 4.) Show me this number on your fingers. (Call a student forward to trace it with her finger.) Have all students trace with her in the air.

CENTER CONNECTION:

Four is a fun number to find in many centers: 4 wheels on a car, 4 legs on a dog, 4 legs on a table, and 4 sides on a piece of paper. Invite children to bring their numeral 4 cards to centers today and find items in groups of 4. Remind them to use the dots on the back of the cards to check their work.

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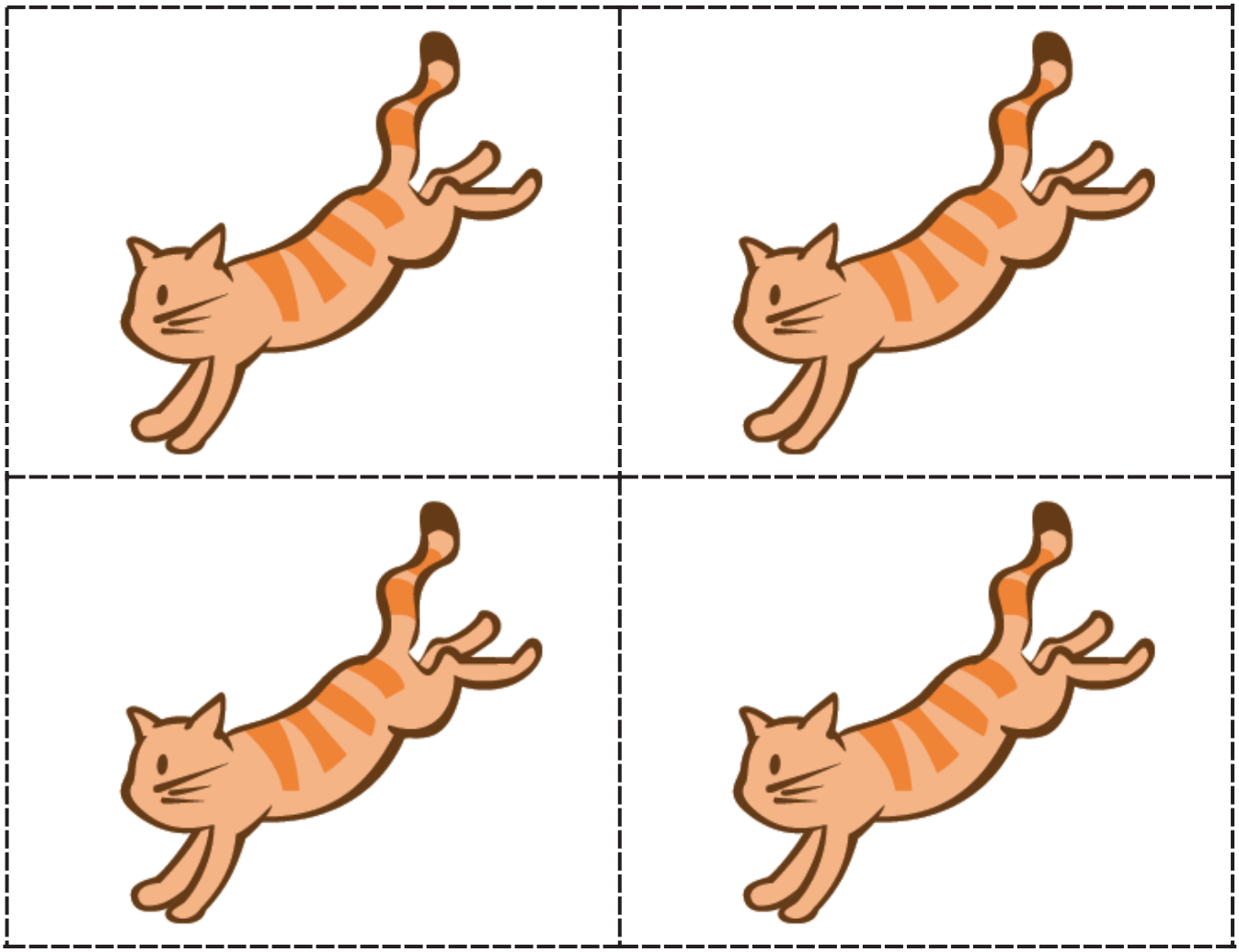

4 kittens

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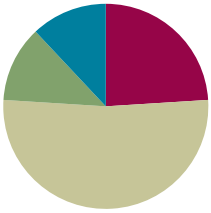
Lesson 22

Objective: Count up to 5 objects and match the numerals.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Counting the Math Way on the Piano **PK.CC.3a** (3 minutes)
- Hop-Hop **PK.CC.2** (3 minutes)

Counting the Math Way on the Piano (3 minutes)

Materials: (T) Stickers (for students who still need them) (S) Piano mat (Lesson 17 Template)

Note: In counting the Math Way on the piano, students see the number of fingers increase as they count from 1 to 5, moving from left pinky to thumb without interruption. This provides a foundation for understanding the number path and number line, in which numbers also increase from left to right. Internalization of the number line develops multiple areas of number sense and facilitates future work in operations. Other methods of finger counting should not be discouraged outside of this activity. Students now have a special Math Way to add to their repertoire.

After a brief review, practice counting as described in Part 1 of the Concept Development of Lesson 17.

Hop-Hop (3 minutes)

Materials: (T) Hopscotch mat to 4, beanbag

Note: This fluency activity is intended to maintain students' ability to count and match quantities with numerals to 4. Using the numbered hopscotch mat allows students to see numbers along a trajectory.

Conduct as in Lesson 17, but now use a hopscotch mat to generate numbers. Have one student toss the beanbag onto the mat. Everyone says the number and then hops that number of times.

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Application Problem (3 minutes)

Materials: (T) 1 flower, 2 bees, 3 bluebirds (Lesson 12 Template 1), 4 kittens (Lesson 21 Template), 5 ducks (Template 1) or real objects

Gather children in a circle. Give an object or picture to each child, but do not group objects by type. Say the following rhyme:

One little flower, 2 little bees,
3 little bluebirds in a tree.
Nice warm sun shines down on me.
I can count! 1, 2, 3!

4 little kittens come out to play,
On this warm and sunny day.
Five little ducks take a dive.
Count them: 1, 2, 3, 4, 5!

Ask questions such as, "How many ducks are there?" "How many kittens?" Discuss ways to make counting the animals easier (grouping, lining up by type) and try student ideas.

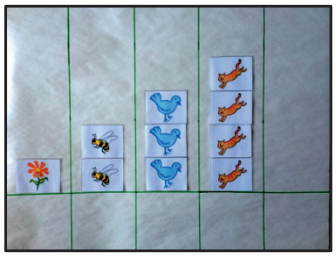
Note: The Application Problem reviews counting up to 5 in preparation for matching numerals to quantities in Concept Development. It also asks students to apply their knowledge to make counting easier and more efficient.

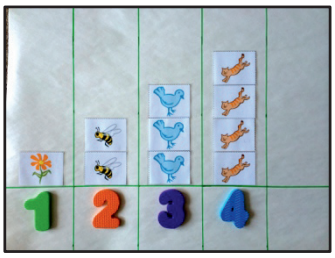
Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Large white board with magnetic numerals 1–5; 1 flower, 2 bees, 3 bluebirds (Lesson 12 Template 1); 4 kittens (Lesson 21 Template), large numerals 1–5; sets of 5 magnetized objects (e.g., 5 ducks from Template 1) (S) 5-group strip with 1, 2, 3, 4, or 5 dots (Template 2)

Note: For Step 4, if using a magnetic white board, place a strip of white paper on the 5 column for the creation of a vertical 5-group using a dot painter or sponge.





1. Display the white board without numerals, and reference the rhyme from the Application Problem. Distribute one magnetic numeral (1, 2, 3, or 4) to four students and ask them to affix it under the matching number of objects (e.g., 4 kittens). Ask, "Which group has 4 objects?" Invite remaining students to give a thumbs-up if they agree.
2. Add one more vertical column to the white board so that there are five columns. Place 5 ducks in the fifth column. Ask students, "How many ducks are there?" Lead them to count and respond, "There are five ducks."

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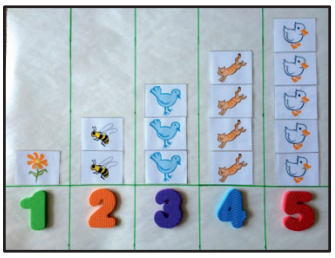
3. Place the numeral 5 below the ducks. Tell students, "This is the number 5." Have students repeat the statement.
4. Remove each picture and make a dot in its place. Build to a vertical 5-group. Say, "Watch how I can make a group of 5."
5. Tell students, "Let's play Find the Matching Number." This time, display a large number 1, 2, 3, 4, or 5 in five areas of the classroom. Pass out 5-group strips, one to each student, printed with 1, 2, 3, 4, or 5 dots. Tell students to move to the number that matches the number of dots on their strip. Ask them, "What number matches the number of dots on your strip?"
6. Guide students to respond, "The number ___ matches." Once all students are standing by a number, have them check to see if a friend in their area has the same number of dots and that they match the numeral.
7. Guide all students at number 1 to stomp once, all students at number 2 to stomp twice, and so on. Repeat with a different dot strip.



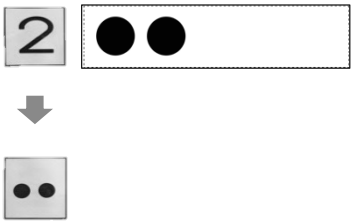
NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Circulate while students are playing Find the Matching Number. Guide students to ask their classmates, "How many?" and to answer using statements that include the unit (dots). This provides an opportunity for students to practice using math words and for the teacher to check for comprehension.

Part 2: Practice

Materials: (S) Per pair: baggie with numeral cards 1–5 (Lesson 12 Template 2, cut apart); baggie containing 5-group strips 1–5 (Template 2); 2 Problem Sets

1. Pair students, and send them to tables, saying, "Let's play a game. One of you will be the teacher, and one of you will be the student."
2. Say, "Teachers, pick a dot strip, and ask your student what number matches."
3. Say, "Students, find the number that matches, and hand it to the teacher." MP.5
4. Students switch roles, repeating Steps 2 and 3.
5. Circulate among groups and help students correctly match dots to numerals. Show students how to use the dots on the back of the numeral cards to check their work (e.g., "Look. The back of the number 4 has 1, 2, 3, 4 dots. This dot strip also has 4 dots. They match.")
6. Distribute Problem Sets as children finish. Demonstrate how to draw a line from a fruit tree to the corresponding numeral. If children are not ready to draw lines, they can work with partners and take turns pointing to matching trees and numerals.



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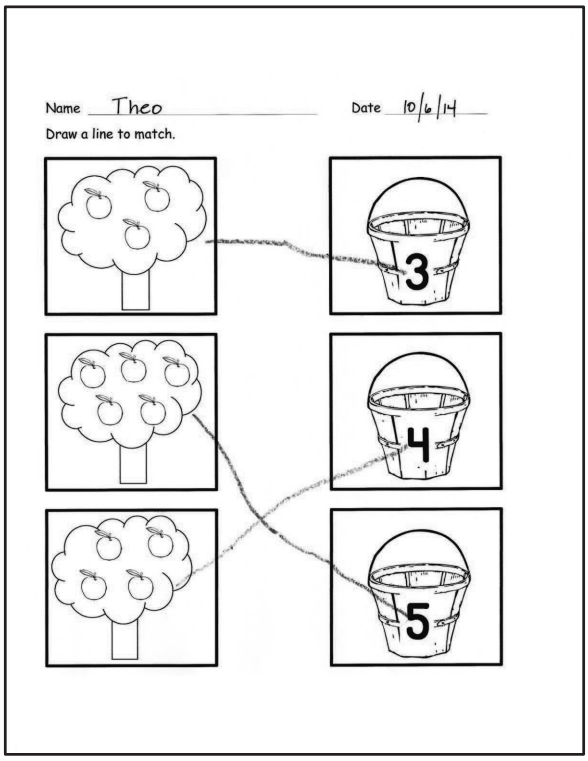
Student Debrief (3 minutes)



Lesson Objective: Count up to 5 objects and match the numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and explore new concepts.

Note: Have children bring their Problem Set to the Student Debrief.

- What important number did we learn about today? How did we show 5? Where else do we see 5 things?
- Look at the trees on your paper. How did you know how to match each tree with a number?
- (Hold up the dot card or 5-group strip that shows 5. Display numerals on the carpet.) Which number matches these dots?
- (Write the numeral 5 on the board or hold up a foam numeral 5.) Show me this number on your fingers. (Call a student forward to trace it with his finger. Have the other students trace in the air with the student.) What does the number 5 look like to you?

CENTER CONNECTION:

Invite children to bring their numeral cards to the art center. After children draw a tree (provide a picture of a tree to those who need it), invite them to squish up small tissue paper squares and glue them to the tree as fruit (provide tissue paper in sets of 5 or fewer). They can count the pieces of fruit, and match the corresponding numeral card. Remind them to use the dots on the back to check their work.

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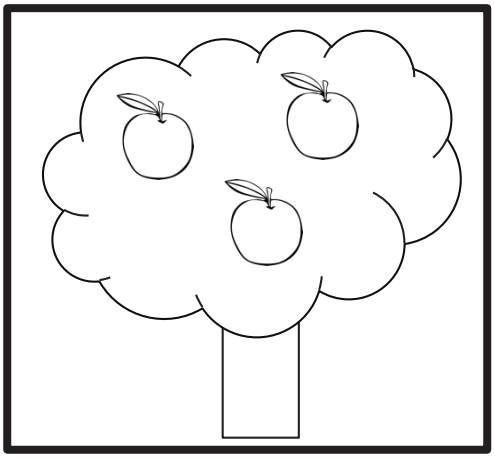
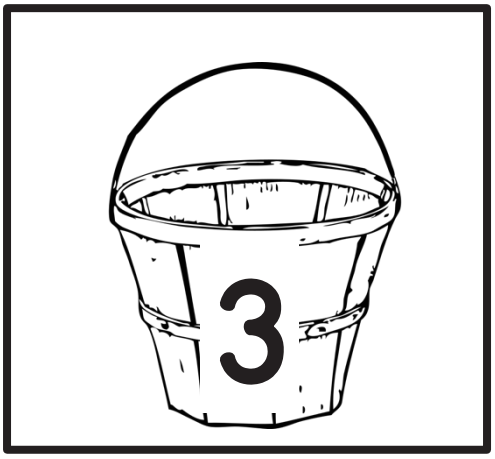
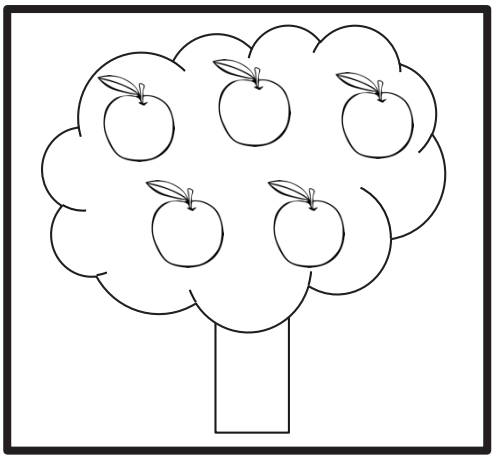
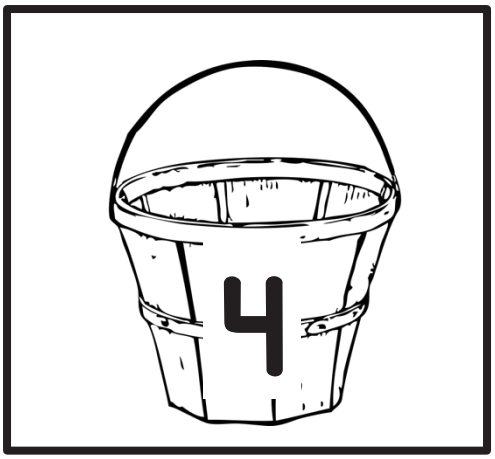
Name _____ Date _____

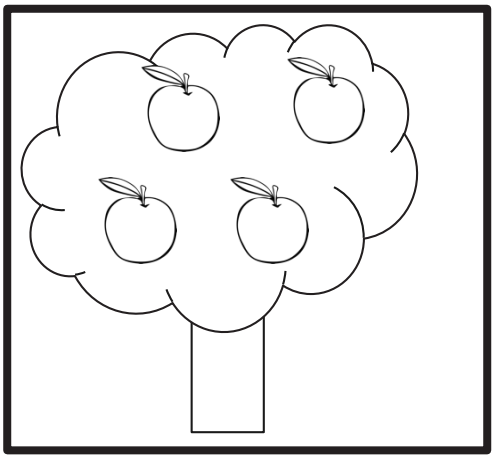
Draw a line to match.

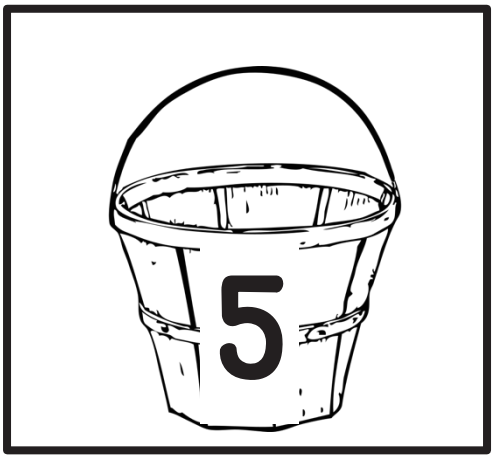












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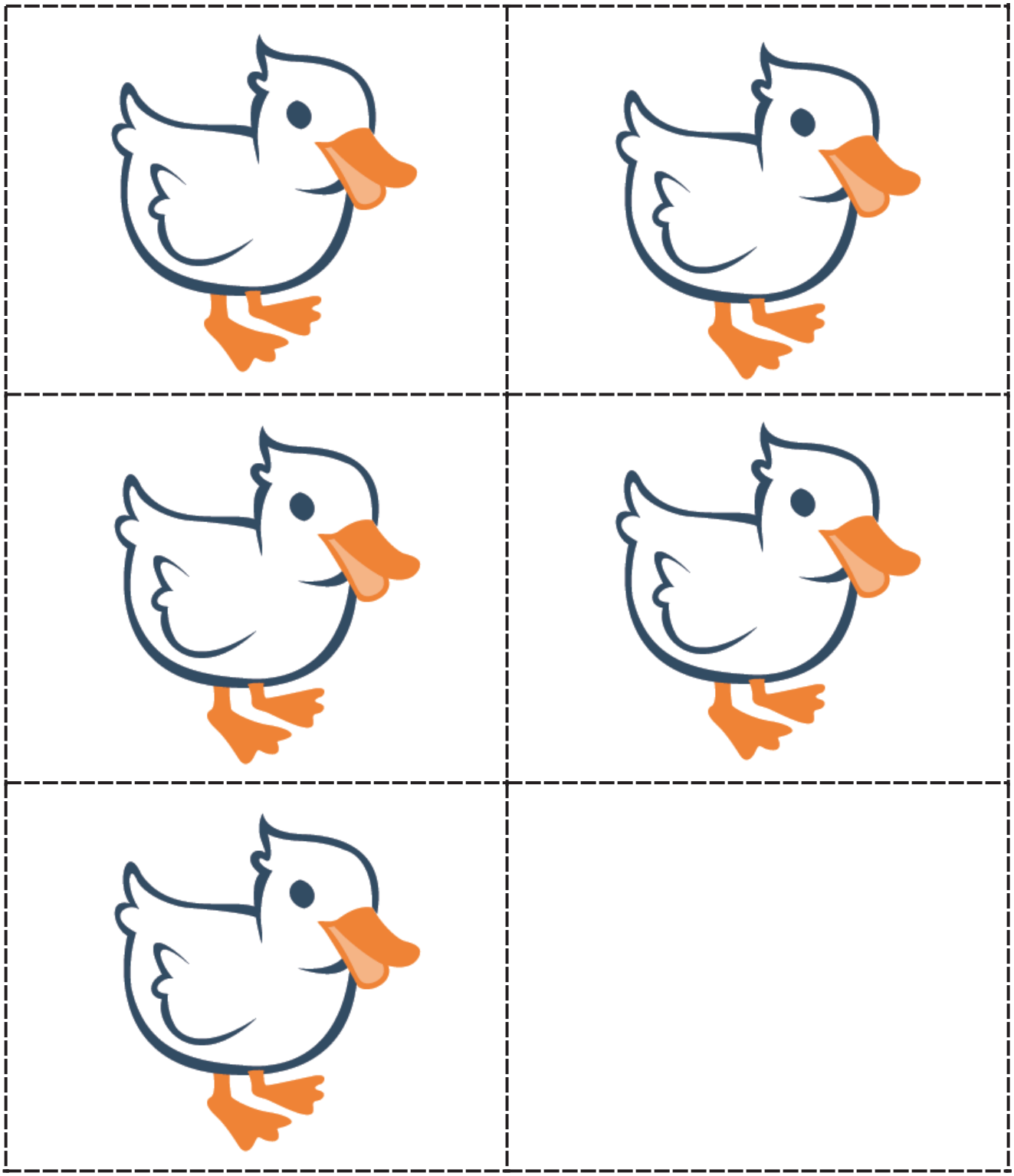

