Kenmore-Town of Tonawanda UFSD

We educate, prepare, and inspire all students to achieve their highest potential

Grade K Module 1
Parent Handbook

## Numbers to 10

In Module 1, students begin to observe and analyze the world around them mathematically. They will count, order, and draw up to ten objects. They will eventually work toward an understanding that each successive number names a quantity that is 1 more, and that the number before is 1 less. This is just the beginning of an exciting mathematical year for kindergarten students!
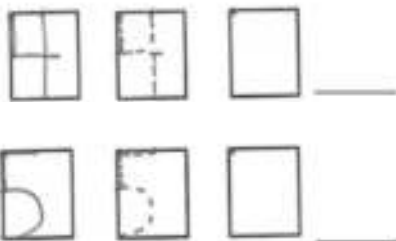
5-group cards

Students will practice writing numerals from 0 to 10 in this module, practicing in boxes like those above until they are comfortable using just the line.
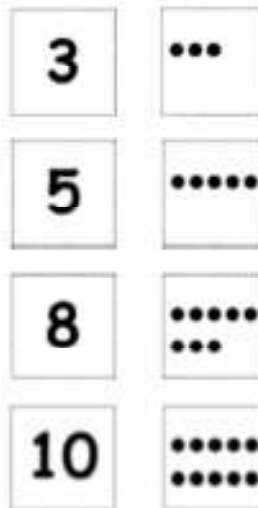
What Comes After this Module: Module 2 explores two- and three-dimensional shapes. Students will learn about flat and solid shapes, and begin to use position words when referring to shapes in their environment. They will also learn to distinguish between examples and non-examples of flat and solid shapes.

Terms, Phrases, and Strategies in this Module:

Exactly the same/not exactly the same/the same, but: ways to analyze objects to match or sort

Match: group items that are the same or that have the same given attribute

Sort: group objects according to a particular attribute

Answer "how many" when counting quantities or sets

Counting path: order of count, especially with large numbers

Number story: stories with add to or take from situations

Zero: understand the meaning of, write and recognize

Number sentence: 3 = 2 + 1

5-group: see box to the left

Rows/columns: linear configuration types

1 more/1 less: e.g., 4, 1 more is 5, and 4, 1 less is 3

Key Common Core Standards:

- *Know number names and the count sequence*
  - Write numbers from 0 to 10
- *Count to tell the number of objects*
  - Understand the relationship between numbers and quantities; connect counting to cardinality
- *Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from*
  - Decompose numbers less than or equal to 10 into pairs in more than one way
- *Classify objects and count the number of objects in each category*
  - Classify objects into given categories; count the numbers of objects in each category and sort the categories by count

+ How you can help at home:

- Have your student practice counting groups of objects in his/her environment

- In addition to counting, students can practice writing the numerals 0-10

- Practice decomposing numbers, e.g. talk about how 5 is made up of a group of 2 and a group of 3

Eureka Math, A Story of Units

Welcome to *A Story of Units*!

Each module's parent tip sheet will highlight a new strategy or math model your student will be working on.

This module will feature 5-groups, as 5 is an important building block for understanding numbers 6-10. Students learn what 5 looks like, and different ways to make and count to 5.

Left: 5-group cards with clearly marked groups of 5 in each row

Right: Counting on our hand: a natural group of 5!

Read on to learn a little bit about Eureka Math, the creators of *A Story of Units*:

Eureka Math is a complete, PreK-12 curriculum and professional development platform. It follows the focus and coherence of the Common Core State Standards and carefully sequences the progression of mathematical ideals into expertly crafted instructional modules.

This curriculum is distinguished not only by its adherence to the CCSS. It is also based on a theory of teaching math that is proven to work. That theory posits that mathematical knowledge is conveyed most effectively when it is taught in a sequence that follows the "story" of mathematics itself. This is why we call the elementary portion of *Eureka Math* "A Story of Units." The sequencing has been joined with methods of instruction that have been proven to work, in this nation and abroad. These methods drive student understanding beyond process, to deep mastery of mathematical concepts.

The goal of *Eureka Math* is to produce students who are not merely literate, but fluent, in mathematics. Your student has an exciting year of discovering the story of mathematics ahead!

Sample Problem from Module 1:
(Example taken from Module 1, Lesson 14)

How many apples are there all together?
_____

3 is the same as _____ and _____.

3 apples = _____ apples + _____ apple.

EUREKA
MATH

Numbers to 10

OVERVIEW

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

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

In Topics C, D, E, and F, students order, count (**K.CC.1**), and write (**K.CC.3**) up to ten objects to answer *how many* questions from linear, to array, to circular, and finally to scattered configurations wherein they must devise a path through the objects as they count. Students use their understanding of numbers and matching numbers with objects to answer *how many* questions about a variety of objects, pictures, and drawings (**K.CC.5**).
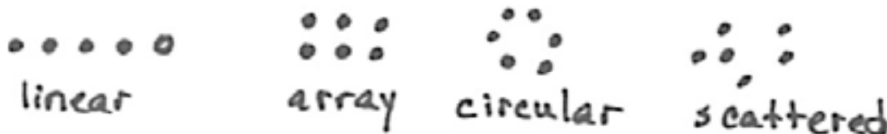
They learn that the last number name said tells the number of objects counted (**K.CC.4b**). Daily, they engage in mathematical dialogue. They might compare their seven objects to a friend's. For example, "My cotton balls are bigger than your cubes, but when we count them, we both have seven!"

Very basic expressions and equations are introduced early in order to ensure students' familiarity with numbers throughout the entire year so that they exit fluent in sums and differences to 5 (**K.OA.5**). Decomposition is modeled with small numbers with materials and drawings and as addition equations. Students see that both the expression 2 + 1 (Topic C) and the equation 3 = 2 + 1 (Topic D) describe a stick of three cubes decomposed into two parts

(**K.OA.3**). Emphasis is not placed on the expressions and equations or using them in isolation from the concrete and pictorial—they are simply included to show another representation of decompositions alongside counters and drawings.

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

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

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

Terminology

New or Recently Introduced Terms

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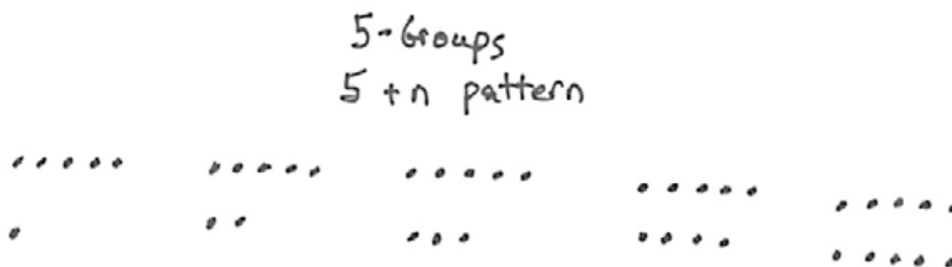
- Rows and columns
  (linear configuration types)
- Number path
- 1 more (e.g., 4. 1 more is 5.)
- 1 less (e.g., 4. 1 less is 3.)

Suggested Tools and Representations

- Rulers for use as a straightedge
- Five dot mat
- Five-frame and ten-frame cards
- Number path
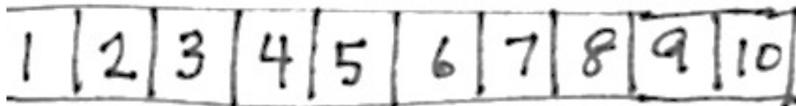
- Left hand mat

- Two hands mat
- 5-group cards
- Rekenrek (Slavonic abacus having beads with a color change at the five)

100-Bead Rekenrek
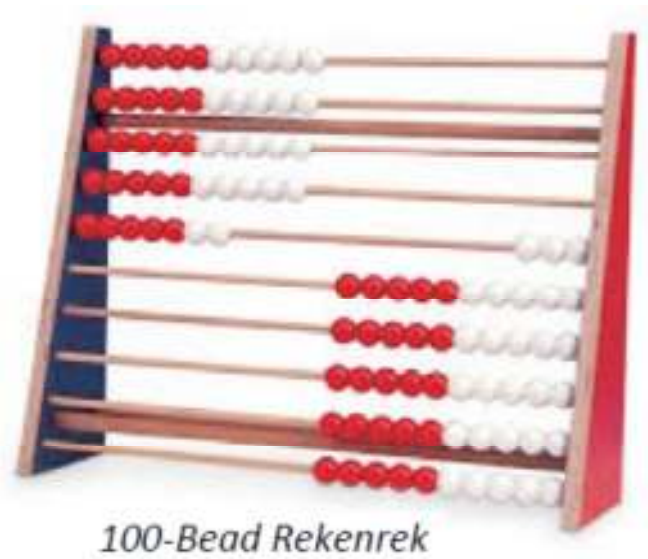
- Concrete materials in individual bags for counting and sorting (white beans painted red on one side, bags of twigs, dried leaves, dry pasta, pennies, plates, forks, spoons, cups, etc.)
- Commercial concrete materials (linking cubes in tens, non-linking cubes, square-inch tiles, etc.)

Attributes of Two Related Objects

Focus Standard:

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

Instructional Days Recommended: 3

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

*The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.