5 ducks

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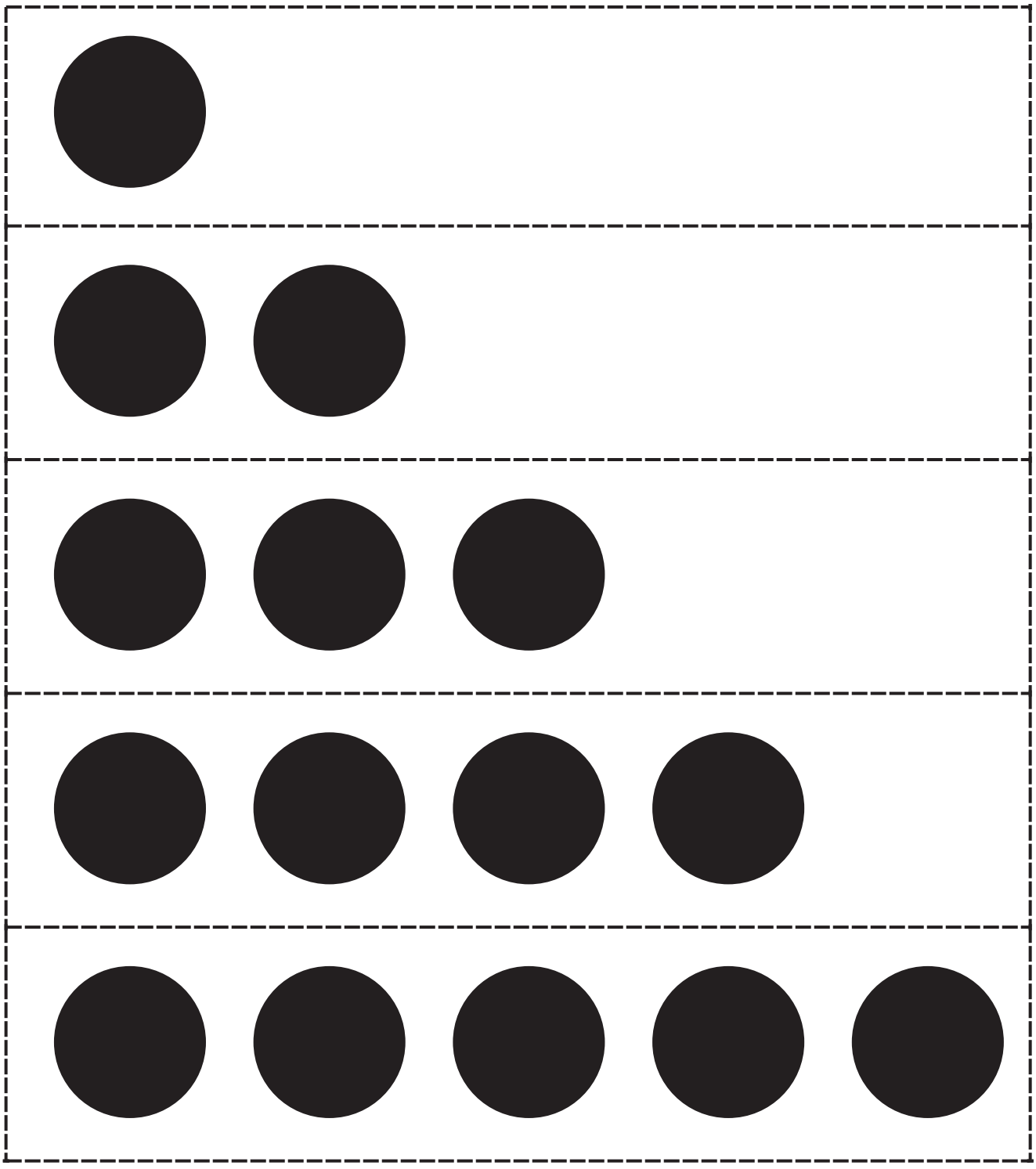

5-group strips

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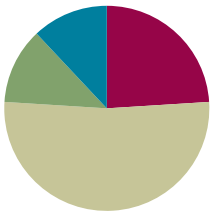
Lesson 23

Objective: Make a group of up to 5 objects and match the numeral (concrete to abstract).

Suggested Lesson Structure



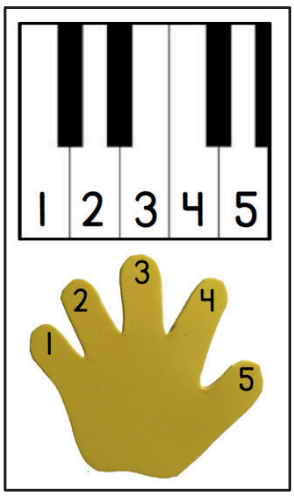
Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Counting the Math Way on the Piano **PK.CC.3a** (3 minutes)
- Hop-Hop **PK.CC.2** (3 minutes)

Counting the Math Way on the Piano (3 minutes)

Materials: (T) Stickers (for students who still need them) (S) Piano mat with numerals (Fluency Template)



Note: In addition to internalizing the number line, students now learn to associate a numeral with each finger by using the numeral version of the template.

Distribute templates and give students a moment to notice what is different about the piano mat (it now has numerals). It may be necessary to ask some guiding questions. Acknowledge their improvement, and invite them to celebrate with silent applause before starting the counting exercise.

As students count 1, have them drop their left pinky on the piano. Continue to 5.

Hop-Hop (3 minutes)

Materials: (T) Hopscotch mat to 5, beanbag

Note: This fluency activity is intended to maintain students' ability to count and match quantities with numerals to 5. Using the numbered hopscotch mat allows students to see numbers along a trajectory.

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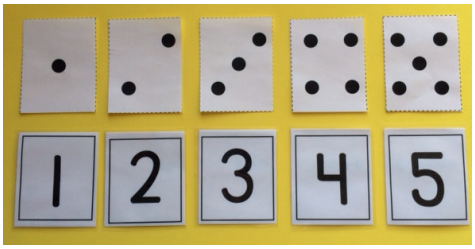
This is similar to Lesson 22 but with a hopscotch mat to 5. Invite students to notice what is different about today's activity from yesterday's (guide children in recalling yesterday's activity).

Have a student toss the beanbag onto the mat. All students say the number and hop that number of times.

Application Problem (3 minutes)

Materials: (T) Dot cards 1–5 (dice configuration) (Lesson 16 Template 2) (S) Baggie with numeral cards 1–5 (Lesson 12 Template 2)



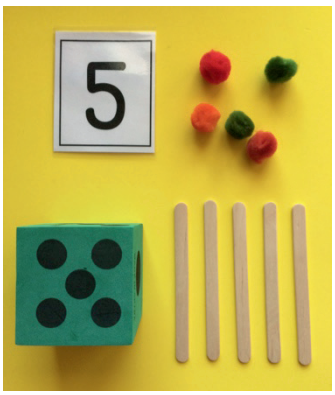
Hold up a dot card showing 1, 2, 3, 4, or 5 (one at a time), and ask students, "Which matches this number of dots?" Have students find the matching number card in their bags and hold it up. Make sure to say the number, so they can hear it and visualize the dots while matching the numeral. Ask students to then look around the classroom for objects to count and find the matching numeral (e.g., 2 doors, 5 windows).

Note: This Application Problem reviews the numerals learned in the last lesson, which students will use in the upcoming Concept Development.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 7 cotton puffballs, 7 craft sticks, die with dots 1–5 (place tape over one of the dots on the 6 face), foam numerals or numeral cards 1–5 (Lesson 12 Template 2)



1. Display the numerals 1, 2, 3, 4, and 5.
2. Roll the die and ask students, "How many dots do you see?"
3. Example after students respond:
   - Touch and chorally count each dot, "1, 2, 3, 4, 5."
   - Have students point to the matching numeral.
   - Lay down 5 puffballs, and have students count along.
   - Ask students, "How many puffballs are in this group?" Lead them to respond, "There are 5 puffballs."
   - Lay down 5 sticks, and have students count along.
   - Ask students, "How many sticks are in this group?" Lead them to respond, "There are 5 sticks."
4. Guide students to see that what is the same about the dots, the group of puffballs, and the group of sticks is the number 5; the number 5 tells how many objects are in each group.

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Part 2: Practice

Materials: (S) Per pair: tray with 7 cotton puffballs, 7 craft sticks, die with dots 1–5, foam numerals or numeral cards 1–5 (Lesson 12 Template 2)

1. Pair students and send them to tables with a tray.
2. Instruct students to take turns rolling the die, counting how many, and making groups with the same number of puffballs and sticks.
3. Instruct students to pick up the matching numeral and say the number. MP.6
4. Encourage students to ask and answer *how many* questions. Circulate and use parallel talk: "I hear Aleem asking, 'How many sticks are in your group?'"
5. Check that the number in each group matches the dot configuration and numeral and that students are moving their puffballs and sticks into new groups as they count.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

In order to sustain effort and persistence, adjust the lesson structure for the needs of students. Some students may need to move forward in small steps with frequent opportunities for practice. Others are ready for the challenge of a more open-ended task.

Student Debrief (3 minutes)

Lesson Objective: Make a group of up to 5 objects and match the numeral (concrete to abstract).

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, use new vocabulary, and explore new concepts.

- What tools did we use to count in our lesson today?
- How did you know how many puffballs or sticks to put in a group?
- (Show students a tray with die showing 4 dots, 4 sticks, and 5 puffballs.) Let's look at David and Reese's work. What number tells how many should be in each group? Do the number of sticks and puffballs match the dots? (Lay the puffballs on top of the dots, if needed.)
- What differences do you see between the shapes of the numbers 4 and 5? Do they both have straight lines? Curves?

CENTER CONNECTION:

The kitchen center is a perfect place for students to practice making groups of 5 or less. The "diners" can show how many vegetables they want by showing a foam numeral. The "chef" can count out the right number of vegetables for each salad using the numeral to match.

Look for opportunities for children to make groups of 5 or fewer in centers supporting thematic units.

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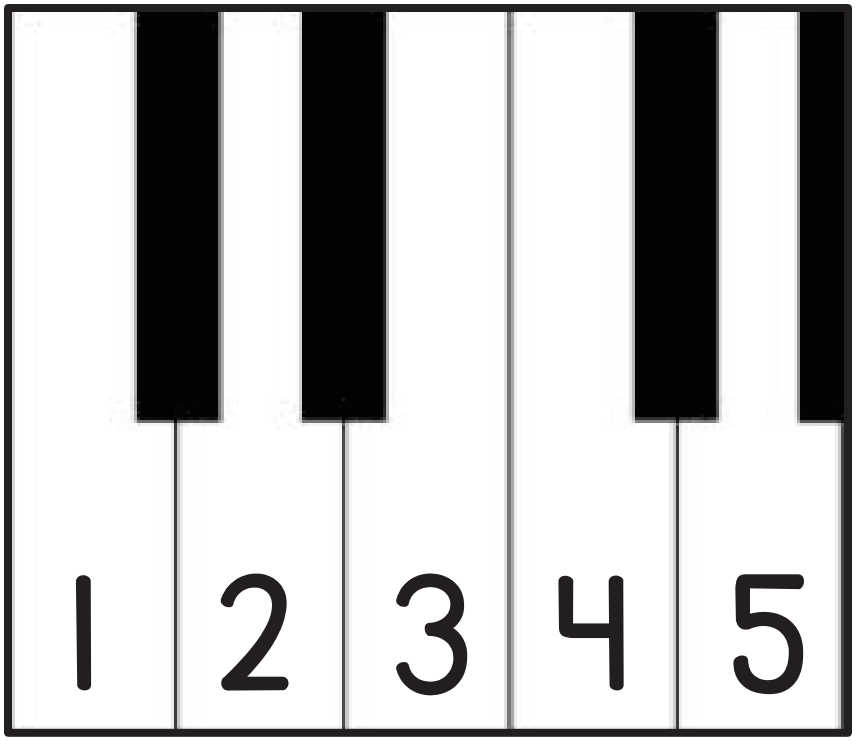

piano mat with numerals

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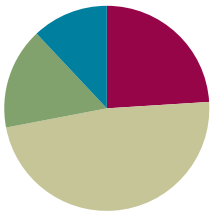
Lesson 24

Objective: Look at a numeral and count out a group of objects to match (abstract to concrete).

Suggested Lesson Structure



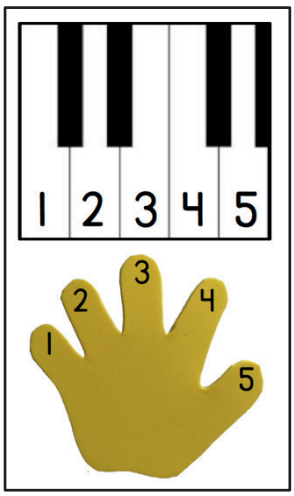
Fluency Practice	(6 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Counting the Math Way on the Piano **PK.CC.3a** (3 minutes)
- Baggie Buddies **PK.CC.2** (3 minutes)

Counting the Math Way on the Piano (3 minutes)

Materials: (T) Stickers (for students who still need them) (S) Piano mat with numerals (Lesson 23 Fluency Template)



Note: In addition to internalizing the number line, students now learn to associate a numeral with each finger by using the numeral version of the template. This variation of counting on the piano anticipates the work with *1 more* (Topic G) by connecting an increase in the volume of voices as students count with numbers getting larger.

Conduct activity as described in Lesson 23, but now have students get a little louder as they count: 1 starts as a whisper, 3 would be a classroom voice, 5 would be a shout. As a variation, take away the template, and try again.

Baggie Buddies (3 minutes)

Note: This fluency activity maintains students' ability to match quantities with numerals to 5.

As before in Lesson 14, the teacher shows a group of objects. Students answer a *how many* question and retrieve the correct numeral from their bag, but now the activity includes numerals to 5.

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Application Problem (4 minutes)

Materials: (T) Numeral cards 1–5 (Lesson 12 Template 2) (S) 6 craft sticks

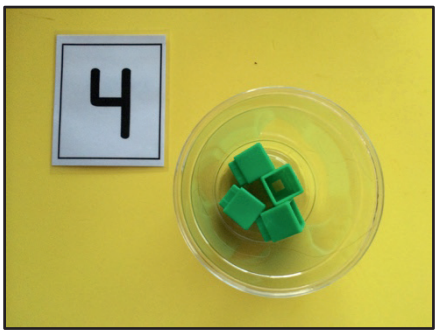
Tell students they are going to be cooking sausages at Sam's Sausage Shack. Give each student a set of craft sticks, and say that they are sausages. Show students 3 fingers, and ask them, "Here are 3 hungry people. How many sausages does Sam need to cook so everybody can have 1?" Ask them to lay down exactly the number of sticks (sausages) that are needed. Select one student to show the matching numeral. Repeat the process with numbers of sausages up to 5.

Note: This activity asks students to count a group of sticks to match different representations of the numbers 1–5. Such practice helps deepen their understanding of cardinality, as they see that the same number can be represented in different ways. They discuss how the representations are related in the Student Debrief.

Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) 8 cubes, numeral cards 1–5 (Lesson 12 Template 2), 1 clear plastic cup



1. Tell students that they are going to be waiters and waitresses, serving drinks in a restaurant. Invite a child (waiter) forward to select a numeral card, showing it to the class. Ask all students to name the number. This number represents the number of ice cubes (linking cubes) needed in each drink.
2. Count out that number of cubes using self-talk to describe the thinking involved, such as, "I will make a group of 4 ice cubes. I will count and stop when I get to 4: 1 (drop one cube into cup), 2 (drop second cube), 3 (drop third cube), 4 (drop fourth cube). Stop."
3. Ask students if the group matches the number. If they are unsure, show how to match the cubes to the dots on the back of the card.
4. Repeat with another number. Encourage students to say, "Stop!" when they hear the target number.
5. Silently show the number 5. Invite a child forward to count out a group of 5 ice cubes. Repeat with numerals 1–4.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

For students who are struggling with counting a group of objects using one-to-one correspondence, provide a variety of scaffolds. Some students will need hand-over-hand guidance to ensure one-to-one correspondence. Kinesthetic learners might benefit from pairing the numeral with the same number of jumps, stomps, or finger taps before counting out the group of cubes.

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Part 2: Practice

Materials: (S) Baggie containing 8 cubes, numeral cards 1–5, clear plastic cup

MP.6

1. Pair students, and send them to prepared tables as waiters and waitresses.
2. Tell Partner A to take a card from the stack, and show the number without saying it. Tell Partner B to make a group of that many ice cubes. Then, partners switch roles.
3. Encourage students to use the dots on the back of the cards if they need help remembering.
4. As students work, circulate and describe what they are doing using parallel talk, e.g., "Gianna saw the number 4, so she is counting a group of 4 ice cubes."

Student Debrief (3 minutes)

Lesson Objective: Look at a numeral and count out a group of objects to match (abstract to concrete).

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, use new vocabulary, and explore new concepts.

- (Show the numeral 5.) I want to make a group of this many. How many cubes should I put in my group? (Repeat with 1–4.)
- (Show 4 cubes, 4 sticks, the dot configuration for 4, and the numeral 4.) Which of these tells how many cubes I have? (Help students realize that all of these represent the quantity 4.)
- (Show a numeral card.) Can you make a group of this many objects at home? What would be in your group?

CENTER CONNECTION:

Have students use the kitchen center to make groups like in Lesson 23. Today, have the "diners" use numeral cards to show the number of vegetables they want instead of dot cards.

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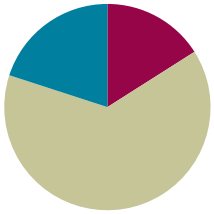
Lesson 25

Objective: Represent numbers 1–5 using objects, pictures, and numerals.

Suggested Lesson Structure

Fluency Practice	(4 minutes)
Concept Development	(16 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**



Fluency Practice (4 minutes)

- Counting Ice Cubes to 5 **PK.CC.2, PK.CC.3** (4 minutes)

Counting Ice Cubes to 5 (4 minutes)

Materials: (S) 5 linking cubes, cups mat (Fluency Template) or plastic cups with numerals 1–5 written on them

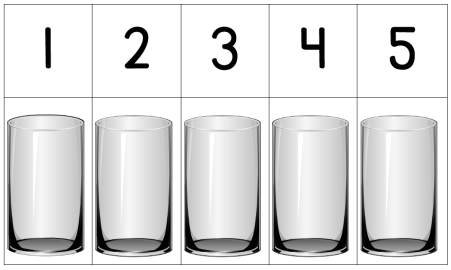
Note: This activity helps students maintain the skill of counting and matching a group of objects to a numeral within the context of play.

Distribute mats and give students a moment to notice what is different about the ice cubes activity today (they will now match their cubes to numerals). Acknowledge students' growth, and invite them to celebrate with silent applause before starting the counting exercise.

Conduct the activity as in Lesson 14, but now have students place the "ice cubes" on the picture of the cup that corresponds to the number of cubes.

A NOTE ON FLUENCY PRACTICE:

Fluency activities should be selected to meet the needs of each particular class. For example, if students are restless or need more practice with rote counting, choose the Number Cha-Cha to 5 as a fluency activity for this lesson.



Concept Development (16 minutes)

Part 1: Concept Introduction

Materials: (T) 3 trays, easel (if possible, for demonstration), piece of chart paper, sample number book, manipulatives (e.g., straws, puffballs), pre-cut magazine pictures and shapes (or cutouts 1–5, Template), 1-inch strips of construction paper (to create 5-groups), various art supplies (e.g., scissors, glue, glue sticks, dot painters, crayons, stickers)

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Gather materials on the carpet. On the first tray, place various manipulatives. On the second tray, place empty 5-group strips and pre-cut magazine pictures, shapes, or cutouts 1–5 template. On the third tray, place various art supplies, as noted in the materials.

1. Tell students, "We are going to make a number book to celebrate how much we know about 1, 2, 3, 4, and 5." Show students a sample book, and briefly explain materials.
2. Turn to the 1 page, displaying it on the easel. Describe the page using self-talk, e.g., "Look, I see the number 1 at the top. I drew 1 red circle to match the number. Then, I glued a picture of 1 bumblebee, (counting) 1."
3. Ask students, "What can I add to my page to show 1?" Add suggestions, such as gluing 1 puffball.
4. Tell students, "Now, let's make a giant 2 page together." (Use chart paper.) Encourage students to think of different ways to show the number 2.
5. Invite students to come forward to share ideas, adding them to the class page (e.g., "I can trace my two fingers.")

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

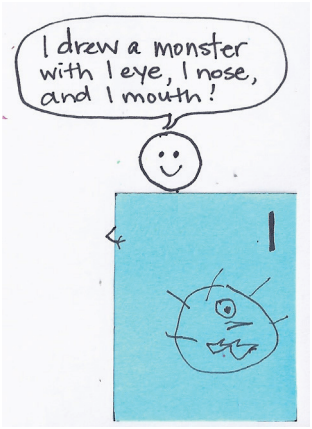
Some students may benefit from continuing to work at the concrete level. Provide children with teddy bear counters, linking cubes, etc., that they can arrange and count before drawing them on their number page. Then comment, e.g., "Pia, I see you drew two teddy bears to match your counters."

Part 2: Practice

Materials: (S) Per student: 5 sheets of 8.5" × 11" colored construction paper with numbers 1–5 written in the upper right hand corner; per table: caddy with art supplies

Send students to tables to make their own books. Have supplies ready on each table. Start all students with the number 1.

1. As students work, circulate and describe what they are doing using parallel talk, e.g., "Andrew is drawing 1 car on his paper to match the car he plays with in our classroom," or "Ian is showing 1 on his paper strip with the green dot painters."
2. Circulate and ask how the number is shown. Record the dictation on the page. For example, write, "I drew a monster with 1 nose, 1 mouth, and 1 eye."
3. Children will work at different rates. As each child finishes one page, write his or her name on the back of the page, and set it aside. Then provide the next numeral page for the child to continue working.
4. Call students to the carpet with the page they are currently working on, in preparation for the Student Debrief.



Note: Students will continue to work on their number books in the next lesson.

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Student Debrief (5 minutes)

Lesson Objective: Represent numbers 1–5 using objects, pictures, and numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- What are some of the ways you can show 3? (Ask students to share their pages. Focus on the quantities 1–3.)
- Turn to your partner and share the last page you were working on. How did you show the number? How did your partner show the number? What is different about your pages?
- (Guide partners to compliment each other's work.) Finish this thought, "I like the way you…."
- Tell your partner one more way that she can show the number on her page. What might she add to her book tomorrow?

CENTER CONNECTION:

In the art center, encourage students to create art works that represent a specific number (e.g., a picture of the four people in a family). They can use these art works in their number books.

This is also an opportunity to set up a center station where students can find and cut out pictures representing a number from 1 to 5 from child-appropriate magazines.

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5	
4	
3	
2	
1	

cups mat

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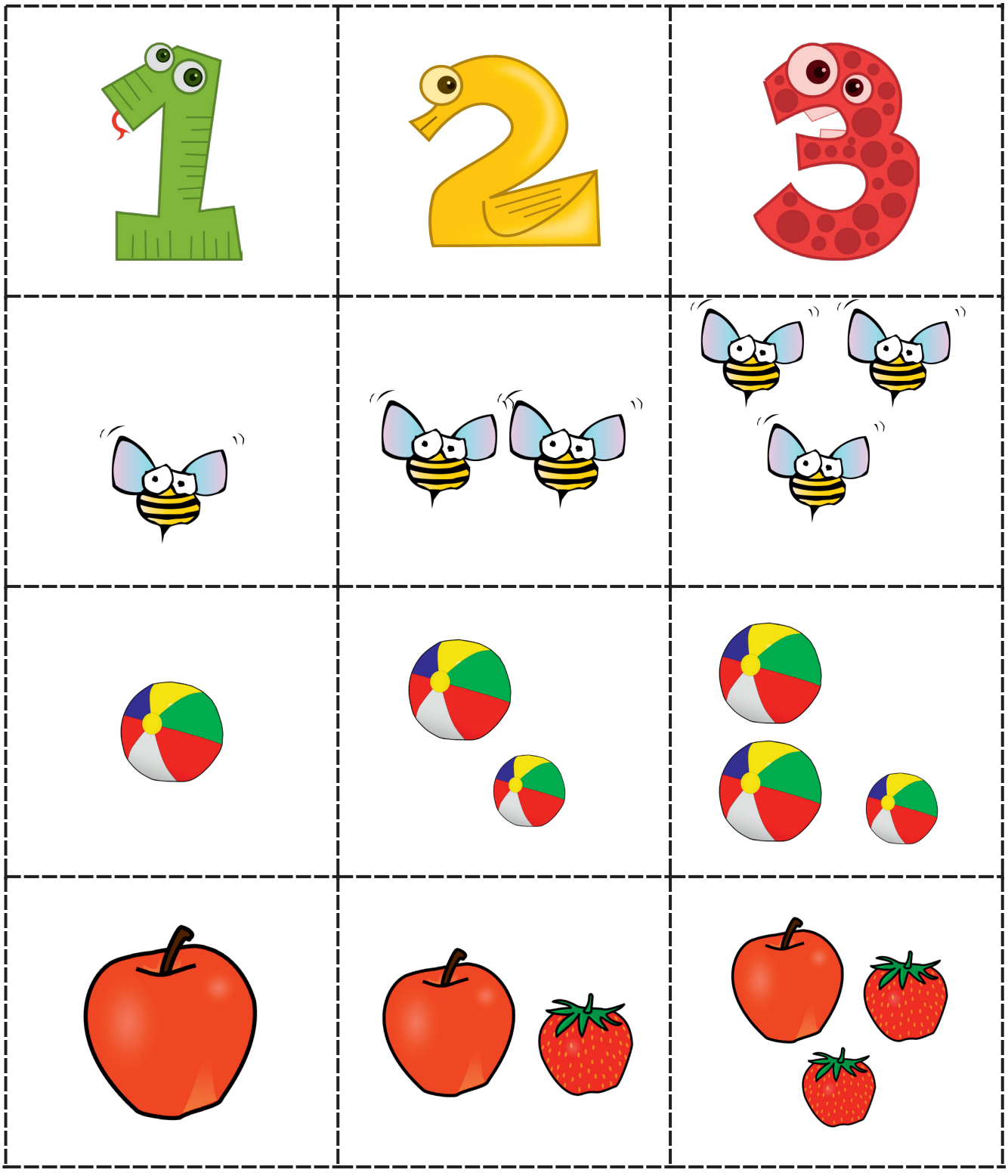

cutouts 1–5

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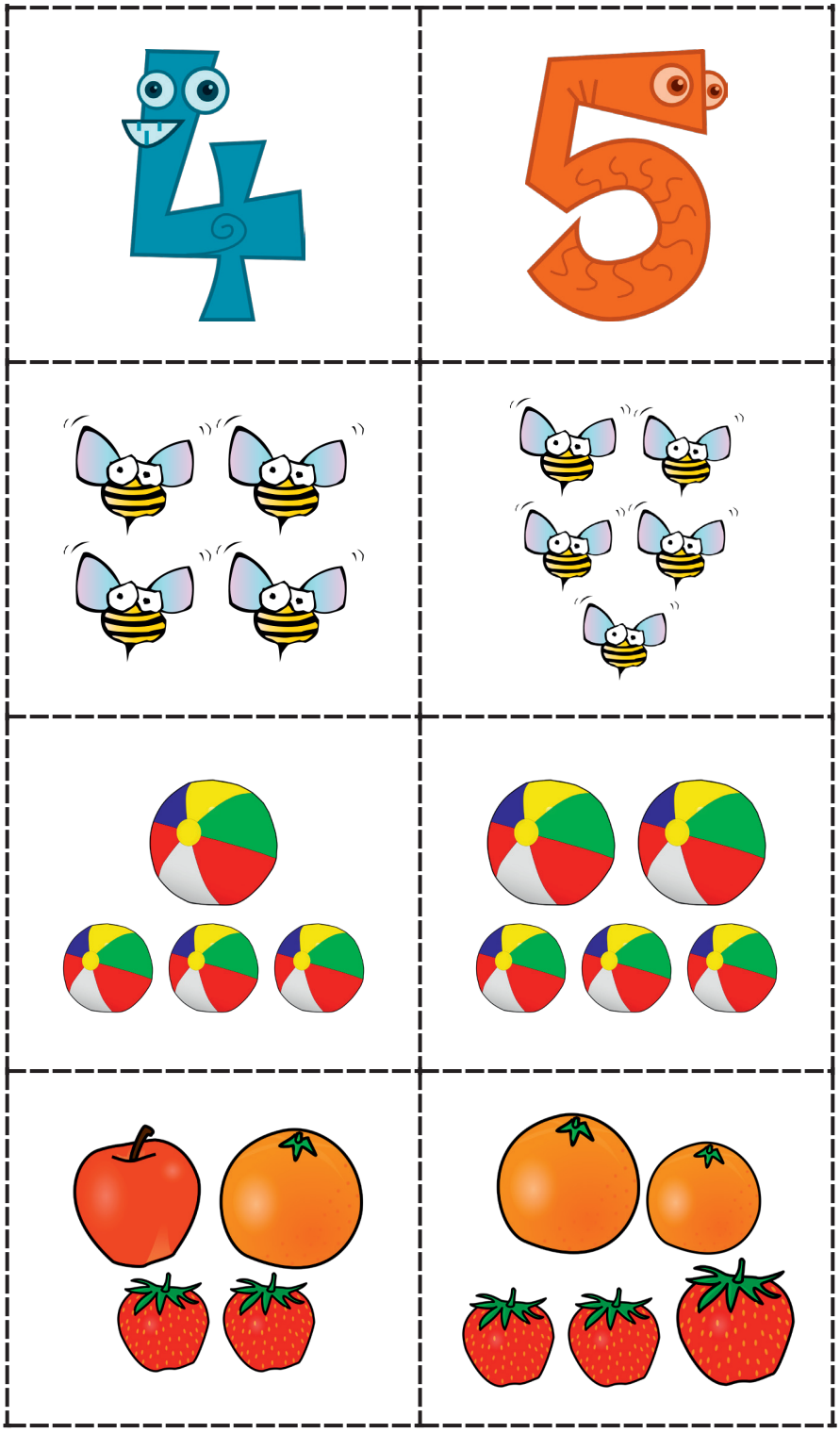

cutouts 1–5

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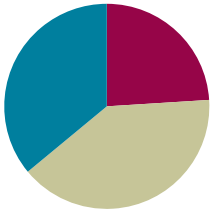
Lesson 26

Objective: Represent numbers 1–5 using objects, pictures, and numerals.

Suggested Lesson Structure

Concept Development	(10 minutes)
Fluency Practice	(6 minutes)
Student Debrief	(9 minutes)
Total Time	**(25 minutes)**



Note: Fluency Practice follows the Concept Development today. Students use their number pages from the Concept Development of Lessons 25 and 26 in the fluency activities.

Due to the nature of this two-day lesson, Part 1 has been removed from the Concept Development to allow for an extended sharing during the Student Debrief. Consider inviting families or members of the school community to join in the Student Debrief.

Concept Development (10 minutes)

Part 2: Practice (Day 2)

Materials: (T) 3 trays, manipulatives (e.g., straws, puffballs), pre-cut magazine pictures and shapes (or Lesson 25 Template), 1-inch strips of construction paper (to create 5-groups), stapler (S) Per student: remaining number book pages (from Lesson 25); per table: caddy with scissors, glue, glue stick, dot painters, crayons, stickers

Gather materials on three trays, and lay them on the carpet. Place a small caddy with art supplies at each student table (see Lesson 25).

1. Gather students on the carpet, and choose a few student samples to share. For example, "On this 3 page, Tamzin put a sticker inside each box on this strip of paper. She made a group of 3 objects." Or, "On this 4 page, Julius drew 4 people in his family, 1, 2, 3, 4."
2. Send students to tables to continue working on the pages for their number books. Again, circulate and ask each child how she showed the given number. Record the dictation on the page. For example, write, "This is a picture of 5 friends playing." MP.5
3. When all of the students' pages are complete, tell the class they will use the individual pages from their number books to practice showing numbers.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Challenge early finishers to add a new idea to each number page or to read their book to another classmate using the phrase *1 more*.

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Fluency Practice (6 minutes)

- Show the Number **PK.CC.2** (6 minutes)

Show the Number (6 minutes)

Materials: (T) Stapler (S) Number pages 1–5 created in Lessons 25 and 26, cover page (Template)

Note: This fluency activity maintains students' ability to count and match quantities with numerals to 5.

Part 1: Teacher Directed Number Practice

- Say a number from 1 to 5 aloud, and have students hold up their corresponding number page (1 minute).
- Use fingers to show a number from 1 to 5 the Math Way, and have students hold up their corresponding number page (1 minute).

Part 2: Partner Practice

- Students practice the fluency activities from Part 1 with a partner as the teacher assembles number books.
- Add each student's cover page, and write his or her name.
- Call students to the rug to share their books and debrief.

Student Debrief (9 minutes)

Lesson Objective: Represent numbers 1–5 using objects, pictures, and numerals.

Note: Begin the Student Debrief with a four to five minute Gallery Walk, inviting students and guests to read and enjoy the number books. Then invite children to bring their books to the circle for discussion.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for evidence of student understanding that can be celebrated in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Look at your book. Tell me what you used to show 4.
- Turn to the page that is your favorite. Share it with your partner. What did you use to show the number?
- Invite visiting community members to comment about the books.

CENTER CONNECTION:

Consider creating a station for students to continue work on their number books during centers. This will support children who need significant amounts of uninterrupted time to complete their work.

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- Who would like to share a number 1 page? (After student shares, invite students and community members to clap 1 time. Repeat with other number pages.)

Keep student number books in a safe place. Children will add to the books in Module 3 as part of the culminating activity.

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MY NUMBER BOOK

BY _____

cover page

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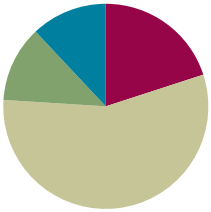
Lesson 27

Objective: Play a game involving numbers to 5.

Suggested Lesson Structure



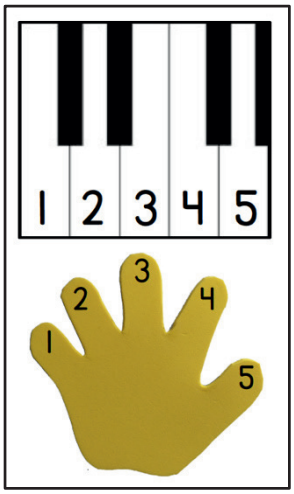
Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- Counting the Math Way on the Piano **PK.CC.3a** (2 minutes)
- Mix and Match with Dots and Numerals **PK.CC.2** (3 minutes)

Counting the Math Way on the Piano (2 minutes)

Materials: (T) Stickers (for students who still need them) (S) Piano mat with numerals (Lesson 23 Fluency Template)



Note: In addition to internalizing the number line, students now learn to associate a numeral with each finger by using the numeral version of the mat. This new variation of counting on the piano anticipates the work with *1 more* (Topic G) by connecting a higher pitch voice with the growing numbers.

Conduct the activity as described in Lessons 23 and 24, but now have students start out in a low-pitch voice and get a little higher as they say each number: 1 would be the deepest pitch; 3 would be a regular pitch; and 5 would be the highest, squeakiest pitch. When giving directions, say the numbers in the pitch that is indicated, in case students are unsure of the meanings of the descriptors.

Remove the piano mat for students who are able to drop their fingers and count independently.

Mix and Match with Dots and Numerals (3 minutes)

Materials: (T) Music (optional) (S) Numeral cards 1–5 (Lesson 12 Template 2), dot cards 1–5 (either side, Lesson 16 Template 2)

Note: This activity gives students a preview of today's work matching dots and numerals so that they can be successful in playing the game.

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1. Distribute one dot or numeral card to each child.
2. Start the music, if using it. Have students wander about the room, scanning for a student who has the numeral or dot card that matches their own.
3. Stop the music, or give a signal. Direct students whose cards match to link arms. Check to ensure all matches are correct.
4. Have students trade their cards with another student and play again.

If class size is large, play the game in rotations. While one group is participating, have the remaining students act as teacher's helpers, observing and confirming matches with a thumbs-up. Choose the most advanced students to participate first and struggling learners last. That way they will have had one or more times to observe.

Application Problem (3 minutes)

Materials: (S) Baggie containing a representation of either 1, 2, 3, 4, or 5 (e.g., 3 bear counters, picture of 2 cows, foam numeral 5)

Distribute a bag to each student, and have the group sit in a large circle. Give children a short period of time to explore the contents of their bags. If students have a bag that shows 1, ask them to stand and show the contents of their bag to the class. Repeat with numbers 2–5.

Note: This activity gives students another opportunity to see different ways of showing numbers 1–5. Students will see similar representations in the bingo game.

Concept Development (14 minutes)

Part 1: Concept Introduction

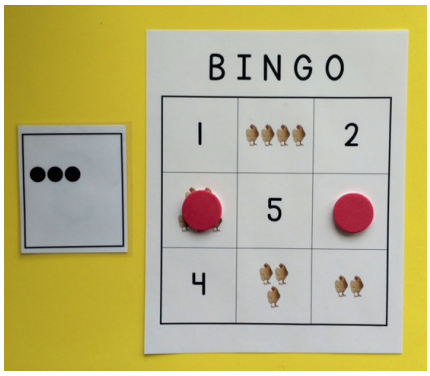
Materials: (T) Large bingo board on chart paper (Template 1), chips, 2 sets of numeral cards 1–5 (Lesson 12 Template 2) (S) Bingo board (Templates 1–5), baggie with chips

Mix the numeral cards deck. Cards should be mixed so that sometimes the numeral shows and sometimes the dots show.

1. Distribute a bingo board and baggie with chips to each student. Place a large bingo board in the center of the carpet. "Let's play bingo. What do you see on your bingo board?"
2. Guide students to see different representations of the numbers 1–5. Explain that they should say, "Bingo!" when they have three chips in a row.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide boards that match the teacher's enlarged example to students who need extra support to understand the game.