Lesson 1

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

Homework Key

Items colored the same: 2 birds; 2 trees; 2 plants

Work Samples

Color the things that are the same. Color them so that they look like each other.
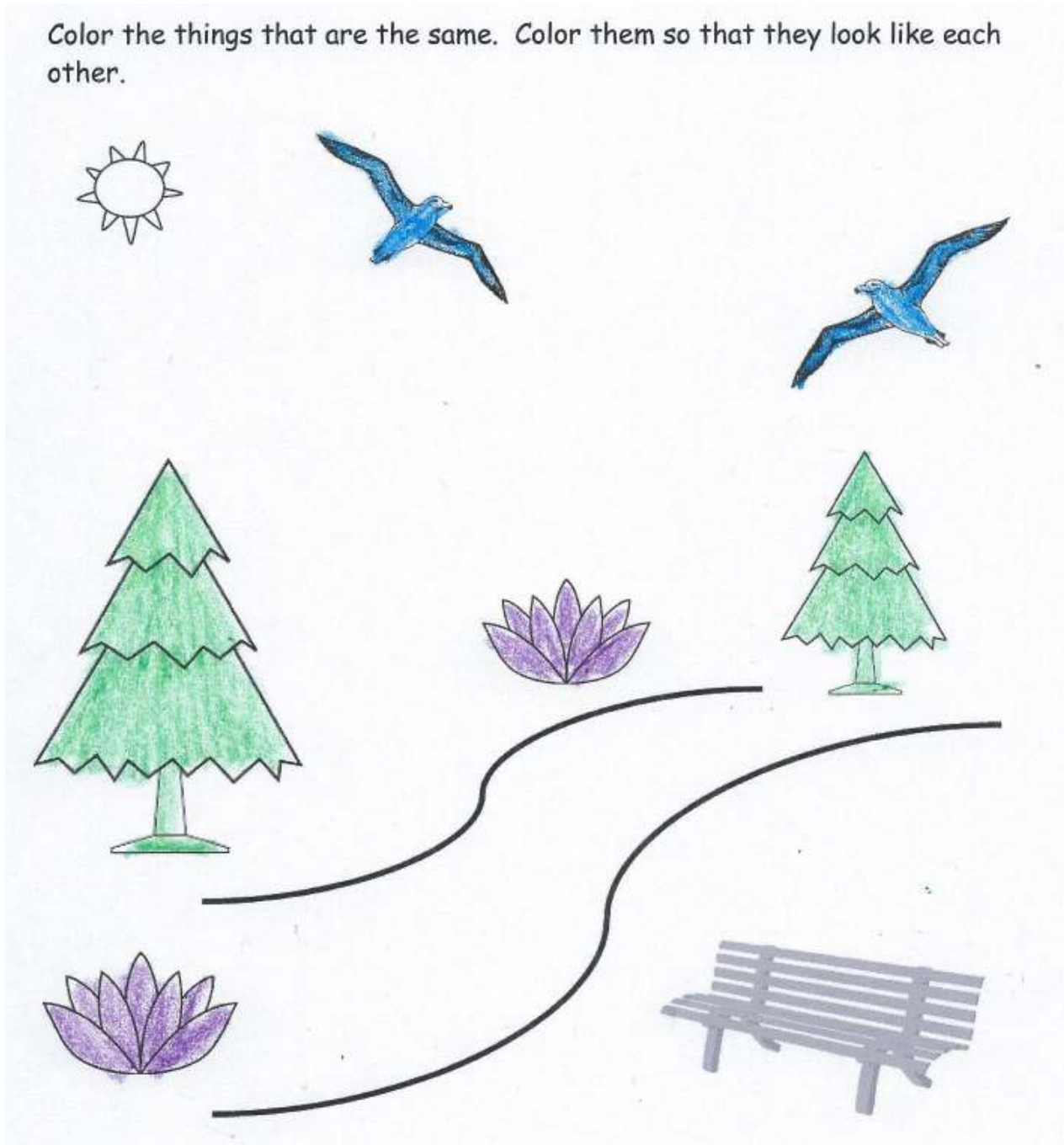
Lesson 2
Objective: Analyze to find two similar objects – *these are the same but…*

Homework Key

Line drawn from blemished pear to unblemished pear

Line drawn from three-quarter circle to rotated three-quarter circle

Line drawn from 5-point star to 6-point star

Work Samples

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

These are the same but one has dots and one doesn't.

use your words to describe.
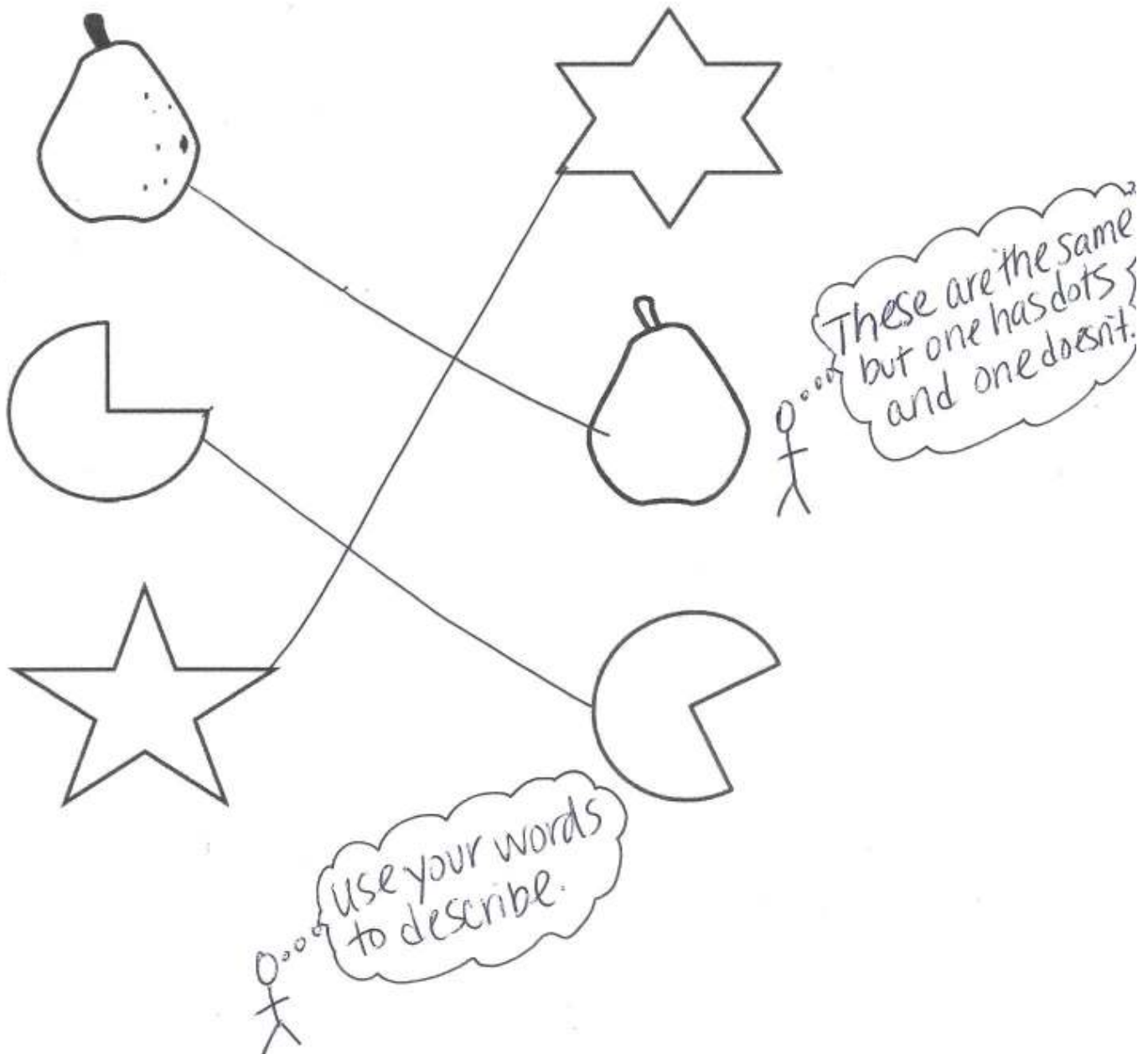
Lesson 3

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

Homework Key

Answers will vary.

Work Samples

Draw something that you would use with each. Tell why.

Oooo...Use can pour the juice into the cup.
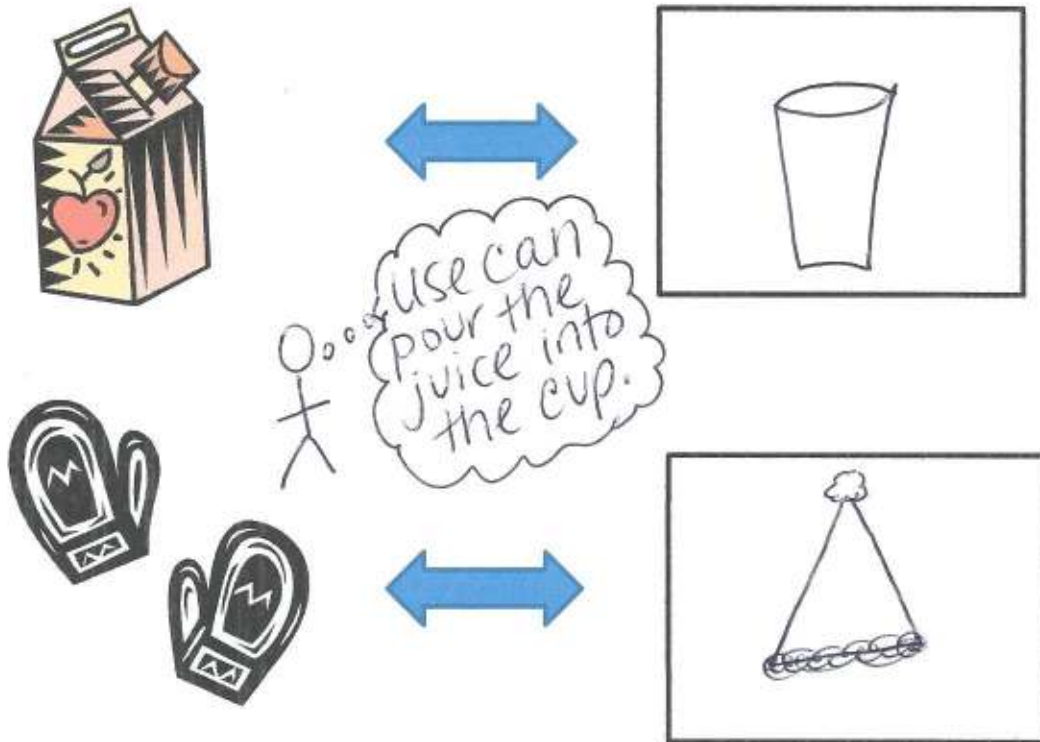
Classify to Make Categories and Count

Focus Standards:

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

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

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

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

Instructional Days Recommended: 3

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

The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.
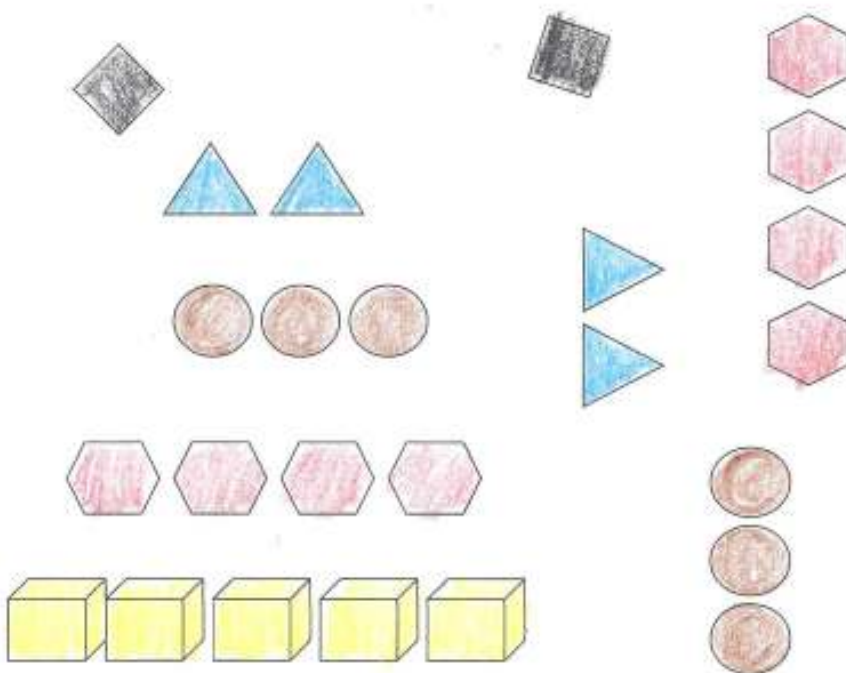
Lesson 4

Objective: Classify items into two pre-determined categories.