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3. Choose a card and show the numeral side. Say, "I chose the number 4, so you put your chip on a space that shows 4." Invite a volunteer to place a chip on the large bingo board. Have students do the same on their boards.
4. Ask, "Could I have put my chip on any other spaces on my board?" If children do not see both options, point them out.
5. Repeat with a new card, but this time show the dot side.
6. Continue to select cards and demonstrate on the large board. Monitor student boards to help them say, "Bingo!"

Part 2: Practice

Materials: (T) Numeral cards 1–5 (Lesson 12 Template 2)
(S) Bingo board (Templates 1–5)

1. Have students pass their boards to the person on the right. Remove the teacher model, and play again.
2. Watch as children play, occasionally pointing out strategic choices on their boards.
3. Each time bingo is called, point out the different ways a line of 3 chips can look (vertical, horizontal, or diagonal).

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

If students need an extra challenge, create boards with 4 rows and 4 columns. Change the rules so that these students must get 4 in a row to win the game.

Student Debrief (3 minutes)

Lesson Objective: Play a game involving numbers to 5.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Choose a numeral card.) Which box on your bingo board matches this number? Is it the same box as your friends'? Are there the same number of (e.g., apples and chickens) in that box?
- Which numbers on your bingo board were the hardest to find? Why?
- Did you feel lucky sometimes? Did you feel unlucky sometimes? Why or why not?

CENTER CONNECTION:

Give children an opportunity to continue playing the game during centers. One student can take on the role of the teacher, picking a card and calling out the number. Children who are ready can even create their own game boards.

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B I N G O

5		3
	4	1
2		

bingo board

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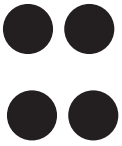
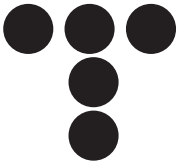
BINGO

	4	
	3	1
5	2	

bingo board

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B I N G O

	3	
2	5	1
	4	

bingo board

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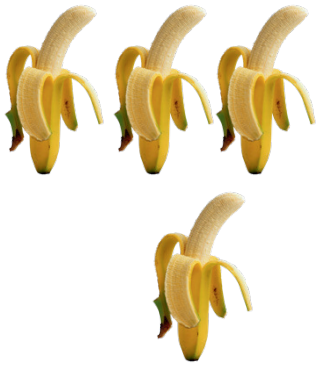
B I N G O

1	●●●●●	2
	5	3
4		

bingo board

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B I N G O

1		2
	5	3
4		

bingo board

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Topic G

One More with Numbers 1 to 5

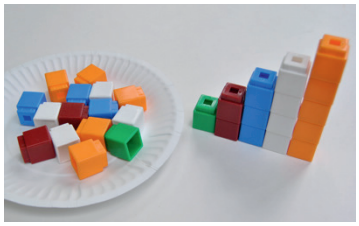
PK.CC.3c, PK.OA.2, PK.CC.2, PK.CC.5

Focus Standards:	PK.CC.3c	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.OA.2	Duplicate and extend (e.g., "What comes next?") simple patterns using concrete objects.
Instructional Days:	5	
Coherence Links to:	GK–M1	Numbers to 10

In Topic G, children build an understanding of consecutive numbers by discovering that each successive number name refers to a quantity that is one more (**PK.CC.3c**). This important insight is a precursor to *counting on* strategies in Grade 1.

In Lesson 28, children count 1, 2, 3, 4, 5, using the Math Way of counting to show a number of snakes slithering through sand. As more paths are drawn in the sand (like a tally mark), children see that the growing number of lines equals the growing number of snakes. This sets the stage for children to see growth patterns in Lesson 29. Here, they toss beanbags into hula hoops, stopping when the number of beanbags matches the numeral above each hoop, which progress from 1 to 5. Moreover, students see that if they have 2 beanbags in the 3 hoop, they need 1 more to match the numeral.

In Lesson 30, children use linking cubes to build number towers, adding 1 more cube and counting to find the new quantity: "I have 2 cubes. I put 1 more cube. Now, I have 1, 2, 3 cubes." Lesson 31 extends this understanding as children build separate number towers for each number 1–5, which they assemble into a set of number stairs (**PK.OA.2**). Students see that each subsequent stair needs 1 more cube so a bear can climb up to his tree house. Students synthesize this information in Lesson 32 to answer the following: "What number comes after 2?" and "Two. One more is ___?"



Throughout Topic G Fluency Practice, students count from 1 to 5 and visually notice growth patterns (e.g., a pattern of 1 more) in the context of songs and movement, in particular "The Ants Go Marching." In addition, the 1 More Seed activity helps students to see the pattern of 1 more as they "plant" seeds in a linear configuration on a 5-group strip. As in Topic F, students continue to practice counting the Math Way from 1 to 5, but now they do so on an imaginary piano without the support of the template.

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A Teaching Sequence Toward Mastery of *One More* with Numbers 1 to 5	
Objective 1:	**Count 1, 2, 3, 4, 5 with stories. (Lesson 28)**
Objective 2:	**Find *1 more*. (Lesson 29)**
Objective 3:	**Build a tower by putting *1 more* cube or block at a time. (Lesson 30)**
Objective 4:	**Build number stairs showing *1 more* with cubes. (Lesson 31)**
Objective 5:	**Count up—*What comes after?* (Lesson 32)**

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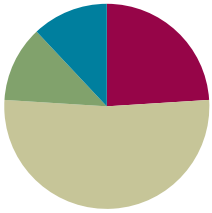
Lesson 28

Objective: Count 1, 2, 3, 4, 5 with stories.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Imaginary Piano **PK.CC.3a** (3 minutes)
- Merry-Go-Round **PK.CC.4** (3 minutes)

Imaginary Piano (3 minutes)

Note: This activity prepares students to count the Math Way without the template in the Concept Development.

Conduct the activity similarly to Counting the Math Way on the Piano in Lesson 27, but now eliminate the piano template. Students count from 1 to 5 starting with the left pinky, moving progressively to the thumb. Encourage them to imagine their piano template and to see the numerals in their mind as they say the number words. If students struggle, practice counting just to 3 today. Continue to 5 in the next lesson.

Merry-Go-Round (3 minutes)

Materials: (S) Paper plates with a dot sticker or line to mark the starting point, 1–5 teddy-bear counters, die with 6 replaced by 4 or 5, or numeral cards 1–5 (Lesson 12 Template 2)

Note: Students maintain the skill of counting in circular configurations within a familiar context. If using numeral cards, students become more proficient in numeral recognition and forming quantities to match a numeral.

In Lesson 21, the teacher rolled the die (or showed a numeral card), and students gave that number of teddy-bear counters a ride on the merry-go-round (paper plate). In this lesson, students can practice independently by rolling their own die or selecting a numeral card from a shuffled stack.

Working with numeral cards creates a simple way to differentiate for students who struggle with numeral recognition. Some students can work on 1–5 while others get a deck of cards 1–3, for example.

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Application Problem (3 minutes)

Select one student to stand in front of group. "Pretend Ananya is a snake slithering through the desert by herself. How many snakes are slithering through the desert?"

Select another student to come to the front. "James joined Ananya and said, 'Let's slither together.' (Students slither side by side.) How many snakes are slithering through the desert now?"

Continue with 3–5. Each time a friend joins, have them stand side by side. In preparation for the Concept Development, have students think about what happens to the sand when snakes slither through it.

Note: By participating in a story situation in which students join the group one by one, students begin to experience a growing pattern, or a pattern of *1 more,* in a fun way.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) Tray filled with sand

Place a tray filled with sand on the rug, and gather students in a circle to model the activity using the Math Way of counting.

1. Tell students to pretend that the teacher's pinky finger is a snake: "I am sliding my pinky finger through the sand from the top of the tray to the bottom (like a tally mark) to show Ananya the snake's path in the sand."
2. Smooth the sand to erase the path. Say, "James joined Ananya, and they slithered together through the desert. How many snakes are slithering through the desert now?"
3. Slide two fingers from the left hand (pinky, ring finger) through the sand, from the top of the tray to the bottom (like two tally marks) to show two snakes' paths.
4. Continue with 3–5 snakes, modeling how to use the fingers on the left hand only to show the growing group of snakes. Smooth the sand after each turn.
5. Say, "We can see how many snakes were slithering just by looking at the lines in the sand. Let's count the lines."
6. Ask students to count the number of lines each time, e.g., "1 line, 2 lines, 3 lines." Emphasize that the number of lines equals the number of snakes slithering through the desert.

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Part 2: Practice

Materials: (S) Per pair: tray filled with sand

Place a tray filled with sand for each pair of children at tables.

1. Pair students and tell them that they are going to pretend some snakes are slithering through the desert, beginning with 1.
2. Instruct Partner A to slide 1 finger through the sand using his or her left hand (i.e., the Math Way). Ask your partner, "How many snakes are slithering through the desert?"
3. Partner B counts the number of "tally marks" through the sand. Guide Partner B to respond in a complete sentence: "One snake is slithering."
4. Partner A smooths the sand, and partners switch roles. Another snake joins in, and now 2 snakes are slithering through the desert. Partners follow Steps 2–3.
5. As students work, circulate and describe what they are doing using parallel talk: "Dustin is sliding 3 fingers through the sand. He is pretending that 3 snakes are slithering through the sand."

NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

Sliding fingers in the sand may be challenging for some students. Encourage students who are having difficulty to use any correct combination of fingers. If students are having difficulty, provide opportunities to practice counting the Math Way during another time of the day.

Student Debrief (3 minutes)

Lesson Objective: Count 1, 2, 3, 4, 5 with stories.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- Can you show me the 5 snakes on your fingers?
- Show me 1 snake on your fingers. Show another snake. How many snakes do you have now? How many paths would your snakes make?
- How would your counting be different if your story started with 5 snakes and the snakes went home one at a time?

CENTER CONNECTION:

Invite children to continue showing snakes slithering in the sensory center. They can practice sliding their fingers through different materials (e.g., oatmeal, shaving cream, finger paint) to represent snakes, lizards, or anything that catches their imagination.

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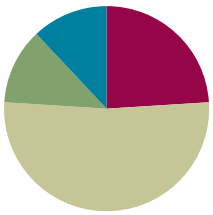
Lesson 29

Objective: Find *1 more*.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Imaginary Piano **PK.CC.3a** (2 minutes)
- The Ants Go Marching **PK.CC.3c** (4 minutes)

Imaginary Piano (2 minutes)

Conduct the activity as in the previous lesson, but now have students continue counting without the piano template to 5.

The Ants Go Marching (4 minutes)

Materials: (T) Song sheet for "The Ants Go Marching" with verses through the number 3 (Fluency Template)

Note: By participating in a story situation in which students join the group one by one, students begin to experience a growth pattern, or a pattern of 1 more, in a fun way.

Sing the song "The Ants Go Marching," and invite students to act out each verse: One student walks to show one by one, two students walk side by side to show two by two, and so on, until three students are walking side by side.

Before singing each verse, ask students to count the ants as they line up, e.g., "1 ant." "1 ant, 2 ants." Guide students to notice that the line widens as the numbers increase, asking, "Is the line wider when there are more ants?"

The Ants Go Marching

The ants go marching one by one.
Hoorah! Hoorah!
The ants go marching one by one.
Hoorah! Hoorah!
The ants go marching one by one;
The little one stops to suck his thumb,
And they all go marching down, to the ground
To get out of the rain. BOOM, BOOM, BOOM!

Repeat twice more, changing the verses:
The ants go marching two by two;
The little one stops to tie a shoe.
The ants go marching three by three;
The little one stops to climb a tree.

Repeat the activity using different children as ants. It is important for children to visually experience the pattern of 1 more both as observers and as participants. This song and activity returns in future fluency activities, so all students have a chance to watch and participate in the movement.

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Application Problem (3 minutes)

Select one student to stand in front of the group. "Leticia is outside by herself feeling bored. How many people are outside?"

Select another student to come to the front. "James joins Leticia and says, 'Let's dance.'" (Students dance.) "How many people are outside now?"

Continue with 3–5. Each time a friend joins, students should do a new movement (e.g., jumping jacks, marching, touching toes).

Separate class into groups of 5, and repeat so all children can move.

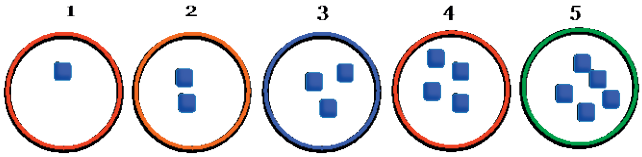
Note: By participating in a story situation in which students join the group one by one, students begin to experience a growing pattern in a fun way.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 1 beanbag per student (minimum of 15), 5 hula hoops labeled from left to right with the numbers 1–5 (as shown below)

Make a line in front of the hula hoops for students to stand on as they toss the beanbags. Place a numeral above each hoop, as pictured below. Lay 5 beanbags on the line for children to use.



1. Tell students, "Let's play beanbag toss! Throw your bags into the hoops until the correct number is in each hoop. Ready? Set. Go!"
2. Encourage students to talk about how many bags are in the hoops. Guide them to say, "We need more," "We have enough," or "We have too many." Encourage them to take bags out if there are too many.
3. When each hoop has the correct amount, say, "Does each hoop have the right number of bags? Let's count each group to check." Guide students to count, "1 bag, 2 bags, …, 5 bags."
4. Collect the beanbags from the hoops. Place 1 beanbag in the first and second hoops. Ask, "Which one is right? How can I make this hoop (pointing to the hoop marked 2) have the right number?" Guide students to see that it needs 1 more bag. Lead students in repeating, "We need **1 more**."
5. Place 2 beanbags in the third hoop. Ask, "Do these beanbags match the number? How can I make this hoop have the right number?" Support students in saying, "We need 1 more."
6. Guide students to see the pattern of 1 more by continuing this process for 4 and 5.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Facilitate the discovery of the pattern of 1 more by allowing students who are struggling to have numerous opportunities for practice throughout this activity and throughout the day.

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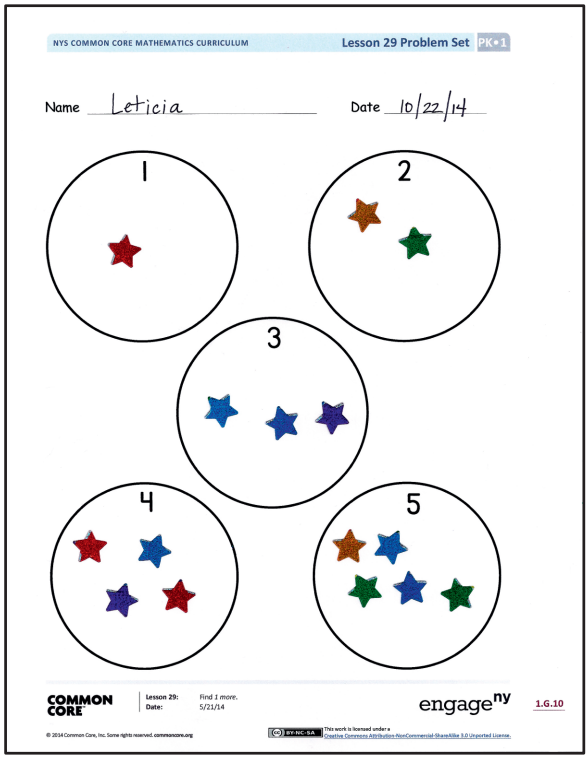
Part 2: Practice

Materials: (T) Stickers, Problem Set (S) Stickers, Problem Set

Before sending children to prepared tables, gather them in a circle to model the activity.

1. Show students the Problem Set and stickers. Tell them, "I see circles that look like our hula hoops! Let's put stickers in the circles to match the numbers."
2. Point to the circle labeled 1. Ask, "How many stickers should we put here?" Invite a student forward to add a sticker(s) to match the number and count.
3. Point to the circle labeled 2, and place 1 sticker inside. Ask, "How can I make this hoop have the correct number? What do we need to do?" MP.7
4. Again, invite a student forward to add a sticker(s) to match the number. Describe what he is doing using parallel talk, e.g., "Chase is adding one more sticker. His 2 stickers match the number 2."
5. Distribute the Problem Set to each student, and send them to tables. Encourage them to count each time they complete a circle, e.g., "1 sticker, 2 stickers, 3 stickers, 4 stickers."
6. As the students work, circulate and ask questions such as, "What is different about the number of stickers in this circle and in this one (point to the 4 and 5 circles)?" "If you were to put one more sticker in this hoop (point to 2), how many would there be?"


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 29 Problem Set PK•1

Name Leticia Date 10/22/14

1 2 3 4 5

COMMON CORE Lesson 29: Find *1 more*. Date: 5/21/14 engage^ny 1.G.10

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Student Debrief (3 minutes)

Lesson Objective: Find *1 more*.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**1 more**).

- Which circle had 5 stickers? Why? (Repeat with 1–4.)
- What pattern did you notice today? What happened when we added 1 more bag?
- How is what we did with the beanbags today the same as our song about the ants marching?

CENTER CONNECTION:

Look for opportunities to find *1 more* in centers. For example, in the dramatic play center, ask children to count and tell what happens if 1 more person is added to their imaginary family. As children build a tower with blocks, ask them to count each time they add 1 more block.

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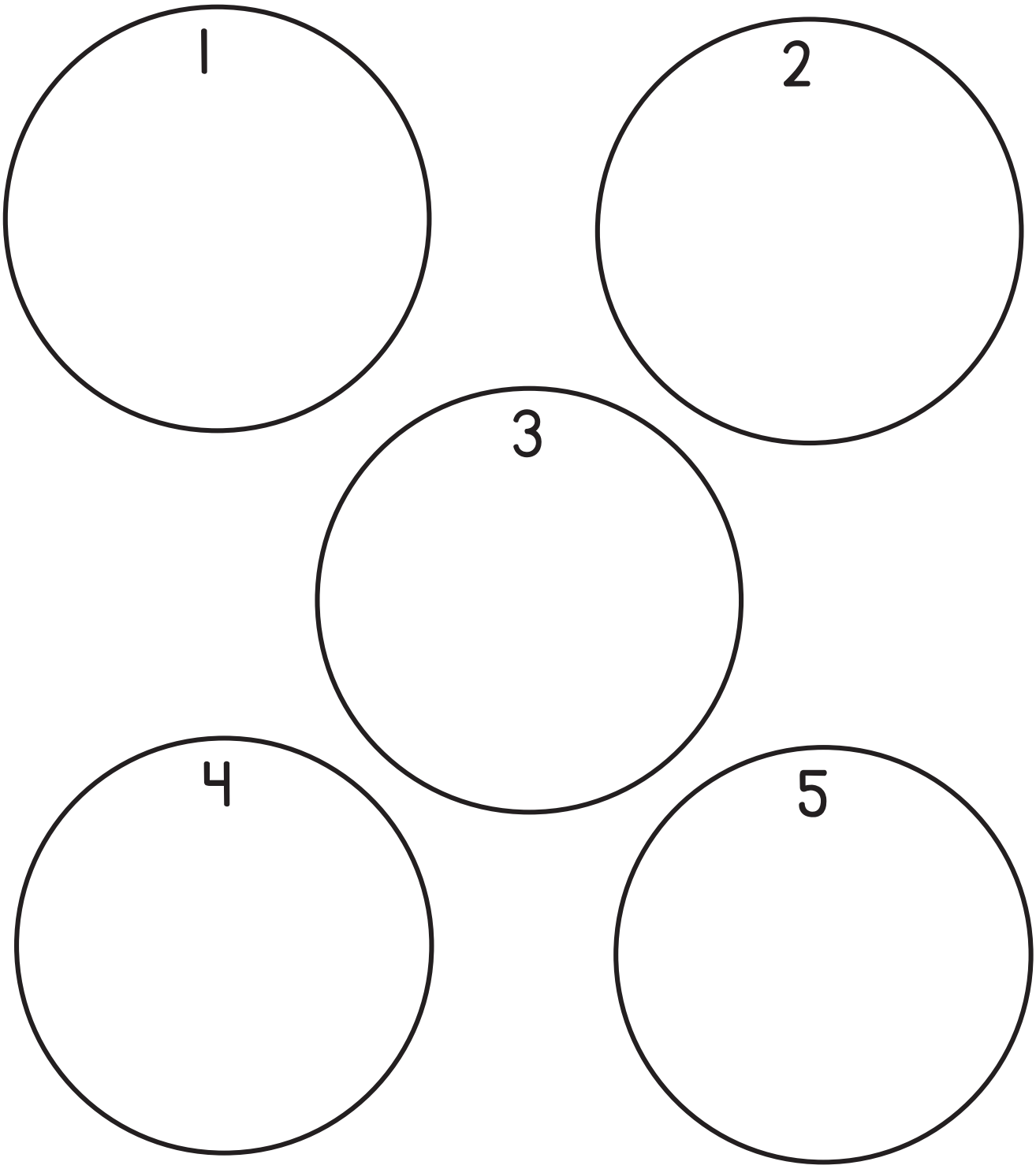
Name _____ Date _____



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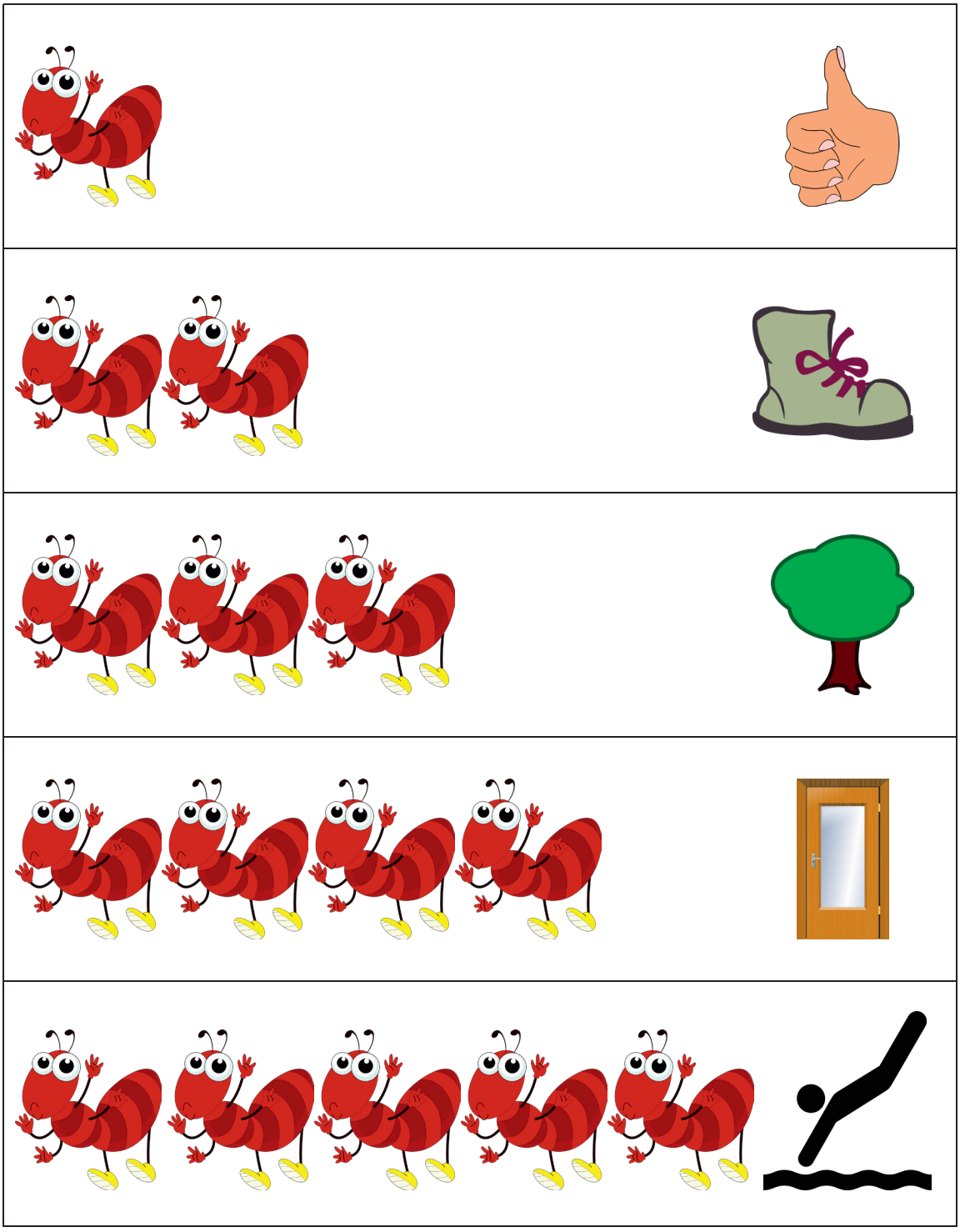

"The Ants Go Marching"

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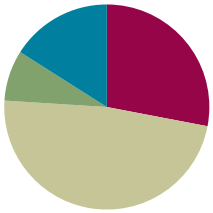
Lesson 30

Objective: Build a tower by putting *1 more* cube or block at a time.

Suggested Lesson Structure

Fluency Practice	(7 minutes)
Application Problem	(2 minutes)
Concept Development	(12 minutes)
Student Debrief	(4 minutes)
Total Time	**(25 minutes)**



Fluency Practice (7 minutes)

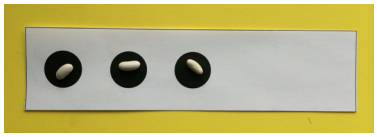
- 1 More Seed **PK.CC.3c** (4 minutes)
- The Ants Go Marching **PK.CC.3c** (3 minutes)

1 More Seed (4 minutes)

Materials: (S) 3 seeds (bean and pumpkin seeds work well), 5-group strip (3-dot) (Lesson 6 Fluency Template)

Note: This activity prepares students to work with the pattern of 1 more in a linear configuration.

T: Take 1 seed. Set it down on your garden row. How many seeds did you plant?
S: 1 seed!
T: Plant 1 more seed.
S: (Take another seed and set it on the second dot.)
T: How many seeds did you plant?
S: 2 seeds!



Continue to 3.

The Ants Go Marching (3 minutes)

Materials: (T) Song sheet for "The Ants Go Marching" with verses through the number 4 (Lesson 29 Fluency Template)

Note: By participating in a story situation in which students join the group one by one, students begin to experience a growing pattern, or a pattern of one more in a fun way.

Conduct the activity as before in Lesson 29, but now continue the parade to 4, with the additional verse:

The ants go marching four by four;
The little one stops to shut the door.

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Application Problem (2 minutes)

Materials: (T) 5 wrapped boxes (presents)

It's Cameron's birthday. His friend Riley arrives first and brings him a present. How many presents does Cameron have?

Cameron's friend Natalie brings him 1 more present. How many presents does Cameron have now? Lead students to repeat, "He has 1 more: 1 present, 2 presents."

Continue the story until Cameron has 5 presents.

Note: Children build on their understanding of 1 more within a story context.

Concept Development (12 minutes)

Part 1: Concept Introduction

Materials: (T) 5 large building blocks

1. Show students the building blocks and say, "Let's build a tower! I have 1 block. Can someone put 1 more on top?"
2. After the new block is added, ask, "How many blocks do we have now?" Lead children to repeat, "We have 1 more: 1 block, 2 blocks."
3. Say, "Let's put 1 more block on top. How many blocks do we have now?" Lead children to repeat, "We have 1 more: 1 block, 2 blocks, 3 blocks."
4. Say, "Let's make it even higher! Repeat the process until all 5 blocks are stacked. Each time, count the blocks, leading with, "We have 1 more."

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Part 2: Practice

Materials: (S) Per pair: baggie with 5 linking cubes

Pair students and send them to tables with a baggie.

1. Tell Partner A to take 1 cube from the baggie and say, "I have 1 cube." Guide her to tell Partner B, "Put 1 more, please."
2. Tell Partner B to follow Partner A's directions and count. Guide him to say, "1. 1 more is 2."
3. Partner A says, "We have 2 cubes. Put 1 more, please." MP.7
4. Again, Partner B follows Partner A's directions and counts. Guide him to say, "2. 1 more is 3."
5. Repeat until all 5 cubes are added to make a tower of 5.
6. As students work, circulate and describe what they are doing using parallel talk, e.g., "Caroline is building a tower by putting one more on at a time. She had 3 and is adding 1 more to make 4."

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide options for understanding *1 more* by calling attention to real life situations of one more throughout the day (e.g., At snack time, we might hear "We need one more plate"). This can help students who may have difficulty transferring the concept of *1 more* from an isolated math lesson to a variety of situations.

Provide context for this activity by telling children that the cubes represent birthday presents being stacked up.

Student Debrief (4 minutes)

Lesson Objective: Build a tower by putting *1 more* cube or block at a time.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Hold a tower of 2 cubes in one hand and 1 cube in the other. With students watching, join them behind your back.) How many cubes are in my tower now? After students guess, show them the composed tower to confirm that there are 3. (Repeat to 5, continuing to join 1 cube.)
- Tell your friend how you built your tower. (Give students an example if needed, "I built my tower by putting one cube on at a time.")
- How did your tower change each time you put one more block on top?
- When we put one more block, did you have to start counting again from 1? What is another way you can tell how many there are?

CENTER CONNECTION:

Replicate this activity in the block center. As a variation, have children build a road instead of a tower. Support them to add 1 more and count each time. With practice, children begin to see the pattern of 1 more and no longer need to count each time.

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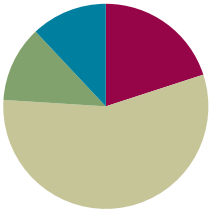
Lesson 31

Objective: Build number stairs showing *1 more* with cubes.

Suggested Lesson Structure



Fluency Practice	(5 minutes)
Application Problem	(3 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (5 minutes)

- 1 More Seed **PK.CC.3c** (2 minutes)
- The Ants Go Marching **PK.CC.3c** (3 minutes)

1 More Seed (2 minutes)

Materials: (S) 5 seeds, 5-group strips (5-dot) (Fluency Template)

Note: This activity prepares students to work with the pattern of 1 more in a linear configuration.

Conduct the activity as in the previous lesson, but now continue planting seeds to 5.

The Ants Go Marching (3 minutes)

Materials: (T) Song sheet for "The Ants Go Marching" with verses through the number 5 (Lesson 29 Fluency Template)

Note: By participating in a story situation in which students join the group one by one, students begin to experience a growing pattern, or a pattern of 1 more, in a fun way.

Conduct activity as in Lesson 29, but now continue the parade to 5 if students are ready, with the additional verse:

The ants go marching five by five;
The little one stops to take a dive.

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Application Problem (3 minutes)

Materials: (T) 5 unit blocks, numeral cards 1–5 (Lesson 12 Template 2) (S) 5 unit blocks, numeral cards 1–5 (Lesson 12 Template 2)

Provide each student with a set of blocks and numeral cards. Pretend the blocks are pancakes. Have student volunteers help build a stack of pancakes, one at a time. After adding each pancake, ask children to find the number that shows how many pancakes are in the stack. Encourage children to share how they know how many pancakes were in the stack.

Note: Some students will continue to count all of the blocks each time a new block is added to the tower. Other children will start to see the pattern and understand that each successive number refers to a quantity that is one larger.

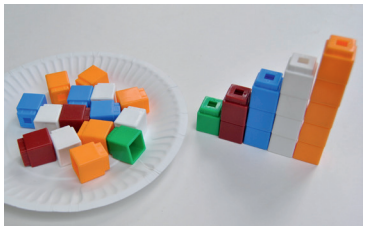
Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) 15 linking cubes in different colors for each number tower 1–5, 1 teddy-bear counter

Note: In this lesson, students build separate number towers for each number 1–5. Each tower should be a different color to help students distinguish each number.

1. Show students the bear and the linking cubes. Say, "Let's make stairs so Bear can go up to his tree house."
2. Show 1 cube and ask how many. Tell students, "Let's make the next stair with 1 more so Bear can go up." Join 2 cubes and place the towers in ascending order.
3. Ask, "How many cubes are in this stair?" Lead students to repeat, "1. 1 more is 2."
4. Tell students, "Bear wants to go higher. How many cubes do you think should be in our next stair?" Guide students to say, "1 more. 3 cubes!"
5. Assemble 3 cubes and guide students to say, "2. 1 more is 3."
6. Continue until all towers are assembled and arranged in ascending order. Ask an open question, "What do you notice about the stairs?" A student might say, "Each stair has 1 more."
7. Have students count the number in each tower, "1 stair, 2 stairs, …, 5 stairs." Praise them, "You made a great staircase! Now Bear can climb up to his tree house!"



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Part 2: Practice

Materials: (S) 15 linking cubes in different colors for each stair 1–5, 1 bear counter (optional)

Prepare each table with a basket of multi-colored linking cubes.

1. Send students to prepared tables, and tell them, "Build stairs like mine for Bear." As students build each tower, encourage them to say, "1 more is 2; 1 more is 3; …, 5."
2. When they finish their staircase, encourage them to count aloud in order.
3. Give students a bear counter, and encourage them to move the bear up the stairs as they count aloud.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide concrete models of the staircase for students who are experiencing difficulty replicating the teacher's staircase to avoid frustration and encourage effort and persistence.

Call attention to stairs in the school, and encourage students to count each time they go up one more stair.

Student Debrief (3 minutes)

Lesson Objective: Build number stairs showing *1 more* with cubes.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Hold up two towers of 3 cubes.) What can we do to make this look like stairs?
- (Scramble the towers of stairs.) Oh no! The wind blew Bear's stairs over. Can you put them back together? How will you know where each step belongs?
- (Show Bear climbing up the stairs.) How do we count as Bear climbs up to his tree house? Make a prediction: How do you think we will count when Bear climbs down?

CENTER CONNECTION:

Provide more time to work with the concept of *1 more* at the art center. Provide small squares of paper (sticky notes work well) so that children can build a set of number stairs. Encourage them to draw characters and tell a story about why the character needs to climb the stairs.

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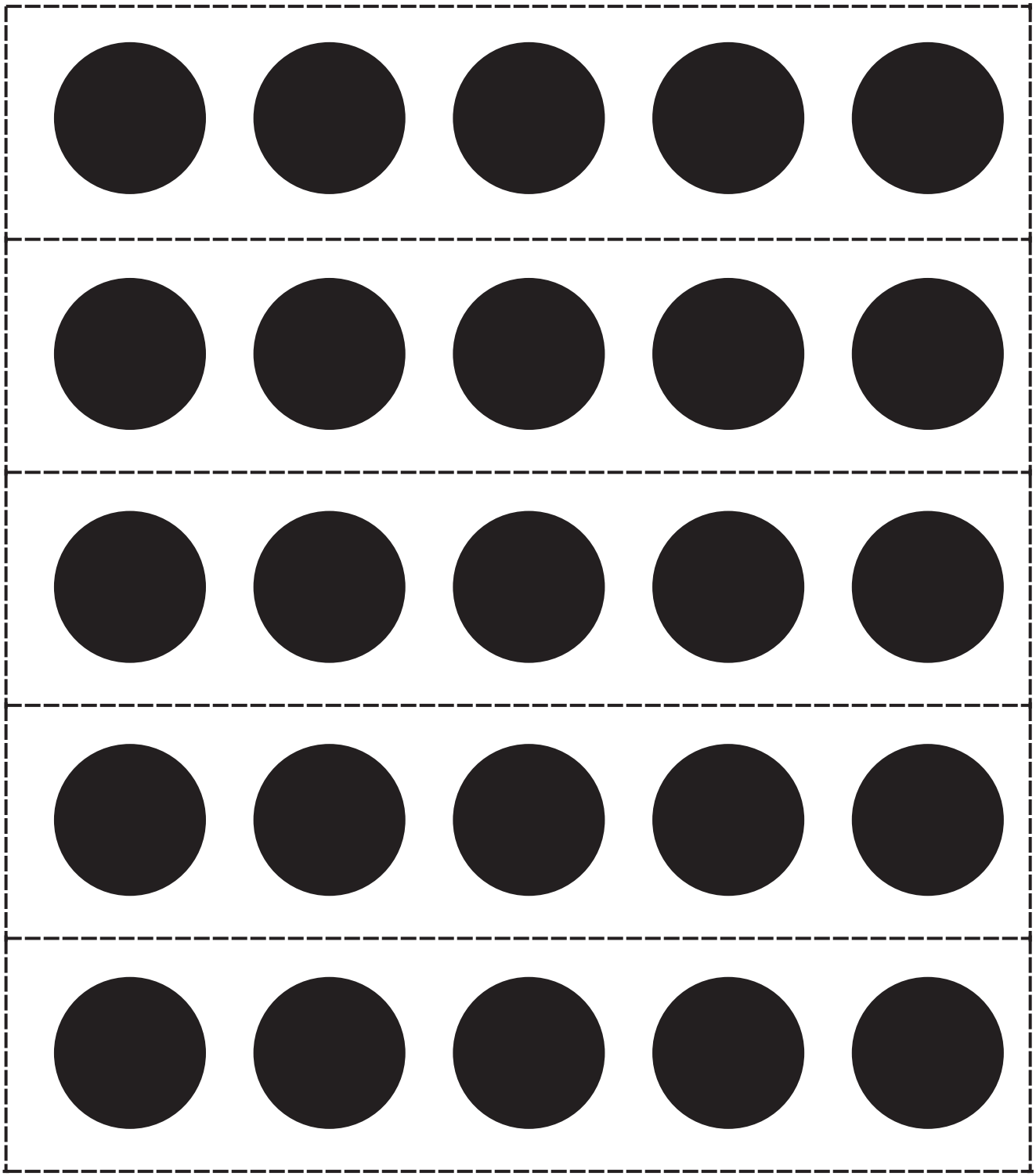

5-group strips (5-dot)

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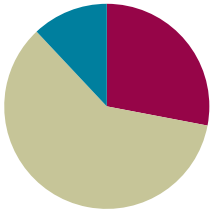
Lesson 32

Objective: Count up—*What comes after?*

Suggested Lesson Structure

Fluency Practice	(7 minutes)
Concept Development	(15 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (7 minutes)

- Show Me 1 More **PK.CC.3c** (3 minutes)
- The Ants Go Marching **PK.CC.3c** (4 minutes)

Show Me 1 More (3 minutes)

Note: Children will use their understanding of the *1 more* pattern to answer *what comes after* questions in today's lesson. Perspective is important when demonstrating how to count the Math Way. When sitting beside students (both facing the same direction) or using the piano mat, model the count starting from the left pinky. When facing students, model the count starting from the right pinky, as children tend to mirror the teacher from this perspective.

Provide piano mats to students who still need the visual support, but encourage most students to try without the template today.

Ask children to show 1 finger the Math Way. Say, "1. 1 more is 2." Have students repeat as they show 2. Continue the 1 more pattern to 5.

The Ants Go Marching (4 minutes)

Materials: (T) Song sheet for "The Ants Go Marching" with verses through the number 5 (Lesson 29 Fluency Template)

Note: By participating in a story situation in which students join the group one by one, students begin to experience a growth pattern, or a pattern of 1 more, in a fun way.

Conduct the activity as before in Lesson 31. Continue the parade to 5 if students have not already done so. Take a moment to acknowledge students' growth and improvement.