Homework Key

Toy bears placed in one group

Real bears placed in other group

Answers will vary

Work Samples

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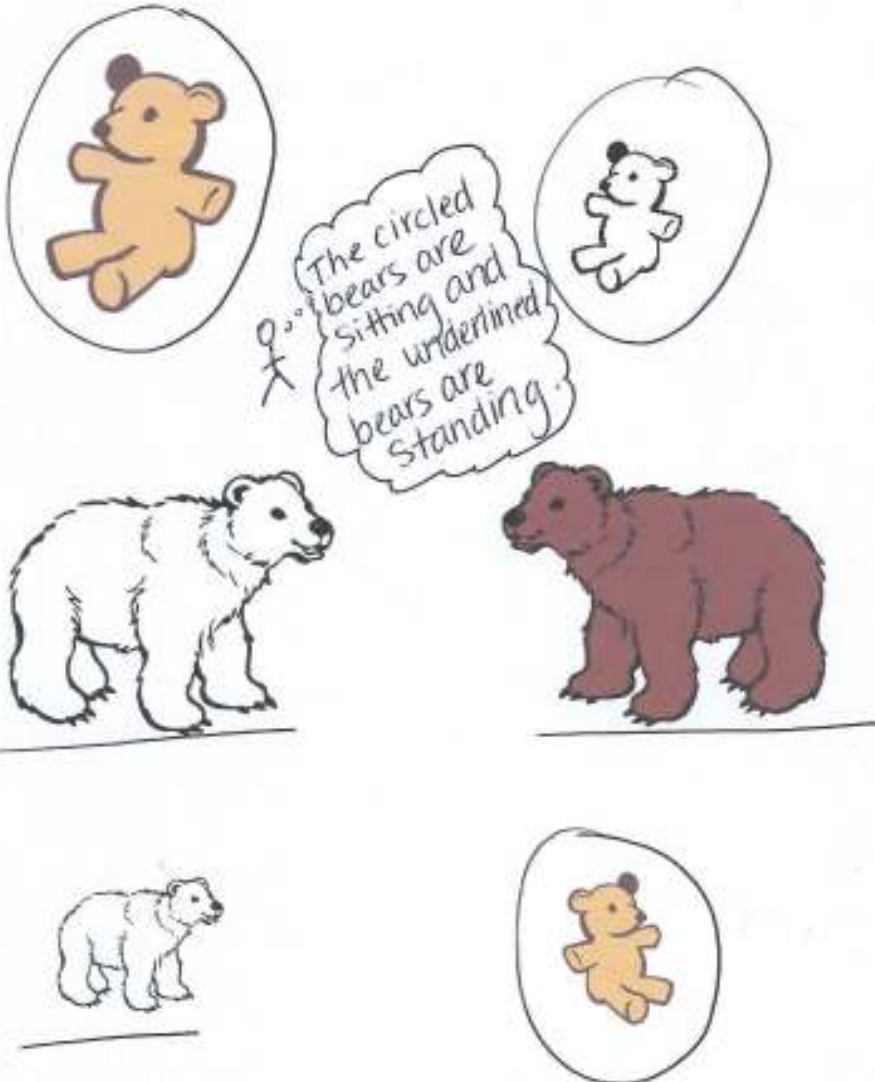
Lesson 5

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

Homework Key

Library book cart and librarian glued in Library row; 1

Scissors, school bus, colored pencils, book bag, and crayons glued in School row; 5

Pineapple, lemon, and shopping cart glued in Store row; 3

Work Samples

Library

Number: 1

School

Number: 5

Grocery Store

Number: 3

Lesson 6

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

Homework Key

2 treasure chest matched with 2 coins and 2 rings

3 treasure chest matched with 3 coins and 3 rings

4 treasure chest matched with 4 coins and 4 rings

Work Samples

Draw lines to put the treasures in the boxes.
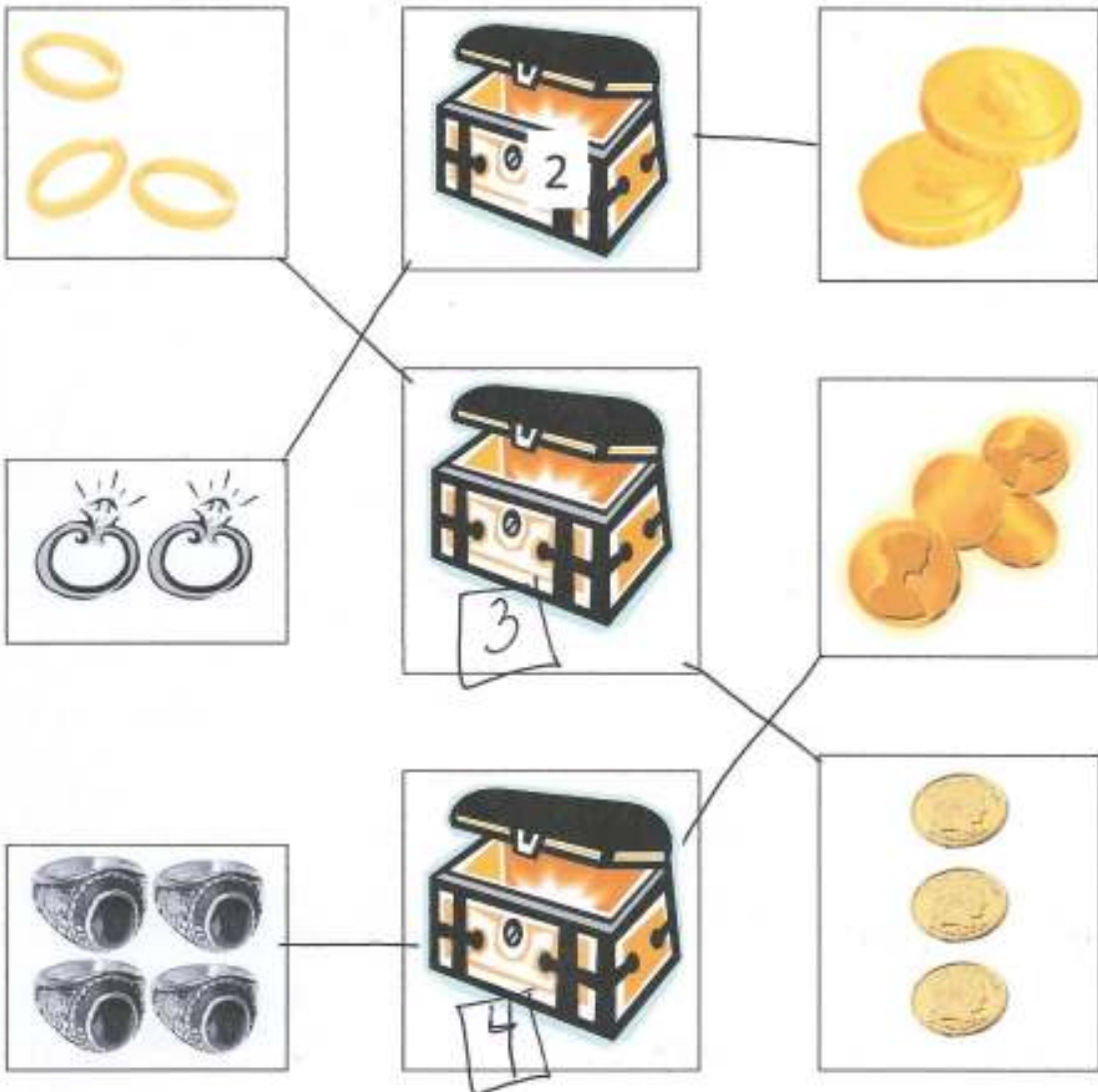
Numbers to 5 in Different Configurations Math Drawings, and Expressions

Focus Standards:

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

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

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

Instructional Days Recommended: 5

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

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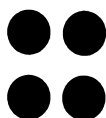
or

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

Lesson 7

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

Homework Key
1 diamond colored black
2 triangles colored blue
3 circles colored brown
4 hexagons colored red
5 cubes colored yellow
1 diamond colored black
2 triangles colored blue
4 hexagons colored red
3 circles colored brown

Work Samples

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

Lesson 8

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

Homework Key

4

4

5

5

4

5

5

Work Samples

Count. Circle the number that tells how many.

● ● ● ●	④ 5
(4 dots vertical)	④ 5
● ● ● ● ●	4 ⑤
(5 dots diagonal)	4 ⑤
(die showing 4)	④ 5
(dice showing 4 and 1)	4 ⑤
(die showing 5)	4 ⑤

Lesson 9

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

Homework Key

3; 2 circles colored
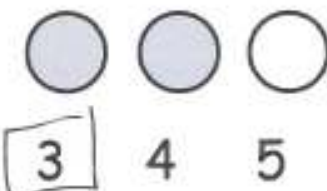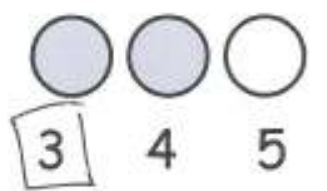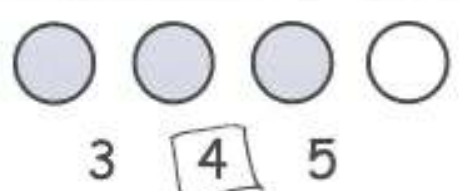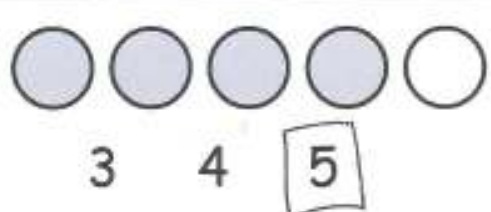
3; 2 circles colored

4; 3 circles colored

5; 4 circles colored

Work Samples

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

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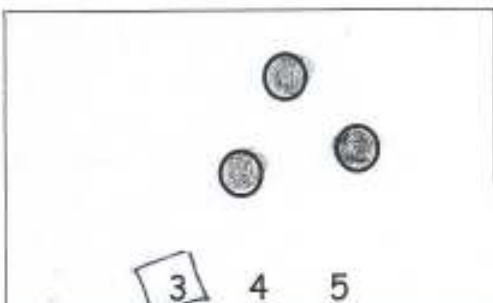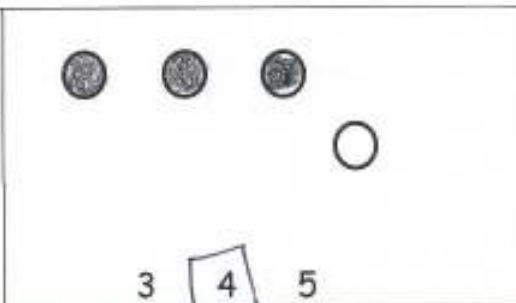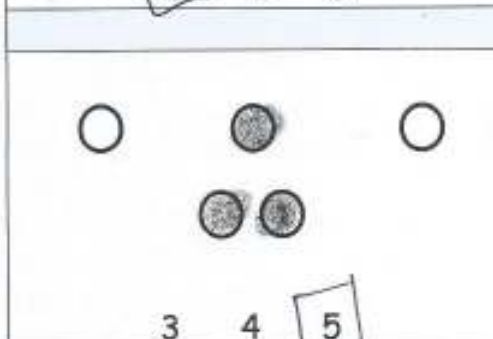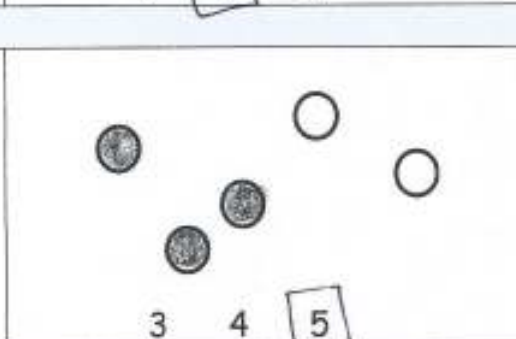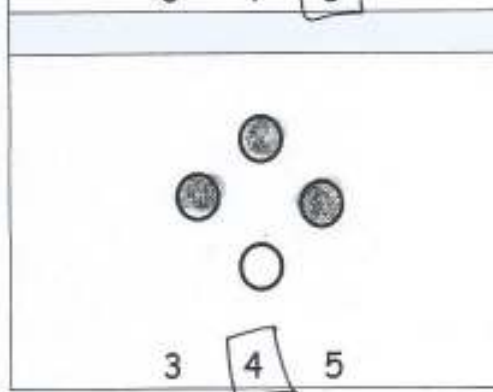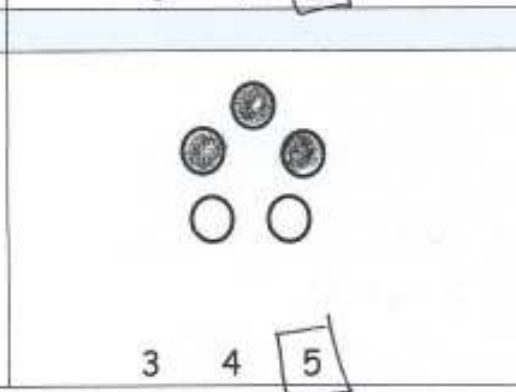
Objective: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners*.

Homework Key

3 boxed; 3 circles colored
4 boxed; 3 circles colored
5 boxed; 3 circles colored
5 boxed; 3 circles colored
4 boxed; 3 circles colored
5 boxed; 3 circles colored

Work Samples

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

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

Lesson 11

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

Homework Key

Answers may vary.

1 square colored one color; 4 squares colored a different color

5

Work Samples

Feed the puppies! Here are 3 bones. Draw lines to connect each bone with a puppy so that one puppy gets 2 bones, and the other puppy gets 1 bone.
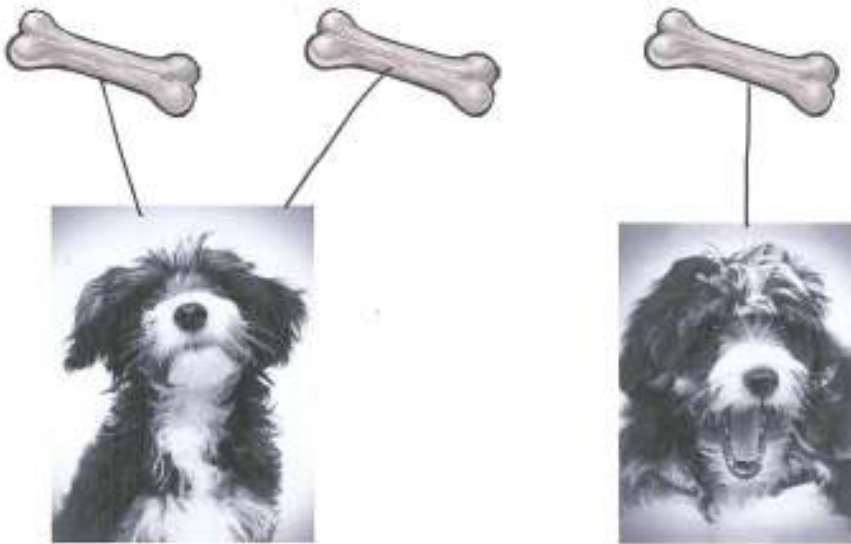
Color the shapes to show 1 + 4. Use your 2 favorite colors.
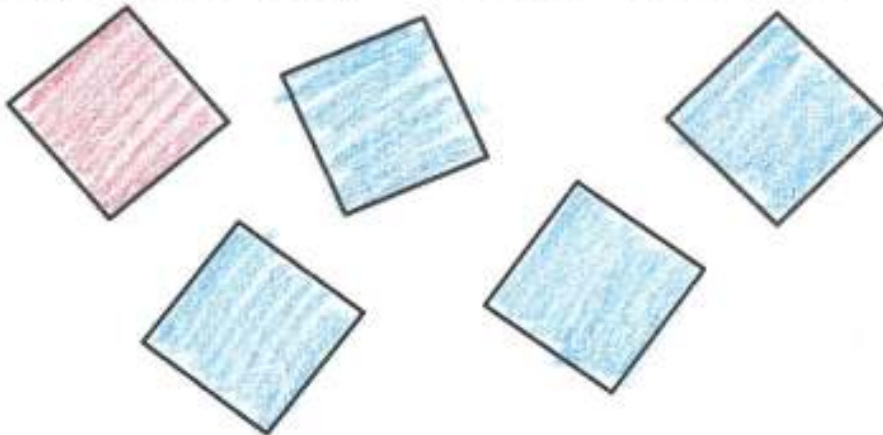
How many shapes are there? Circle the number.   1   2   3   4   ⑤

The Concept of Zero and Working with Numbers 0-5

Focus Standards:

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

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

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

Instructional Days Recommended: 5

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

Lesson 14 builds upon the decomposition work in Lesson 11 of Topic C. Students see both the expression 2 + 1 (Topic C) and the equation 3 = 2 + 1 (Topic D) as

describing a stick of three cubes decomposed into two parts (**K.OA.3**). The difference now is that the equal sign is shown. Take note that the sum is written first to demonstrate something whole being separated into two parts as opposed to two parts being joined to make a whole.

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

Lesson 12

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

Homework Key

Line drawn between 3 space ships and number 3
Line drawn between 1 space ship and number 1
Line drawn between 2 planets and number 2
Line drawn between empty rectangle and number 0
0
1

Work Samples

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

Write the numbers in the blanks.

0, 1, 2, 3

0, 1, 2, 3

Lesson 13

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

Homework Key

2 kitchen items drawn; 2
1 friend drawn; 1
3 toys drawn; 3
0
1, 0; 1, 2
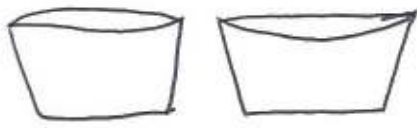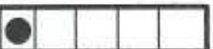
Work Samples

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

How many?

2

Draw ▣ (one) of your friends.

How many?

1

Draw ▣ (three) things you like to play.

How many?

3

How many pet monkeys do you have? 0

Write the missing numbers:

3, 2, __1__, __0__   0, __1__, __2__, 3

Lesson 14

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

Homework Key

1 shirt colored red, 2 shirts colored green; 3; 3, 2

2 balls colored yellow, 1 ball colored blue; 3; 3, 1

2 fruits drawn, 1 other fruit drawn; 3, 2, 1; 3, 2, 1

Work Samples

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

There are __3__ shirts. __3__ = 1 + __2__

Lesson 15

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

Homework Key

1, 3, 2

5, 4, 0

2, 4, 5

5, 4, 0

Work Samples

Count the shapes and write the numbers. Mark each shape as you count.
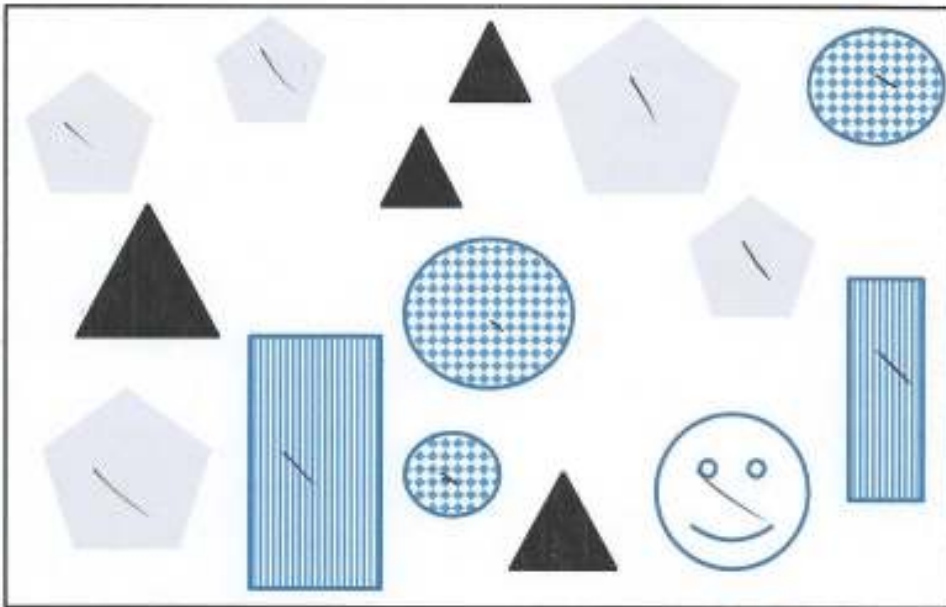
How many? ☺ _1_   ⬤ _3_   ▌ _2_

_5_   ▲ _4_   ◇ _0_

Write the missing numbers:

0, 1, _2_, 3, _4_, _5_

_5_, _4_, 3, 2, 1, _0_

Lesson 16

Objective: Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations.