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Concept Development (15 minutes)

Part 1: Concept Introduction

Materials: (T) Party box, linking cubes connected in towers of 1, 2, 3, and 4
(S) 1 linking cube

1. Tell students, "Let's play a game called What Comes After. Hidden inside this party box are number towers of 1, 2, 3, and 4."
2. Give each student 1 cube. Tell them, "When it is your turn, reach into the box, and take out a number tower."
3. Choose a student to model. Ask the student to pull a tower out of the box. Ask, "How many are there?" Students count chorally, "1, 2, 3."
4. Emphasize that the last number counted tells *how many*. Say, "Yes, there are 3 cubes."
5. Have the student put 1 more cube on top of the tower. Use parallel talk: "She is putting on 1 more. Let's start at 3 and count 1 more." Students count chorally, "3, 4."
6. Ask, "What comes **after** 3?" Lead students in saying and repeating, "4 comes after 3!"
7. Have the student take back her cube. Put the number tower back in the box. Choose another student, and continue to play until all students have had a turn.

Part 2: Practice

Materials: (T) Problem Set, stickers (S) Problem Set, 15 stickers

Pair students and send them to prepared tables with their Problem Sets.

1. Show students the Problem Set and stickers. Tell them, "Let's make sticker stairs on this grid!"
2. Briefly model the activity, asking, "How many stickers will you put above the number 1?"
3. Guide students to put the correct number of stickers above the number 2, putting 1 more than the number in the previous column.
4. Guide Partner A to ask, "What comes after 1?"
5. Guide Partner B to respond, "2 comes after 1."
6. Continue the process for 3, 4, and 5.
7. MP.7 After partners fill in their grid sheets to show stairs, encourage them to point and say, "2 comes after 1. 3 comes after 2. 4 comes after 3. 5 comes after 4."

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide options for a variety of learners. Scaffold strategies from concrete to pictorial to abstract. During Part 2, some students may need to use the linking cubes to help them answer the *what comes after* question and count the correct number of stickers. Other students will be able to quickly visualize how many stickers they need without touching and counting.

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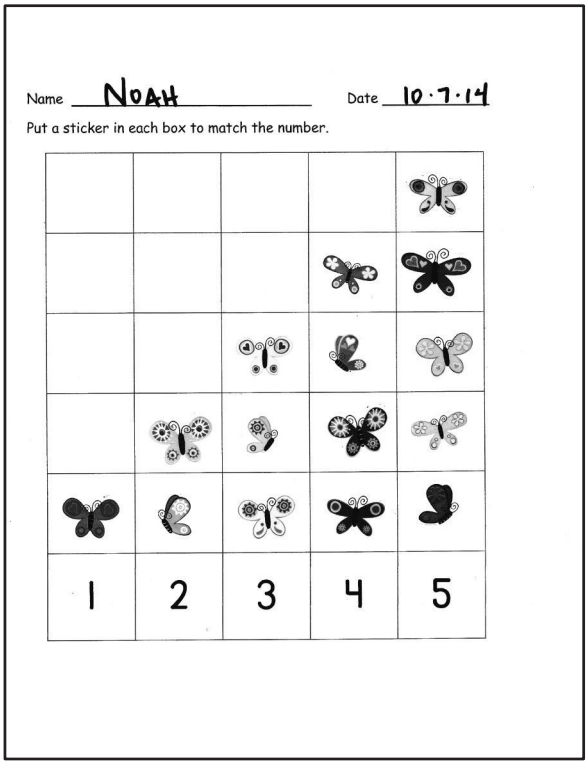
Student Debrief (3 minutes)

Lesson Objective: Count up—*What comes after?*

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**after**).

- How many cubes did we put on our towers that helped tell us what came after?
- How is your sticker sheet the same as the stairs you made yesterday?
- Show your friend what comes after 2 using your sticker sheet. Point to where it shows what comes after 2. Point to where it shows what comes after 4.
- (Show 3 fingers. Hide your fingers while students watch.) I am going to add 1 more finger. Show me the number of fingers I have now.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Put a sticker in each box to match the number.

1 2 3 4 5

CENTER CONNECTION:

Use the party box and cube towers from Part 1 in a center. Have students take turns choosing a tower and telling what comes after.

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Name _____ Date _____

Put a sticker in each box to match the number.

1	2	3	4	5

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Topic H

Counting 5, 4, 3, 2, 1

PK.CC.3c, **PK.OA.2**, PK.CC.2, PK.CC.5

Focus Standards:	PK.CC.3	Understand the relationship between numbers and quantities to 10; connect counting to cardinality. c. Understand that each successive number name refers to a quantity that is one larger.
	PK.OA.2	Duplicate and extend (e.g., "What comes next?") simple patterns using concrete objects.
Instructional Days:	5	
Coherence -Links to:	GK–M1	Classify and Count Numbers to 10

In Topic G, students recognized the pattern of *1 more* within the counting sequence by building number stairs. In Topic H, students use the same models, now to investigate 1 less.

Lessons 33 and 34 ask students to make step-down number stairs. They start at the concrete level, using linking cubes to create the stairs. Next, they work at the pictorial and abstract levels, using lines of pennies and stickers to match the numerals pre-arranged as 5, 4, 3, 2, 1.

In Lessons 35 and 36, students count 5, 4, 3, 2, 1. In Lesson 35, they dramatize a popular song where five little crabs wash away, one at a time, retelling the story by stating the number of crabs after each wave comes. Next, they count down on their fingers starting from showing 5 fingers on the left hand down to 1 (**PK.CC.3c, PK.OA.2**). In Lesson 36, students similarly dramatize the rhyme "Five Little Fishies," counting down from 5 fish as Mr. Shark "snaps" each one out of the sea.

Finally, students participate in a culminating experience where they demonstrate the skills they have learned in this module by building towers and matching numerals (**PK.CC.1–4, PK.MD.2**).

Throughout Topic H Fluency Practice, students count up to 5 and down to 1 as they experience 1 more and 1 less in the context of songs, games, and movement. For example, the repetitive lyrics from "Farmer Brown" facilitate fluency in counting down. In this topic, students learn a fine motor strategy for counting the Math Way on their fingers, beginning with their left hand in a fist and stretching out one finger at a time, beginning with the pinky.

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A Teaching Sequence Toward Mastery of Counting 5, 4, 3, 2, 1	
Objective 1:	Build descending number stairs at the concrete and pictorial levels. (Lessons 33–34)
Objective 2:	Count 5, 4, 3, 2, 1 using a story and the fingers of the left hand. (Lessons 35–36)
Objective 3:	Culminating task—sort objects by use and count each group; represent one group with a number tower and numeral. (Lesson 37)

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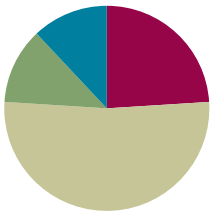
Lesson 33

Objective: Build descending number stairs at the concrete and pictorial levels.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- *1 More* Chant **PK.CC.3c** (3 minutes)
- Snowball Toss **PK.OA.2** (3 minutes)

1 More Chant (3 minutes)

Note: This activity solidifies students' knowledge of the *1 more* pattern in the counting sequence.

Divide the class in half.

Side A: 1.
Side B: 1 more is…
Side A: 2.
Side B: 1 more is…
Side A: 3.
Side B: 1 more is…
Side A: 4.
Side B: 1 more is…
Side A: 5.

Consider choosing more advanced students to call out the numbers. Struggling students can say the *1 more is…* response; that way, they remember to say the same thing each time. If time permits, switch sides and repeat.

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Snowball Toss (3 minutes)

Materials: (S) 8½" × 11" scrap paper cut in quarters

Note: This activity prepares students to compare counting up and counting down, while also encouraging part-whole thinking.

Students make 3 snowballs each from a quarter of a sheet of scrap paper. They toss their "snowballs" into the center of the rug at the teacher's signal, one by one, pausing to answer, "How many have you thrown?" and "How many snowballs do you still have?" Once the snowballs are thrown, have them calmly get 3 snowballs and go back to their seats. Repeat the fun.

Application Problem (3 minutes)

Materials: (T) Anno's Counting Book by Mitsumasa Anno (S) 5 loose cubes of different colors

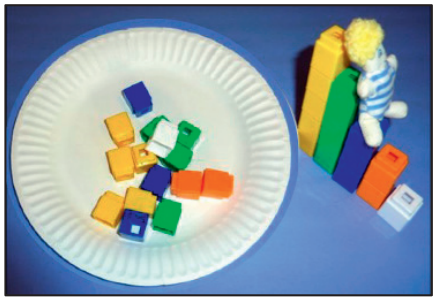
Open *Anno's Counting Book* to the page highlighting 1. Have volunteers show examples of 1 in the picture. Ask children to show 1 cube as shown in the book. Repeat with numbers 2–5. As children build their towers, encourage them to count, "1. 1 more is 2. 2. 1 more is 3…"

Note: Students review the pattern of 1 more in anticipation of learning the pattern of 1 less in the Concept Development.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 15 linking cubes preassembled in different colors for each number stair 5–1, 1 "friend" (e.g., small doll or Lego person)



Note: In this lesson, students build stairs for each number 5–1. Each stair should be a different color to help students distinguish each number.

1. Show students the doll and the stair of 5 cubes. Tell students, "Before, we made stairs for the bear to go up to his tree house. Now, let's make stairs, so our friend can go down from her classroom. She has played and worked hard at school and is ready to go home!"
2. Ask students to count the cubes. "1 cube, 2 cubes, … 5 cubes."
3. Tell students, "Yes, there are 5 cubes. The last number we said tells how many there are."
4. Comment and then ask an open question, "This tower of 5 cubes is so high! How can we help our friend go down? How can we make the next stair?" Guide students to see that they can make a stair with 4 cubes.

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5. Show the 4-cube tower, and place it next to the 5-cube tower in descending order. Tell students, "Now the stair is smaller! How did we make it smaller?" Guide students to say, "It's missing one," "It's without 1 cube," "It's **1 less**," or "It has 4 instead of 5." Then, have them count 4 cubes. Guide children to repeat, "5. **1 less** is 4."
6. Repeat the process until all stairs are assembled and arranged in descending order.
7. Have students count the number in each stair, "5 stairs, 4 stairs, 3 stairs, 2 stairs, 1 stair." Tell them, "You made a great staircase! Now, our friend can climb down and go home!"

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Some students may need to build two equal towers (of 5 cubes) alongside each other and then practice the action of removing one cube from one tower. The action helps children to see that it is made smaller by 1 fewer cube. Continue this pattern with two towers of 4, again removing 1 cube from one tower to make a tower of 3, and so on, creating the descending number stairs.

Part 2: Practice

Materials: (S) 15 linking cubes in different colors for each number stair 5–1, 1 "friend" (optional)

1. Send students to prepared tables, and tell them, "Build stairs like mine that your friend can climb down." As students build the staircase, encourage them to talk about what is happening to the size of each stair.
2. When they finish their staircases, encourage them to touch and count, "5, 4, 3, 2, 1."
3. If possible, take students to a staircase, and allow them to climb down and count. Or, give them a "friend," and encourage them to move the friend down the stairs as they count aloud.

Student Debrief (3 minutes)

Lesson Objective: Build descending number stairs at the concrete and pictorial levels.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

CENTER CONNECTION:

Encourage students to create a tree house for their friends in the block center, including a set of stairs. Have them practice counting forward to 5 as the friend walks up the stairs and backward from 5 as she walks down.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary (**1 less**).

- Last week, we used our stairs to show 1 more. What did we show with our stairs today? (1 less.)
- (Show descending number stairs.) Where did we start counting when our friend went down the stairs? Where did we stop?
- What did we do to make each stair smaller? How many cubes did we take away?

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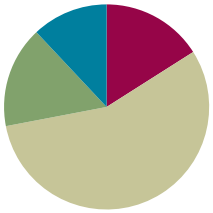
Lesson 34

Objective: Build descending number stairs at the concrete and pictorial levels.

Suggested Lesson Structure

Fluency Practice	(4 minutes)
Application Problem	(4 minutes)
Concept Development	(14 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (4 minutes)

- Snowball Toss **PK.OA.2** (4 minutes)

Snowball Toss (4 minutes)

Materials: (S) 8½" × 11" scrap paper cut in quarters

Note: This activity prepares students to compare counting up and counting down and encourages part-whole thinking.

Students make 5 snowballs each from a quarter of a sheet of scrap paper. Conduct the activity as described in Lesson 33, but this time students begin the countdown sequence at 5. Students toss their "snowballs" one by one into the center of the rug at their teacher's signal, pausing to answer, "How many did you throw?" and "How many are you still holding?" Once the snowballs are thrown, have them calmly go get 5 snowballs and repeat the fun.

Application Problem (4 minutes)

Materials: (T) Growing Up with Ella by Ella Jenkins (optional CD), apple tree, 3 green paper apples

Note: The familiar context of the apple tree and the repetition in the lyrics of the song facilitate the development of fluency in counting down. Learning the lyrics will allow students to devote more of their cognitive energy to the countdown sequence in the future.

Begin with 3 green apples on the tree. Teach students the lyrics, starting from 3. Invite students to act out the story as they sing, showing numbers on fingers while removing a paper apple from the tree.

Farmer Brown had 3 green apples hanging on the tree. (Twice.)

Then, he took 1 apple and he ate it greedily, leaving 2 green apples hanging on the tree.

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Farmer Brown had 2 green apples hanging on the tree. (Twice.)

Then, he took 1 apple and he ate it greedily, leaving 1 green apple hanging on the tree.

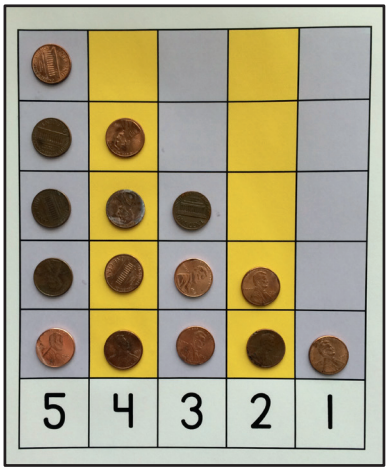
Farmer Brown had 1 green apple hanging on the tree. (Twice.)

Then, he took 1 apple and he ate it greedily, leaving no green apples hanging on the tree.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) 15 pennies, 5–1 staircase mat (Template)



1. Show students the 5–1 staircase mat. Point to the 5 column and ask, "How many pennies should we put here to fill this column?"
2. While filling in the column, guide students to count. "1 penny, 2 pennies, 3 pennies, 4 pennies, 5 pennies."
3. Prompt students to think about counting down from 5 to 1 by asking, "Remember the staircase we built for our friend to go downstairs? How can we fill in the pennies to make them look like the staircase for our friend to go down?"
5. Guide students to ideas such as, "Make 1 penny be missing," "Just have 4 pennies," "Make an empty space on top," "Make the next stair 1 less," etc. Count out 4 pennies in the 4 column as the class counts.

MP.7

6. Continue this process to number 1. Guide students to see that each column has *1 less* penny than the previous column by asking open questions such as, "What is happening to the numbers when we place 1 less penny in each line?"
7. Have students count the number of pennies in each column, "5 pennies, 4 pennies, …, 1 penny." Then, point to each number, and have students count, "5, 4, 3, 2, 1."

NOTES ON MULTIPLE MEANS FOR ACTION AND EXRESSION:

Offer students a choice to show their understanding of the relationship between the number of objects in the group and the numbers in a variety of ways. For example, students can show their understanding using their fingers, jumps, or hops as they count down from 5 to 1.

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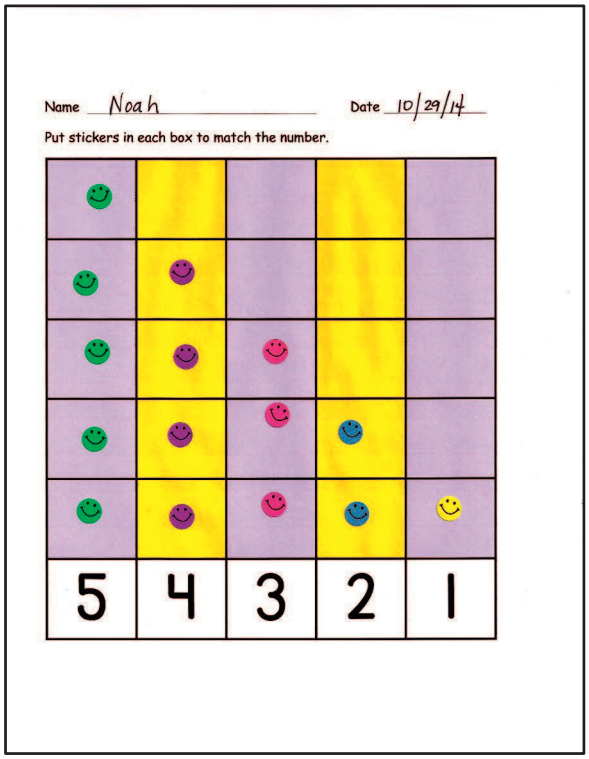
Part 2: Practice

Materials: (S) 15 stickers, Problem Set

Before sending children to prepared tables, model the activity.

1. Tell students, "Let's make a sticker sheet! Touch and count stickers to fill the number boxes. We're going to start at 5 and go down to 1."
2. Ask students how many stickers they should put in the first column.
3. Ask students how many stickers they should put in the next column. If they don't know, tell them to cover one of the 5 stickers or look at the numeral below.
4. Repeat this questioning to ensure that students understand how to fill in all columns.
5. Guide students to see and talk about the relationship between the size of the sticker groups and the numbers, noticing that the number of stickers in each column is getting smaller.
6. As students complete each column, have them go back to 5 and count, "5 stickers. 5 stickers, 4 stickers. 5 stickers, 4 stickers, 3 stickers," and so on. Then, invite them to count down without saying the unit, touching and saying the numbers: "5, 4, 3, 2, 1."



7. Early finishers can cut out the columns and put them in order from left to right from 1 to 5 and then from 5 to 1, counting aloud as they go.

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Student Debrief (3 minutes)

Lesson Objective: Build descending number stairs at the concrete and pictorial levels.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

CENTER CONNECTION:

Set up a separate center with different types of small counters for students who need extra practice. Have them use different counters to complete the 5–1 staircase mat template. Support them as they count backward.

- Look at your sticker sheet. How is it like the stairs we made yesterday?
- What happens when we move from 5 to 4 stickers? What is *1 less* than 4?
- Let's use our sticker sheets to count back from 5. (Point and count.) 5 stickers, 4 stickers, 3 stickers, 2 stickers, 1 sticker.