Homework Key

3, 5; 4, 1
4, 0; 0, 3
3 red fish drawn, 1 green fish drawn
4
4; 3; 1
2 happy faces drawn, 3 sad faces drawn
5
5
2, 3

Work Samples

Write the missing numbers:

1, 2, _3_, 4, _5_   5, _4_, 3, 2, _1_

_4_, 3, 2, 1, _0_   _0_, 1, 2, _3_, 4

Draw 3 red fish and 1 green fish.

How many fish are there in all? There are _4_ fish.

3 fish and 1 fish make _4_ fish. 4 is the same as _3_ and _1_.

Working with Numbers 6-8 in Different Configurations

Focus Standards:

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

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

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

Instructional Days Recommended: 6

In Topic E, students engage in counting numbers above 5, namely 6, 7, and 8, in varied configurations. The students use their growing skill and knowledge of counting up to 5 to reason about larger numbers in the more difficult linear, array, circular, and scattered configurations.
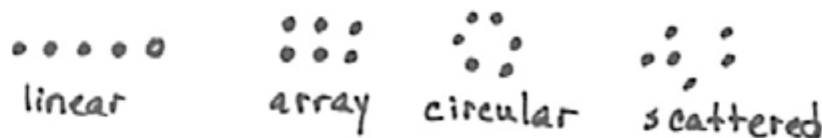
As in previous topics, students will count objects and match their count with a digit card to reinforce that the last number said when counting tells the number of objects. Lesson 18 extends the counting of larger numbers by having students count 6 out of a larger set and order numbers 1–6 based on their knowledge that each number represents a quantity of objects. This calls their attention to the concepts of part and whole. Their 6 beans are within the larger amount. Students might say they disappeared or are hiding. They are there, but no longer a distinct set.

Lesson 19 looks at numbers 5–7. Students count on their fingers from 1 to 7 and connect to 5-group images (for example, five fingers on one hand). "7 is 5 and 2. Here it is on my fingers." Reasoning about numbers 6–8 highlights the importance of the 5-unit. Lesson 20 explores the number 7. Students reason about strategies to count 7 objects in circular and scattered configurations. Partners might look at each other's 7 objects, one in array formation and the other in scattered formation, and discuss similarities and differences between their sets.

This concept is continued in Lesson 21 with the number 8. Students also consider the size of the objects being counted by comparing their 8 objects to a friend's. For example, "My cotton balls are bigger than your cubes, but when we count them, we both have eight!" The last lesson in this topic asks students to arrange and strategize how to count eight beans in a circular (around a cup) and scattered configuration. They also write the numeral 8 and find a path through the scatter set, comparing their paths with a partner.

Lesson 17

Objective: Count 4–6 objects in vertical and horizontal linear configurations and array configurations. Match 6 objects to the numeral 6.

Homework Key

4 trees colored

5 hexagons colored

6 bears colored

Line drawn from 6 dots to 6 crosses

Line drawn from 5 dots to 5 triangles

Line drawn from 4 dots to 4 faces

Work Samples

Color 4.

Color 5.
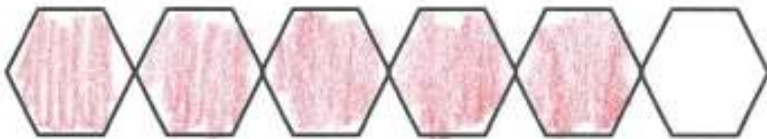
Color 6.

Connect the boxes with the same number.
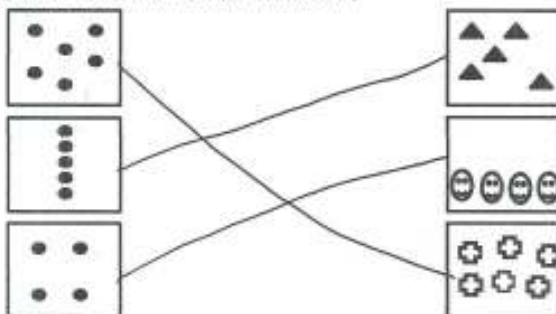
Lesson 18

Objective: Count 4–6 objects in circular and scattered configurations. Count 6 items out of a larger set. Write numerals 1–6 in order.

Homework Key

6 circles colored; 5 stars colored

6 balloons circled

Work Samples

Color 6
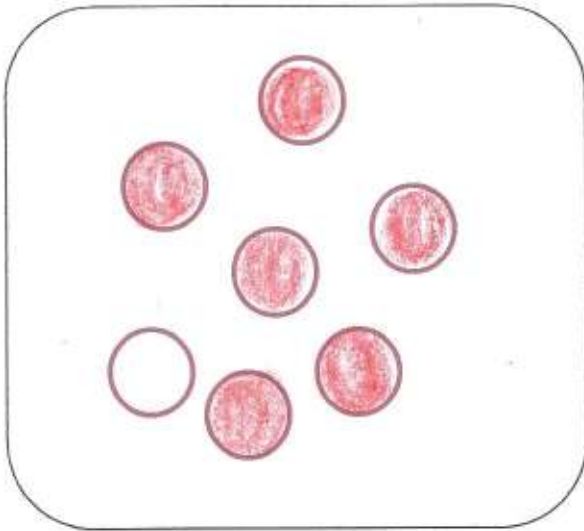
Color 5
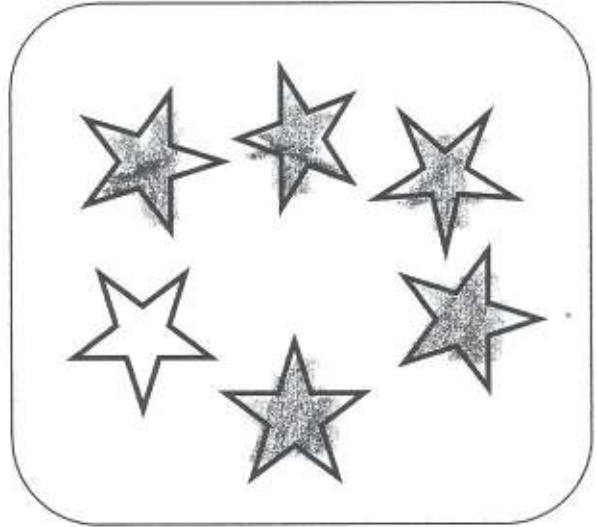
Circle 6 balloons.

Lesson 19

Objective: Count 5–7 linking cubes in linear configurations. Match with numeral 7. Count on fingers from 1 to 7, and connect to 5-group images.

Homework Key

Line drawn to 3

Line drawn to 6

Line drawn to 4

Line drawn to 5

Line drawn to 7

4, 6

5, 3

2, 4, 6, 7

6, 4, 3

Work Samples

Draw a line from the numeral to the 5-group cards it matches.

Lesson 20

Objective: Reason about sets of 7 varied objects in circular and scattered configurations. Find a path through the scattered configuration. Write numeral 7. Ask, "How is your seven different than mine?"

Homework Key

4

5

7

6

7; line drawn to each sun to show counted path

7; line drawn to each circle to show counted path

Work Samples

How many? Write the number in the box.
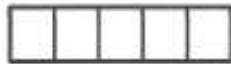
4

5
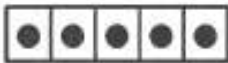
7
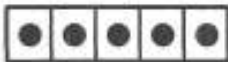
6

5 groups help children recognize 5 within a number and how many more to make 5.

Lesson 21

Objective: Compare counts of 8. Match with numeral 8.

Homework Key

4 squares colored blue; 4 squares colored yellow; 8

4 squares colored green; 4 squares colored brown; 8

4

6

7

8

5

Work Samples

Color 4 squares blue. Color 4 squares yellow.

Count how many squares. Write the number in the box.
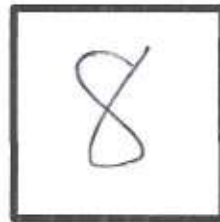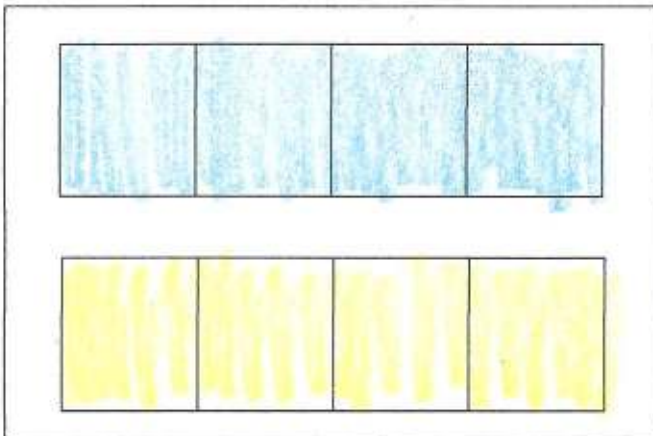
Lesson 22

Objective: Arrange and strategize to count 8 beans in circular (around a cup) and scattered configurations. Write numeral 8. Find a path through the scattered set, and compare paths with a partner.

Homework Key

8 beads drawn

8 triangles colored; line drawn to show path

8

5

6

5

4

Work Samples

Draw 8 beads around the circle.
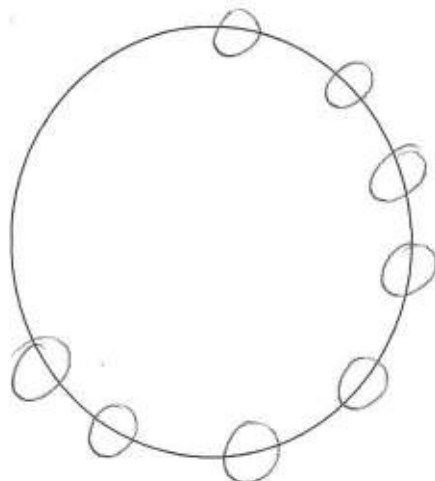
Working with Numbers 9-10 in Different Configurations

Focus Standards:

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

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

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

Instructional Days Recommended: 6

In this module, counting becomes more complex as the numbers get bigger and students learn to be flexible with numbers to 10. Students represent, count, and compare different objects in different configurations.