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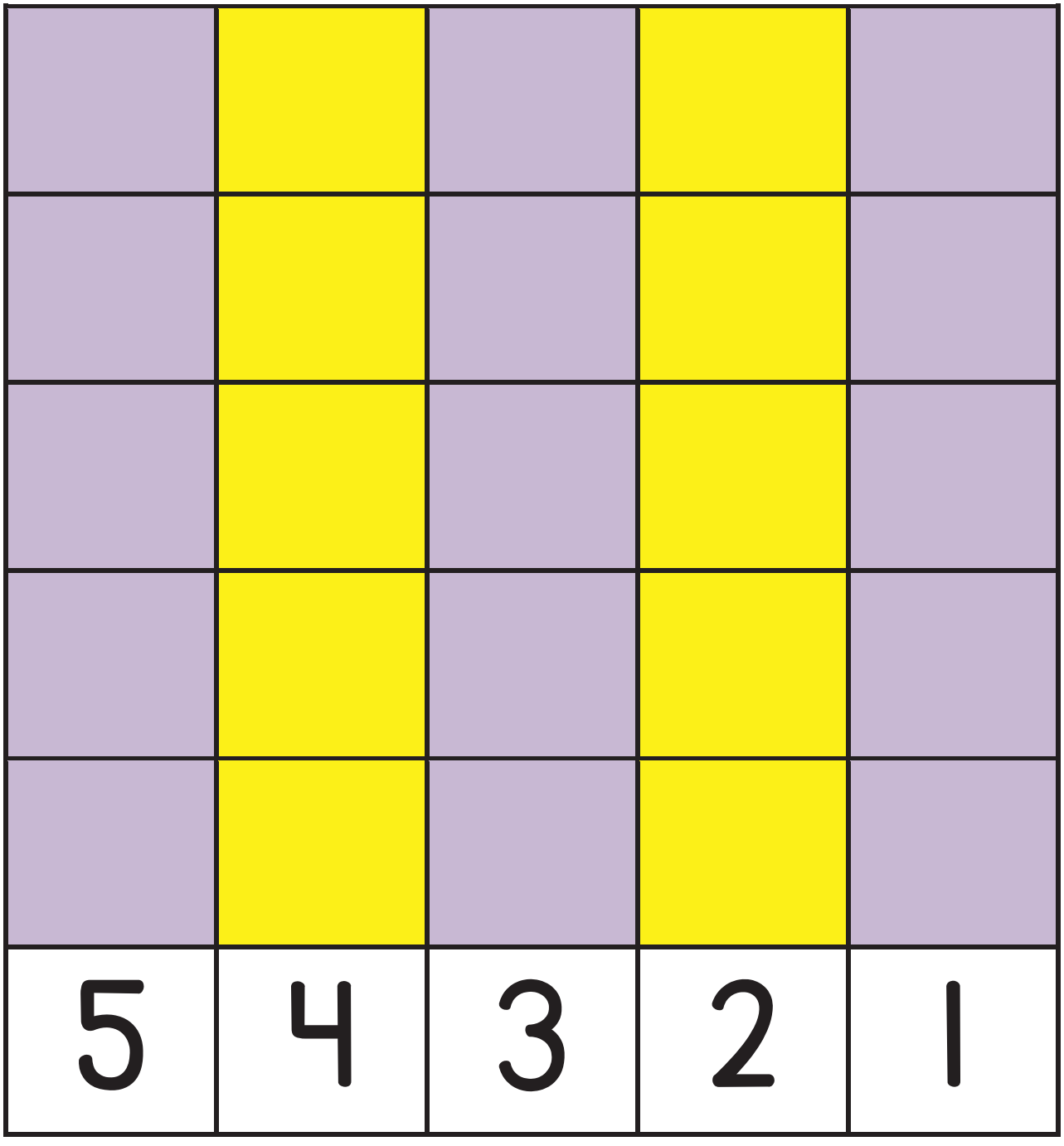
Name _____ Date _____

Put stickers in each box to match the number.



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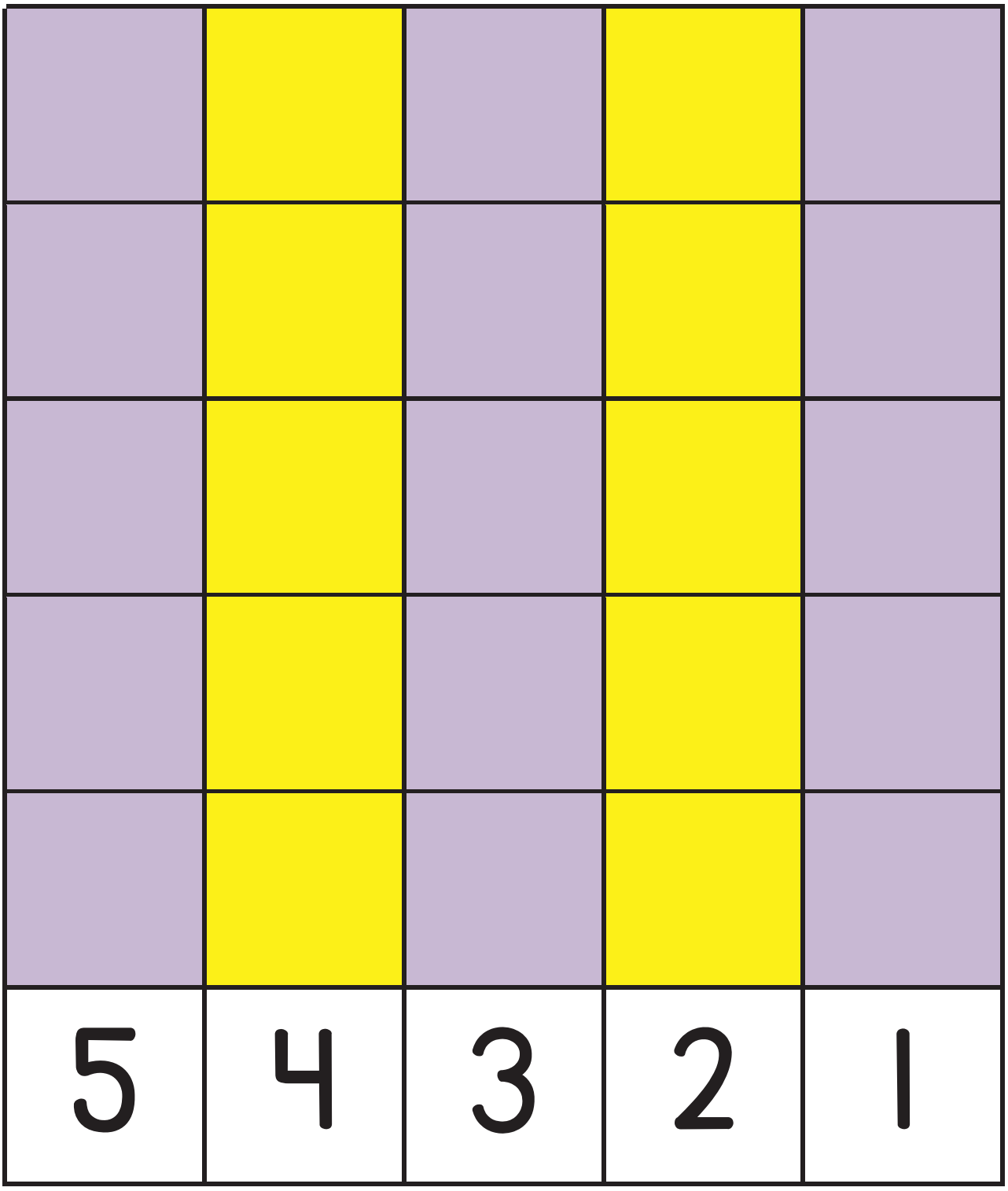

5–1 staircase mat

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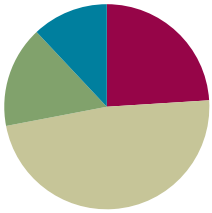
Lesson 35

Objective: Count 5, 4, 3, 2, 1 using a story and the fingers of the left hand.

Suggested Lesson Structure



Fluency Practice	(6 minutes)
Application Problem	(4 minutes)
Concept Development	(12 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**

Fluency Practice (6 minutes)

- Counting on Fingers **PK.CC.3ab** (3 minutes)
- Farmer Brown **PK.OA.2** (3 minutes)

Counting on Fingers (3 minutes)

Materials: (S) Stickers for each child's left pinky

Note: This variation of piano counting prepares students to count the Math Way freely, without the support of a template or reference point such as a table. Perspective is important when demonstrating how to count the Math Way (from left pinky to right pinky). When sitting beside students (both facing the same direction), model the count starting from the left pinky. When facing students, model the count starting from the right pinky, as children tend to mirror the teacher from this perspective. Place a sticker or stamp on each child's left pinky to help identify the starting point.

T: It's almost spring, and all the bears (wiggle fingers) are sleeping inside their dens (make two fists on a surface). Are all the bears inside the dens?

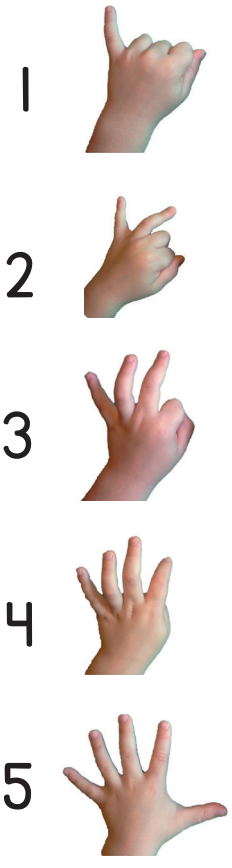
S: Yes!

T: When spring comes, the bears start to wake up and come out of their dens. (Show 1 bear emerging by extending your left pinky finger.) Show on your fingers how many came out.

S: 1 (show their left pinky finger extended).

T: Another bear comes out of the den. (Students extend their ring finger next to their pinky.) How many are out now?

S: 1, 2. 2.



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Repeat the story until 3 bears have come out of the cave. This could be a stopping point for today, or proceed to count to 5.

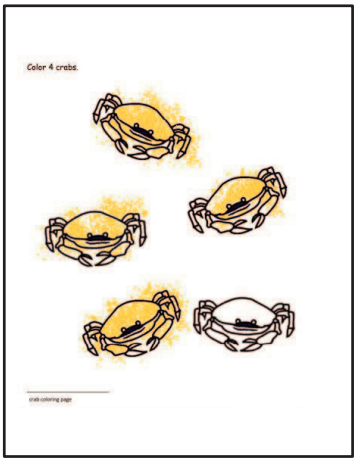
Farmer Brown (3 minutes)

Materials: (T) Growing Up with Ella by Ella Jenkins (optional CD), apple tree, 4 green paper apples

Note: The familiar context of an apple tree and the repetition in the lyrics facilitate the development of fluency in counting down. Knowing the lyrics better on this second day allows students to devote more of their cognitive energy to the countdown sequence.

Sing the song as before in Lesson 34, but now start from 4 green apples.

Application Problem (4 minutes)



Materials: (S) Crab coloring page (Template 1)

Tell students, "Five little crabs are swimming in the ocean. Four of them want to swim to the shore. Color 4 crabs."

Note: The link between drawing and math is important to instill in students from the beginning of their formal math learning. Students may not be ready to draw crabs independently, but by coloring in 4 of the 5 crabs, they practice the fine motor skills needed for future math drawings while counting out a group of 4. In the Student Debrief, students will notice that they colored 1 less than 5.

Concept Development (12 minutes)

Part 1: Concept Introduction

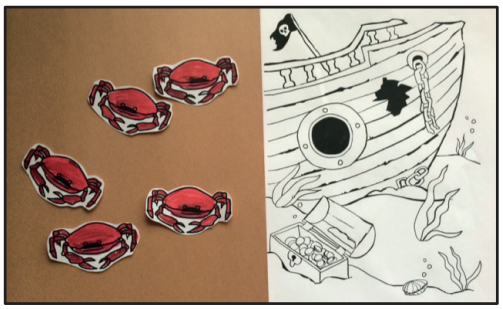
Materials: (T) "Five Little Crabs" (Template 2), 5 crabs (Template 1, cut out), yellow or brown piece of construction paper, blue washcloth, underwater mat (Lesson 15 Template 1)

Many songs can be used for this activity, such as "Five Little Ducks Went Out to Play," "Five Little Monkeys Jumping on the Bed," and "Five Green and Speckled Frogs."

1. Put 5 crabs on top of the sand (construction paper) alongside the underwater mat and blue washcloth.
2. Tell students, "Let's play Five Little Crabs! Let's count the crabs." Guide students in counting, "1 crab, 2 crabs, 3 crabs, 4 crabs, 5 crabs. There are 5 crabs."

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Send home copies of "Five Little Crabs" to provide students an opportunity to practice with their families. Frequent opportunities for practice promote effort and success.



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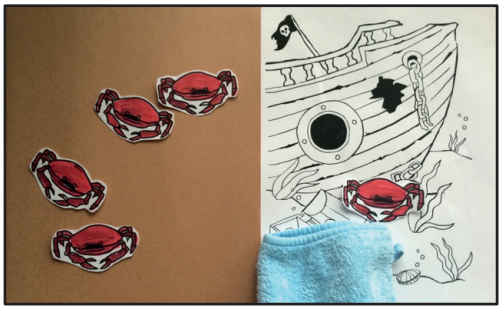

3. Act out the first line of the rhyme, using the washcloth as the wave to wash away 1 crab into the water. Have students count the crabs, "1 crab, 2 crabs, 3 crabs, 4 crabs. There are 4 crabs."
4. Act out the next line, and have students count, "1 crab, 2 crabs, 3 crabs. There are 3 crabs."
5. Repeat for the remaining verses. Show all 5 crabs in the water. Then, put 1 crab at a time back on the shore, and have students count down, "5, 4, 3, 2, 1."
6. Show 5 fingers lifted, and tell students, "Let's count down to 1 the Math Way. Your fingers are crabs. Show me the 5 crabs."
7. Read the rhyme again, and for each verse, guide students in folding down 1 finger, starting with the thumb, and ask, "How many are there now?"

Part 2: Practice

Materials: (S) Per pair: piece of yellow or brown construction paper (for the sand), 5 flat counters (crabs)

1. Tell students, "Now you get to play Five Little Crabs on your own!" Have partners count out 5 crabs on their mat and say, "1 crab, 2 crabs, 3 crabs, 4 crabs, 5 crabs. There are 5 crabs."
2. Tell students, "Partner A will be the wave and wash away 1 crab at a time. Partner B will touch and count how many crabs are on the sand."
3. Read the first verse as Partner A removes 1 crab and Partner B counts.
4. Have partners switch and continue the process to 1, repeating Steps 2–3.
5. Have the students see if they can count, "5, 4, 3, 2, 1" while moving the crabs but without saying the unit, *crab*. Next, see if they can simply say the count without the unit.
6. Partners switch roles.

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Student Debrief (3 minutes)

Lesson Objective: Count 5, 4, 3, 2, 1 using a story.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and explore new concepts.

- How did you count in the "Five Little Crabs" rhyme?
- What is different about counting up from 1 to 5 and counting back from 5 to 1? What is the same?
- (Show Template 1 with 4 crabs colored in.) How many total crabs are there? Did you color 1 more or 1 less than 5? What would it look like if you colored in 1 less than 4? 1 less than 3?

CENTER CONNECTION:

Use the dramatic play center as a place for students to dramatize "Five Little Crabs." Support students if they ask for help reciting the rhyme, but encourage them to tell the story in their own words if they can remember it. For some students, this kinesthetic practice will solidify the idea of counting backward and help them begin to visualize the pattern of 1 less.

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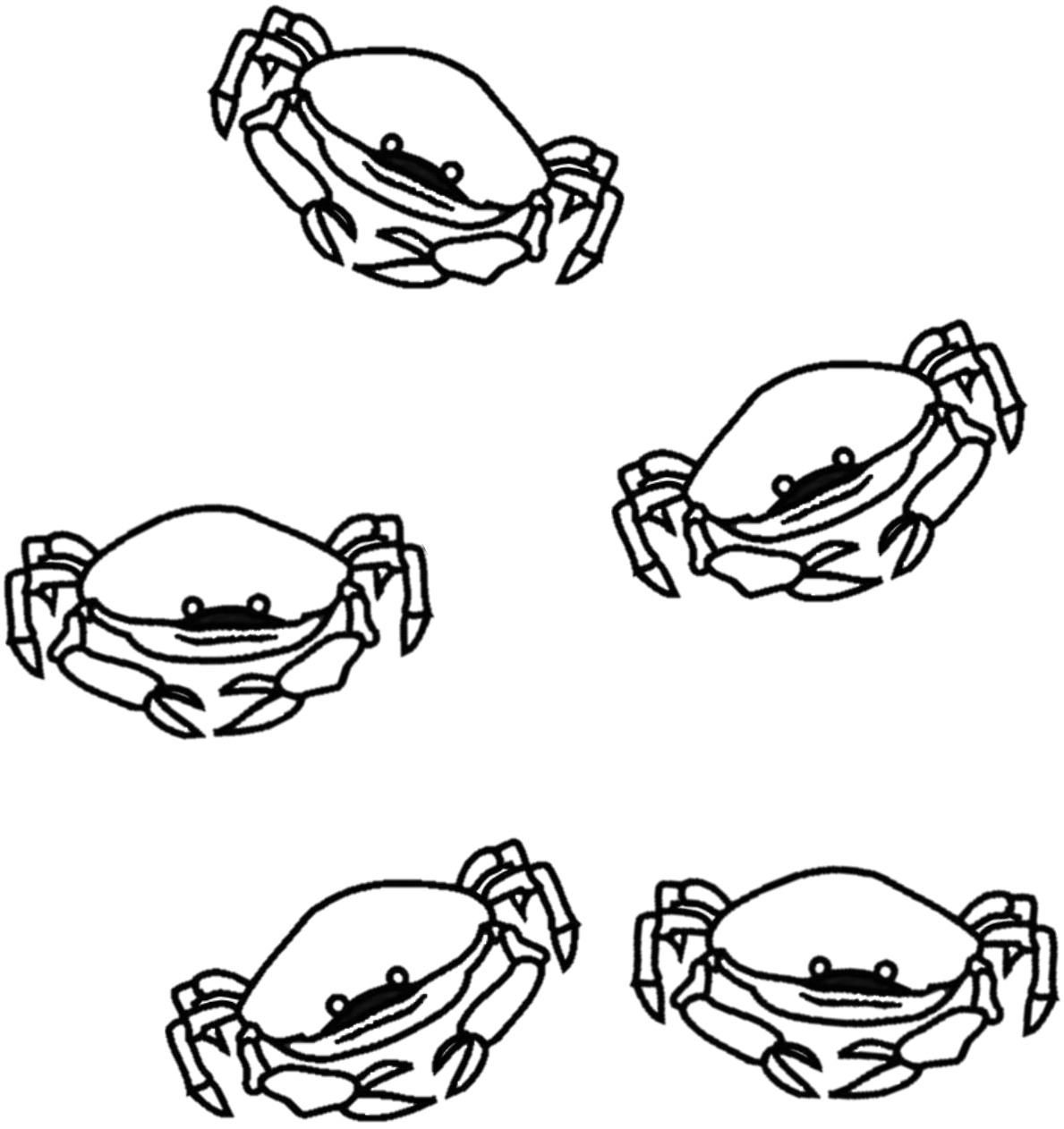
Color 4 crabs.



crab coloring page

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Five Little Crabs

5 little crabs, wiggling on the shore,

Swoosh went the waves, and then there were 4.

4 little crabs, happy as can be,

Swoosh went the waves, and then there were 3.

3 little crabs, their legs turning blue,

Swoosh went the waves, and then there were 2.

2 little crabs, having lots of fun,

Swoosh went the waves, and then there was 1.

1 little crab, looking all alone,

Swoosh went the waves, and carried him home.

"Five Little Crabs"

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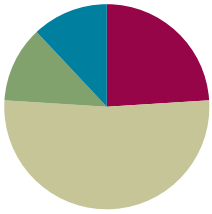
Lesson 36

Objective: Count 5, 4, 3, 2, 1 using a story and the fingers of the left hand.

Suggested Lesson Structure

Fluency Practice	(6 minutes)
Application Problem	(3 minutes)
Concept Development	(13 minutes)
Student Debrief	(3 minutes)
Total Time	**(25 minutes)**



Fluency Practice (6 minutes)

- Counting on Fingers **PK.CC.3ab** (3 minutes)
- Farmer Brown **PK.OA.2** (3 minutes)

Counting on Fingers (3 minutes)

Materials: (S) Stickers

Note: This variation prepares students to count the Math Way freely, without the support of a template or reference point such as a table. Place a sticker or stamp on students' left pinkies as needed.

As in Lesson 35, students start with bears in the cave (a fist), then lift each bear (finger) one by one, starting with the pinky. If students are ready for a challenge, have them count down as they close each finger one at a time to return to the original starting position.