Lesson 23 begins with organizing and counting 9 varied geometric objects. The importance of the unit of five is stressed once again. Asking the students to place 5 of the 9 pattern blocks on a 5-group mat helps them to utilize the five-unit as they count.
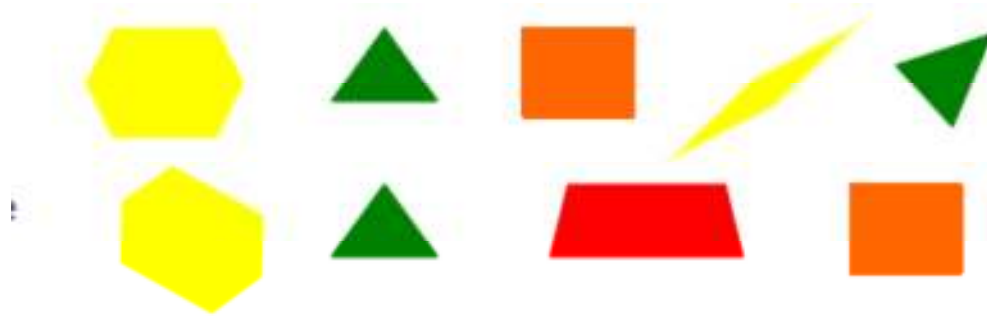
Lesson 24 continues with writing the numeral 9 and counting 9 objects in a circular and scattered configuration printed on paper. Students strategize about how to represent a path through the scattered configuration: "I numbered my objects when I counted so I wouldn't count the same object twice."

The next three lessons focus on these same concepts with the number 10. Students write the numeral 10 and count 10 objects in all configurations, using the 5-group mat to highlight the importance of the five-unit. Once all the numbers have been introduced and explored, the focus becomes developing a profound understanding of the numbers to 10.

Armed with this profound understanding of the numbers to 10, the students are ready to act out *result unknown* story problems without equations in Lesson 28 (**K.OA.1**). For example, "Five children were sitting at their desks. Four children come in from outside and sit down at their desks, too. How many children are in the classroom?" At this point students are problem solving by using objects, drawings, or acting only.

Lesson 23

Objective: Organize and count 9 varied geometric objects in linear and array (3 threes) configurations. Place objects on 5-group mat. Match with numeral 9.

Homework Key

9 shapes colored

9 shapes colored

9 shapes drawn

9 shapes drawn a different way

Work Samples

Color 9 shapes.
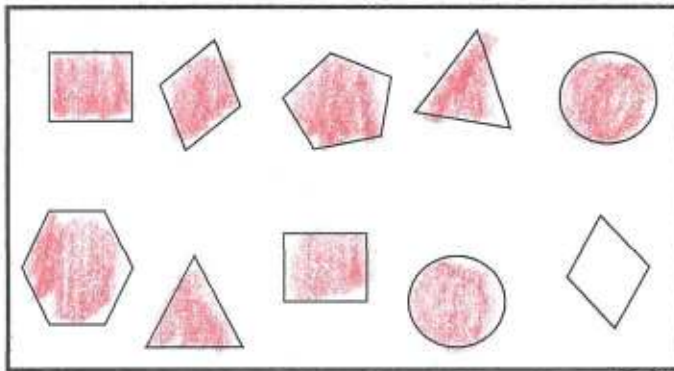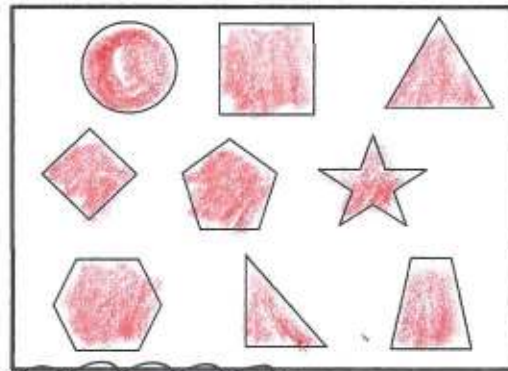
Color 9 shapes.

use the diagrams above to help.

Draw 9 shapes.

Draw 9 shapes a different way.

Lesson 24

Objective: Strategize to count 9 objects in circular (around a paper plate) and scattered configurations printed on paper. Write numeral 9. Represent a path through the scatter count with a pencil. Number each object.

Homework Key

Circles numbered 1–9
9 circles colored
9 beads drawn
9

Work Samples

Number the circles from 1 to 9.
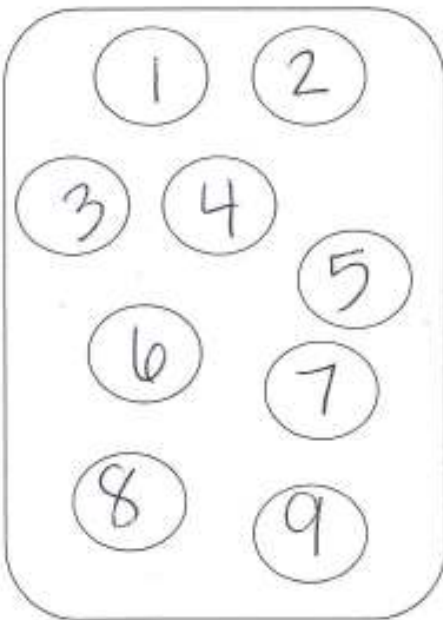
Color 9 circles.
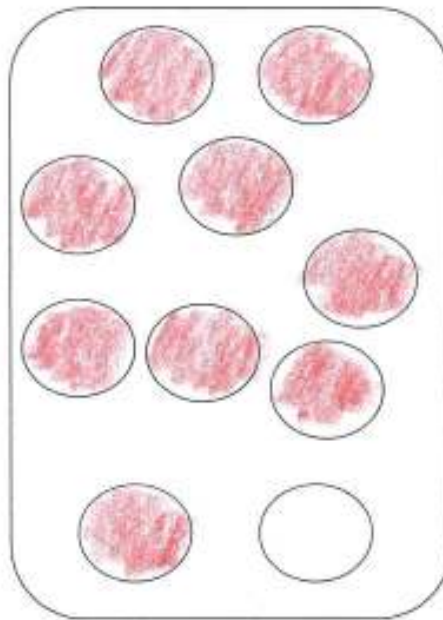
Draw 9 beads on the bracelet.
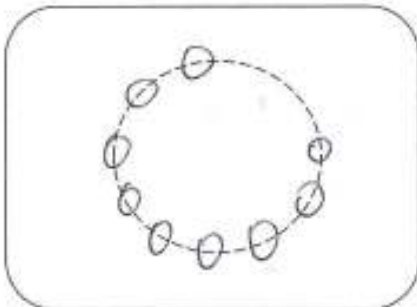
Count. Write the number in the box.
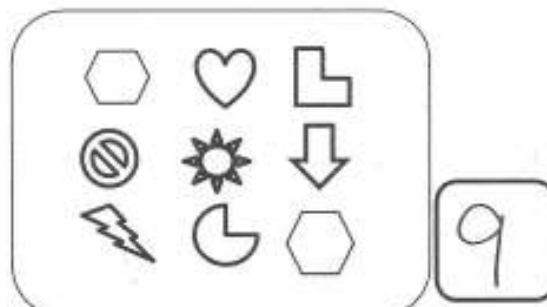
Lesson 25-26

Objective: Count 10 objects in linear and array configurations (2 fives). Match with numeral 10. Place on the 5-group mat. Dialogue about 9 and 10. Write numeral 10.

Homework Key

9 squares colored; 1 square colored a different color

9 squares colored; 1 square colored a different color

5 squares colored; 5 squares colored a different color

10 circles drawn in a line; 5 circles colored red; 5 circles colored blue

5 circles drawn under the row of circles; 5 circles colored red; 5 circles colored blue

Work Samples

Color 9 squares. Color 1 more square a different color.

Color 9 squares. Color 1 more square a different color.
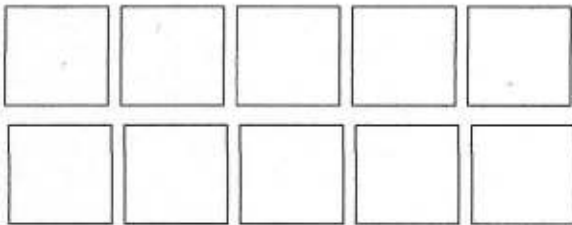
Color 5 squares. Color 5 more squares a different color.
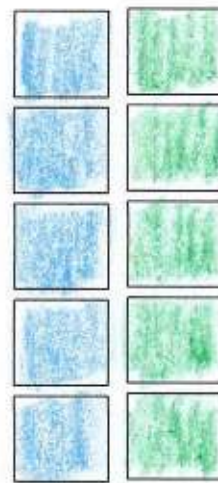
Lesson 26

Homework Key

5 triangles drawn in a row; 5 more triangles drawn in a row below; 10
10
7

Work Samples

Draw 5 triangles in a row. Draw another 5 triangles in a row under them.
How many triangles did you draw?
Write the number in the box.

10
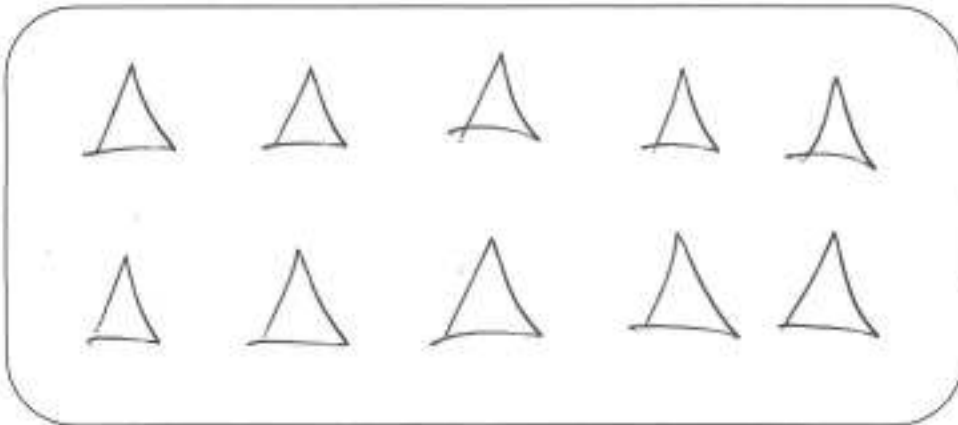
Write how many in the box.

10

Write how many in the box.
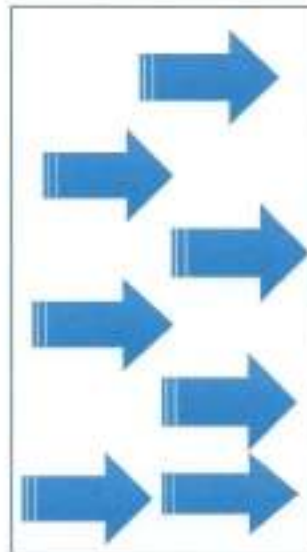
7

Lesson 27

Objective: Count 10 objects, and move between all configurations.