Farmer Brown (3 minutes)

Materials: (T) Growing Up with Ella by Ella Jenkins (optional CD), apple tree, 5 green paper apples

Note: As students gaining proficiency with the song, be sure to point out how much stronger their voices are and how much more confidence they have as they count down the number of apples. Be specific with praise.

Sing the song as before in Lesson 34, again starting from 5 green apples.

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Application Problem (3 minutes)

Materials: (T) "Five Little Crabs" (Lesson 35 Template 2)

Ask 5 students to pretend to be crabs. Recite the rhyme while pretending to be the wave. In each verse, pull 1 little crab away from the group. Ask students to complete the sentence, "1 less than 5 is ___."

Note: For some students, this kinesthetic practice will solidify the idea of counting backward and help them begin to visualize the pattern of 1 less.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) "Five Little Fishies" (Template 1), underwater mat with fish (Template 2)

Many songs can be used for this activity, such as "Five Little Ducks Went Out to Play," "Five Little Monkeys Jumping on the Bed," and "Five Green and Speckled Frogs."

1. Show students the underwater template. Say, "Let's play Five Little Fishies! Count them with me."
2. Guide students in counting, "1 fish, 2 fish, 3 fish, 4 fish, 5 fish. There are 5 fish."
3. Read and act out the first verse by hiding 1 fish with a hand.
4. MP.5 Ask students, "How many fish are there now?" Guide them to say, "1, 2, 3, 4. There are 4 fish."
5. Repeat the process for the remaining verses. Then, show all 5 fish, and hide 1 fish at a time while students count down, "5, 4, 3, 2, 1."
6. Read the rhyme again, and for each verse ask, "How many are there now?"

Part 2: Practice

Materials: (S) Per pair: underwater mat with fish (Template 2)

1. Tell students, "Now, you get to play Five Little Fishies on your own!" Have partners count the 5 fish on their mat and say, "1 fish, 2 fish, 3 fish, 4 fish, 5 fish. There are 5 fish."
2. Tell students, "Partner A will be Mr. Shark and hide 1 fish at a time. Partner B will touch and count how many fish there are in the sea."
3. Read the first verse as Partner A hides 1 fish and Partner B counts.
4. Continue the process to 1, repeating step 3. Then, have the students count, "5, 4, 3, 2, 1."
5. Partners switch roles.

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Student Debrief (3 minutes)

Lesson Objective: Count 5, 4, 3, 2, 1 using a story.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- How was your counting today the same as your counting in the Five Little Crabs game? What happened when the wave or Mr. Shark came?
- Let me hear you count down from 5 to 1. (Show 5 objects, remove 1, remove another, etc. Have them try again as objects are removed faster. Then, see if they can do it without objects.)
- Are you getting better at counting down from 5 to 1? Why?
- If 4 little fishies are swimming, and there is 1 less after Mr. Shark swims by, how many little fishies are still swimming? Show me on your fingers.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Allow students to respond to Student Debrief questions in a variety of ways. Some students are more comfortable sharing in a small group or with a partner first before sharing with the whole class. More kinesthetic learners or students with expressive language delays may feel more comfortable answering questions using movements or gestures.

CENTER CONNECTION:

Use the rhyme as inspiration for the dramatic play center as described in the last lesson or in the art center. Invite children to illustrate a part of the story. Ask them to talk about their illustrations, using guiding questions about the number of fish if necessary, and write down responses to attach to the illustrations.

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Five Little Fishies

Five little fishies swimming in the sea (hold up 5 fingers),

Teasing Mr. Shark (make silly, teasing faces),

"You can't catch me, you can't catch me" (in a singsong, teasing tone).

Along comes Mr. Shark, as quiet as can be (quiet voice and slither hands)

And SNAPPED one fish right out of the sea! (Clap hands on "snapped.")

Repeat with

- Four little fishies…
- Three little fishies…
- Two little fishies…
- One little fishy…

"Five Little Fishies"

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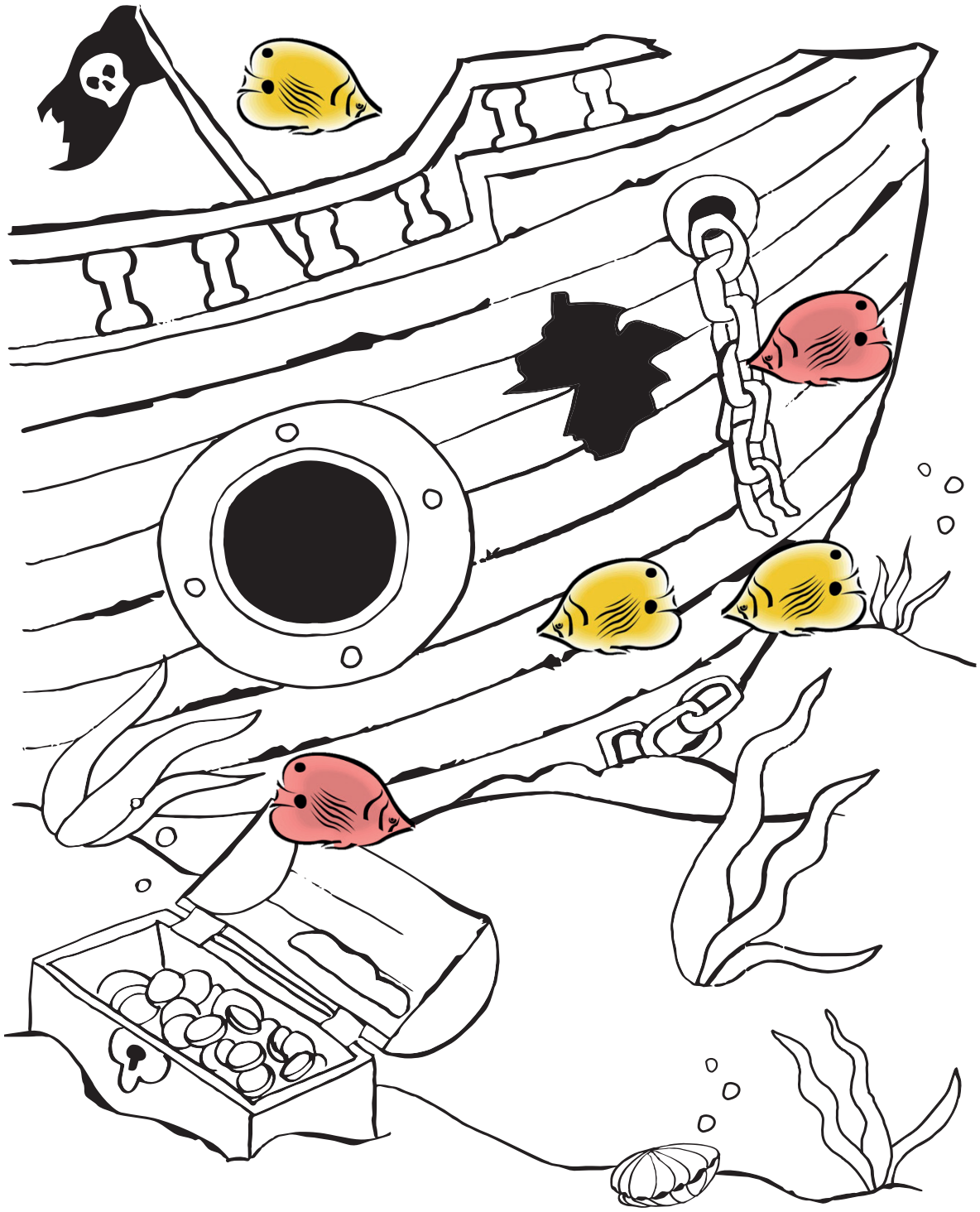

underwater mat with fish

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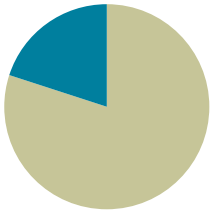
Lesson 37

Objective: Culminating task—sort objects by use and count each group; represent one group with a number tower and numeral.

Suggested Lesson Structure

Concept Development	(20 minutes)
Student Debrief	(5 minutes)
Total Time	**(25 minutes)**



Concept Development (20 minutes)

Exploratory Culminating Task

Materials: (S) 7 objects to be sorted by use (e.g., crayon, paintbrush, pencil, plastic fork, plastic spoon, small paper plate, napkin), paper bag, 10 linking cubes, numeral cards 1–5 (Lesson 12, Template 2)

The entire Concept Development period is devoted to the culminating task.

MP.3

1. Pair students. Give each student a mystery bag of 7 objects, and tell them to sort the objects into two groups by use.
2. As students finish sorting their objects, ask them to explain the groups to their partner.
3. Next, ask students to count how many things are in each of their groups, and then make a number tower using linking cubes to represent one of those groups, e.g., "My tower of 3 shows my things that are used to do art."
4. Tell students to make another tower that shows 1 more.
5. Ask students to match their towers to the correct numeral cards. Have partners touch and count to check that the towers and numeral cards are correctly matched.
6. Circulate as students work, using parallel talk to describe your observations, e.g., "Julio made a tower of 4 cubes to match the 4 things he uses together to eat. Then, he made a tower of 5 to show 1 more."
7. Have students switch bags and then repeat the task independently with their partner as often as possible within the time frame.

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Student Debrief (5 minutes)

Lesson Objective: Culminating task—sort objects by use and count each group; represent one group with a number tower and numeral.

Note: Before beginning the group discussion, have partners share their work with another pair, and have them share their sorts and two towers. Circulate and support them in identifying the tower with *1 more* and matching the tower with *1 less* to the group and to the numeral.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the lesson, listen for misconceptions or misunderstandings that can be addressed in the Student Debrief. Any combination of the questions below may be used to help students express ideas, make connections, and use math vocabulary.

- What did you do today? How was it like something you have done before?
- How did you sort your items? Did you have the same number in each group?
- How were your towers like the number stairs?

CENTER CONNECTION:

Culminating tasks provide an opportunity for observational assessment. Centers are also a good time to observe and record examples of children using math concepts. Try using sticky notes to quickly record spontaneous moments. A series of these observations provides a picture of the child's learning over time.

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Pre-Kindergarten End-of-Module 1 Assessment (Administer after Topic H)

Student Name _____

Topic E: *How Many* Questions with 4 or 5 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 5 linking cubes to be used as "birds" (the "birds" give the assessment a playful context), paper plate

	Date 1	Date 2	Date 3
Topic E			
Topic F			
Topic G			
Topic H			

1. Let's pretend that these linking cubes are birds. These birds (linking cubes) fly into your tree. (Assist in putting cubes on the child's left-hand fingers like little hats.) Touch and count each one. How many birds are in your tree?
2. A bird flies away. (Take 1 cube away). Touch and count the birds in your tree now.
3. (Put cube back on the student's finger.) Watch as all the birds fly to the ground. (Place the cubes in a circle around a plate.) Touch and count each one. How many birds are on the ground?

Note: If a child is unable to count 5 objects with one-to-one correspondence (one object paired with one number word), ask him to rote count to 5. Rote counting (**PK.CC.1**) is a precursor to counting with one-to-one correspondence (**PK.CC.3a**).

What did the student do?	What did the student say?
1. 2. 3.	

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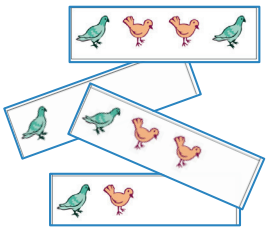
Topic F: Matching 1 Numeral with up to 5 Objects

Rubric Score: _____ Time Elapsed: _____

Materials: (S) Numerals 1–5, bird cards (cut apart), 7 linking cubes



1. (Put bird pictures in front of student. Show the numeral 4.) What number is this? Can you find the group of birds that matches this number?
2. (Repeat with 2.)
3. (Repeat with 3.)
4. (Repeat with 1.)
5. (Show the numeral 5.) What number is this? Pretend these cubes are birds. Can you make a group of birds to match this number?

What did the student do?	What did the student say?
1.	
2.	
3.	
4.	
5.	

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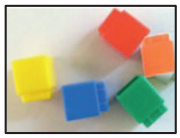
Topic G: *One More* with Numbers 1 to 5

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 5 linking cubes as imaginary birds



1. Let's pretend these cubes are birds. (Place 5 cubes in front of student.) Two birds want to play. Show me 2 birds.
2. One more bird wants to play. Show me 1 more. (Child puts another cube in the group.) How many birds are playing now? (Continue the pattern of 1 more to 5.)

What did the student do?	What did the student say?
1.	
2.	

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Topic H: Counting 5, 4, 3, 2, 1

Rubric Score: _____ Time Elapsed: _____

Materials: (S) 5 linking cubes as imaginary birds

1. Let's pretend these cubes are birds. (Place 5 cubes in front of student.) How many birds are there on the ground?
2. One bird flies into my tree. Show me. (After the student removes 1 cube from the group, place it on your left pinky.) How many birds are on the ground now? (Continue the pattern of 1 less to 1.)
3. Can you count from 5 to 1?

What did the student do?	What did the student say?
1.	
2.	
3.	

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End-of-Module Assessment Task Standards Addressed	Topics E–H

Know number names and the count sequence.

PK.CC.1 Count to 20.[1]

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

Count to tell the number of objects.[2]

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 of 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.

Understand simple patterns.

PK.OA.2 Duplicate and extend (e.g., What comes next?) simple patterns using concrete 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.

[1]PK.CC.1 is assessed directly if a child is not able to demonstrate mastery of PK.CC.3a, since rote counting is embedded in counting with one-to-one correspondence.
[2]Within 5.

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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 **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to count objects in any configuration, is unable to count from 1–5 with one-to-one correspondence (one object paired with one number word) and does not recognize that the last number counted tells how many. Note if child is able to rote count to 5.	The student shows evidence of beginning to understand how to count objects in some configurations but has difficulty understanding cardinality (e.g., repeats count, 1, 2, 3, 4, 5 when asked to say how many) or one-to-one correspondence (says more than one number for each object or skips an object).	The student is able to do two of the following: ▪ Arrange and count cubes in more than one configuration correctly to 5. ▪ Demonstrate understanding of cardinality. ▪ Count with one-to-one correspondence.	The student correctly: ▪ Arranges and counts cubes in all configurations correctly to 5. Begins to show conservation. ▪ Demonstrates understanding of cardinality (the last number said tells the number in a set). ▪ Counts with one-to-one correspondence (one object paired with one number word).
Topic F **PK.CC.2** **PK.CC.3ab** **PK.CC.4**	The student shows little evidence of understanding how to match a numeral to a quantity or is unable to make a group of a particular quantity from a numeral. The student is unable to explain the process.	The student shows evidence of beginning to understand how to match a numeral to a quantity and how to create a group of a particular quantity from a numeral.	The student demonstrates some understanding but inaccurately or inconsistently does the following: ▪ Matches the numerals 1–4 to the corresponding bird cards. ▪ Creates a group of 5 cubes to match the numeral.	The student correctly: ▪ Matches the numerals 1–4 to the corresponding bird cards. ▪ Creates a group of 5 cubes to match the numeral.

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A Progression Toward Mastery				
Topic G **PK.CC.3c** **PK.OA.2**	The student shows little evidence of understanding how to count 1 more within 5 and is almost non-responsive.	The student shows evidence of beginning to understand how to count 1 more within 5.	The student correctly counts 1 more within 5 after prompting or a clue to add an additional cube.	The student correctly counts 1 more within 5.
Topic H **PK.CC.3c** **PK.OA.2**	The student shows little evidence of understanding how to count from 5 to 1 and is almost non-responsive.	The student counts 5, 4, 3, 2, 1 with two or three errors.	The student counts 5, 4, 3, 2, 1 with materials and by rote with one error.	The student correctly counts 5, 4, 3, 2, 1 with materials and by rote.

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Class Record Sheet of Rubric Scores: End-of-Module 1 Assessment					
Student Names	Topic E: *How Many* Questions with 4 or 5 Objects	Topic F: Matching 1 Numeral with up to 5 Objects	Topic G: *One More* with Numbers 1 to 5	Topic H: Counting 5, 4, 3, 2, 1	Next Steps:

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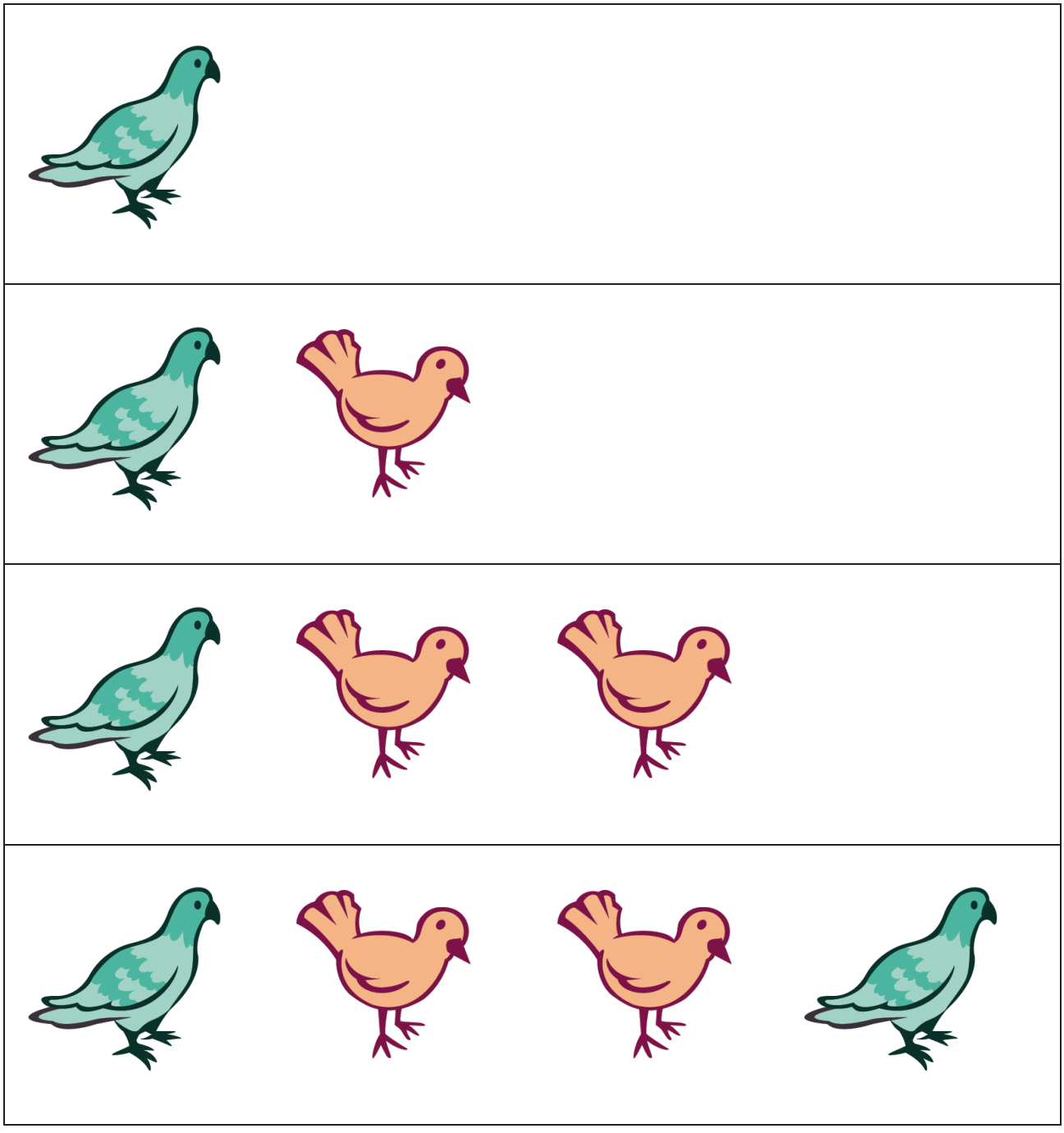
Module 1 Assessment Picture Cards



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