Homework Key

5 clouds drawn

7 smiley faces drawn

Work Samples

Draw enough ☁ to make 10.
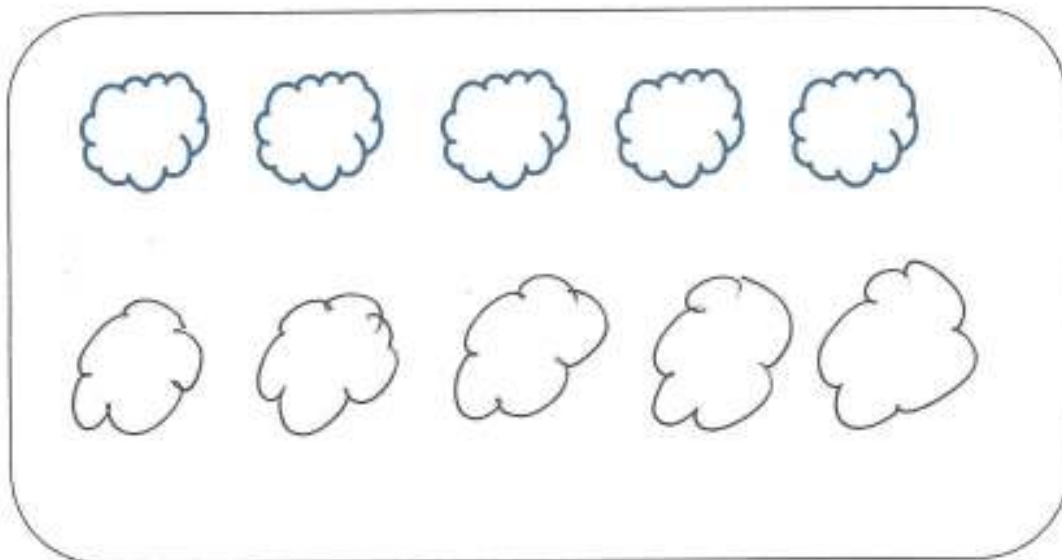
Draw enough 🙂 to make 10.

Lesson 28

Objective: Act out *result unknown* story problems without equations.

Homework Key

Answers will vary.

Work Samples

Make up a story about 10 things in your house. Draw a picture to go with your story. Be ready to share your story at school tomorrow.

I ate 10 pieces of candy corn at my house.
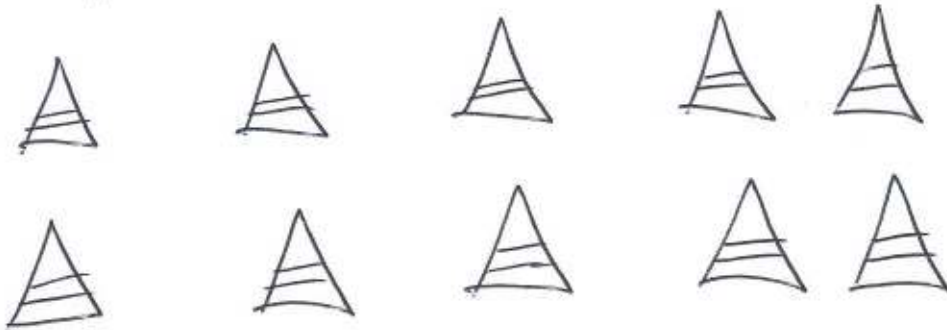
Grade K Module 1 Topic G

One More with Numbers 0-10

Focus Standard:

K.CC.4   Understand the relationship between numbers and quantities; connect counting to cardinality.
a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
c. Understand that each successive number name refers to a quantity that is one larger.

Instructional Days Recommended: 4

In the previous topics, students counted groups of three-dimensional objects, concretely seeing that numbers represented quantities of those objects. Topic G transitions to pictorially (two-dimensional objects) ordering and matching numeral and dot cards (dots are in a 10-frame format) for numbers 1–10.

In Lesson 29, students begin to learn, practice, and understand that each successive number name refers to a quantity that is 1 greater. This important insight leads later in the year, and in Grade 1, to the Level 2 strategy of counting on, rather than counting all (**K.CC.4c**).

Lesson 30 helps children to kinesthetically internalize the concept of 1 more by building linking cube stairs. From this concrete exercise, the students are then asked to arrange, analyze, and draw 1 more up to 10 in configurations other than the stair or tower format. They might be given a group of objects to count on

paper in a scattered or circular formation and then asked to add 1 more object to the group and count again.

This concept is extended in Lesson 32 as students analyze and draw sequences of quantities of 1 more, beginning with numbers other than 1. "Susan has three apples. Jerry has one more apple than Susan. Draw Jerry's apples."

Lesson 29

Objective: Order and match numeral and dot cards from 1 to 10. State 1 more than a given number.

Homework Key
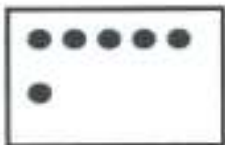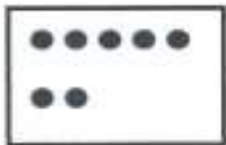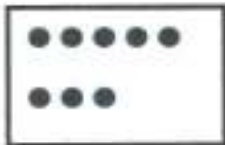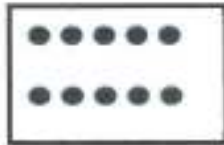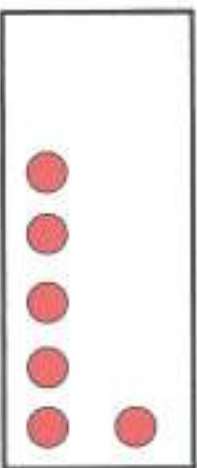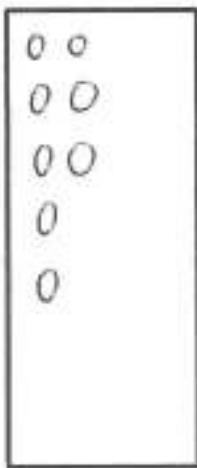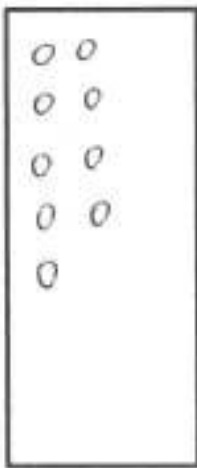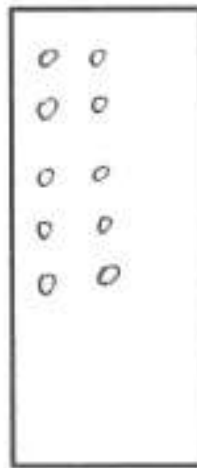
6; 7; 8; 9; 10

Answer provided; 7 dots drawn vertically; 8 dots drawn vertically; 9 dots drawn vertically, 10 dots drawn vertically

Answers will vary.

Work Samples

Count the dots. Write how many in the circle. Draw the same number of dots below the circle, but going up and down instead of across. The number 6 has been done for you.

Lesson 29 (continued)

Make your own 5-group cards! Cut the cards out on the dotted lines. On one side, write the numbers from 1 to 10. On the other side, show the 5-group dot picture that goes with the number.

on the other side of the card right the numbers
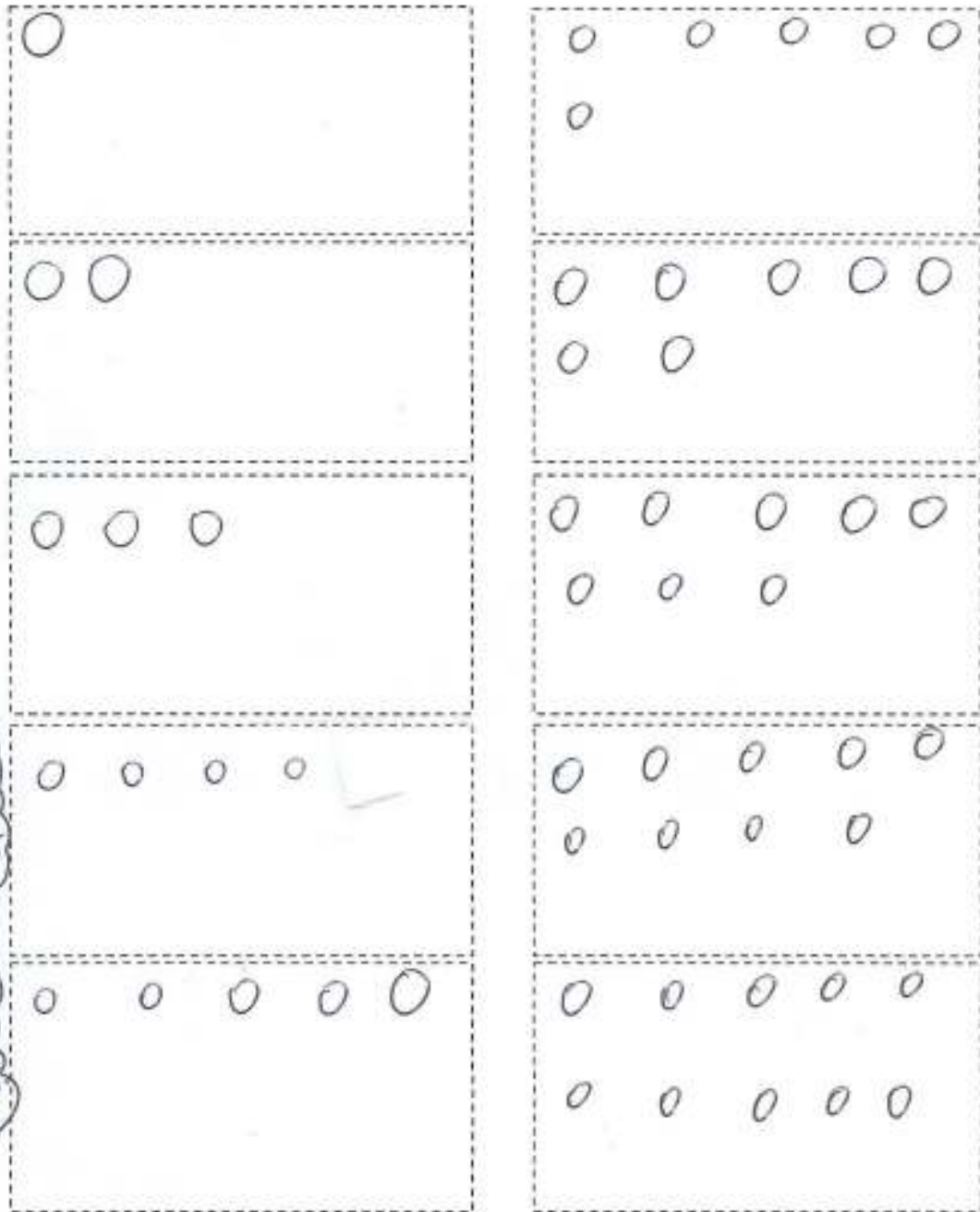
Lesson 30

Objective: Make math stairs from 1 to 10 in cooperative groups.

Homework Key

1 square drawn, 1; 2; 3 squares drawn, 3; 4; 5; 6 squares drawn, 6; 7; 8 squares drawn, 8; 9; 10
Answers will vary.
1 more cube drawn on each stair

Work Samples

Draw the missing stairs. Write the numbers below each step.

Lesson 31

Objective: Arrange, analyze, and draw 1 more up to 10 in configurations other than towers.

Homework Key

1 square drawn, 10 squares colored, 10
1 cloud drawn, 9 clouds colored, 9

Work Samples

Draw one more square. Color all the squares, and write how many.
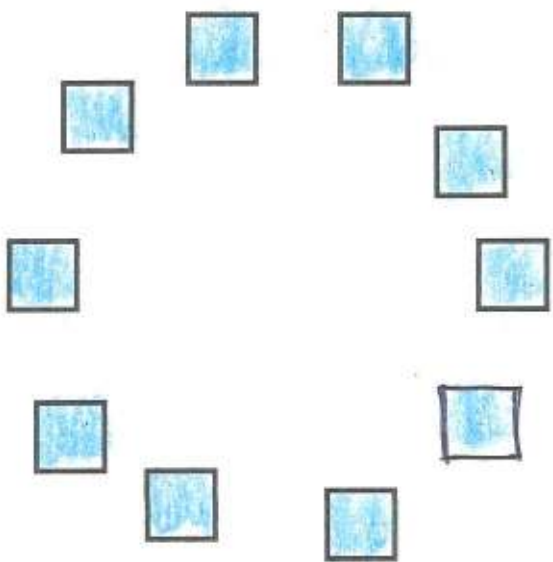
Lesson 32

Objective: Arrange, analyze, and draw sequences of quantities of 1 more, beginning with numbers other than 1.

Homework Key
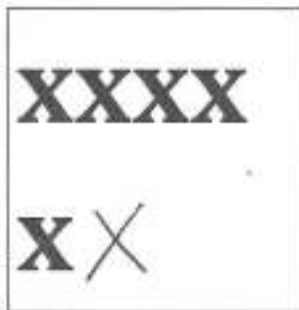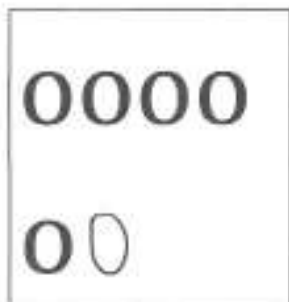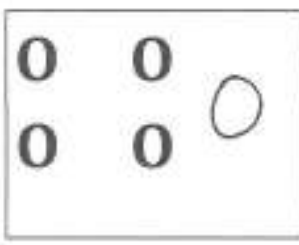
1, 3, 4, 5, 8, 9

1 more X or O drawn to show 1 more

Answers will vary

Work Samples

Write the missing numbers.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Draw X's or O's to show 1 more.

xx X | X X | X | XXXX X X

OOOO OO | OOO O | OOOO OOOO O | O O O O O

Tell someone a story about "1 more...and then 1 more." Draw a picture about your story.

1 more than 5 is 6.
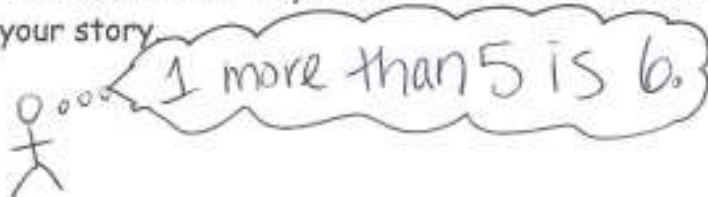
One Less with Numbers 0-10

Focus Standard:

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

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

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

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

Instructional Days Recommended: 5

Topic H is a mirror image of Topic G. While students explored *1 more* in Topic H, in Topic G, they explore *1 less*. In Lesson 33, students use their knowledge of relationships between numbers to order quantities of objects on paper (dot cards, picture cards, and shapes) from 10 to 1, and then match 1–10 digit cards to each set of objects in descending order.

Lesson 34 extends this concept by helping students state 1 less than a given number. "Nine triangles is 1 less than 10 circles, 8 squares is 1 less than 9 triangles." Lesson 35 again helps children to kinesthetically internalize the concept of 1 less by building linking cube stairs, but this time, instead of starting at the bottom on the first cube, there is a princess in a tower who walks down the stairs starting at the top 10-cube stair. The children discuss what is happening as the princess walks down each step. From this concrete exercise, students are then asked to arrange, analyze, and draw *1 less* configurations other than the stair or tower format. They might be given a group of objects to count on paper in a

scattered or circular formation and then asked to cross out 1 object from the group and count again.

To conclude this module, the students are given a culminating task that calls on them to use what they have learned to complete a series of tasks.

Lesson 33
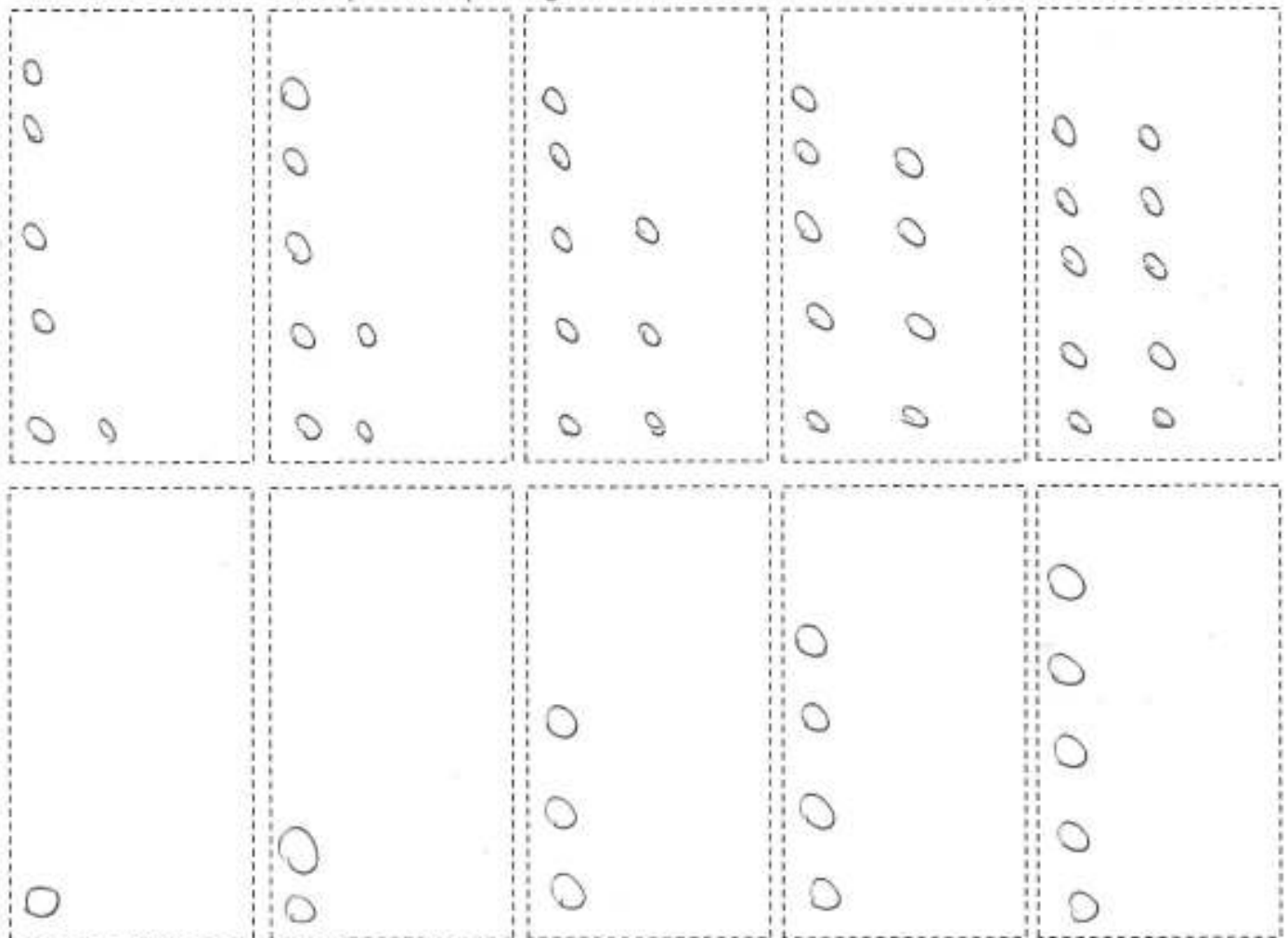
Objective: Order quantities from 10 to 1, and match numerals.

Homework Key

5-group cards completed per instructions

Work Samples

Make 5-group Cards

Cut the cards out on the dotted lines. On one side, write the numbers from 1-10. On the other side, show the 5-group dot picture that goes with the number. Mix up your cards, and practice putting them in order in the "1 less" way.

Lesson 34

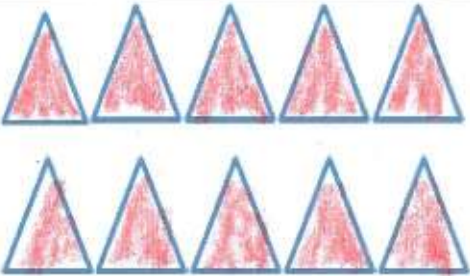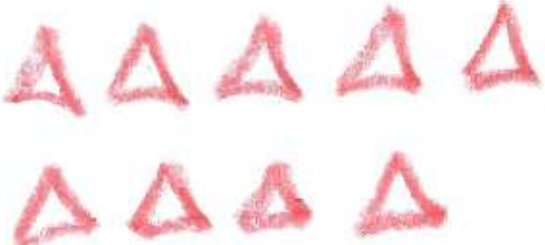Objective: Count down from 10 to 1, and state 1 less than a given number.

Homework Key

10 triangles colored, 10; 9 triangles drawn, 9
7 pears colored, 7; 6 pears drawn, 6

Work Samples

Count and color the triangles. Draw a group of triangles that is 1 less.
Write how many you drew.

Lesson 35

Objective: Arrange number towers in order from 10 to 1, and describe the pattern.

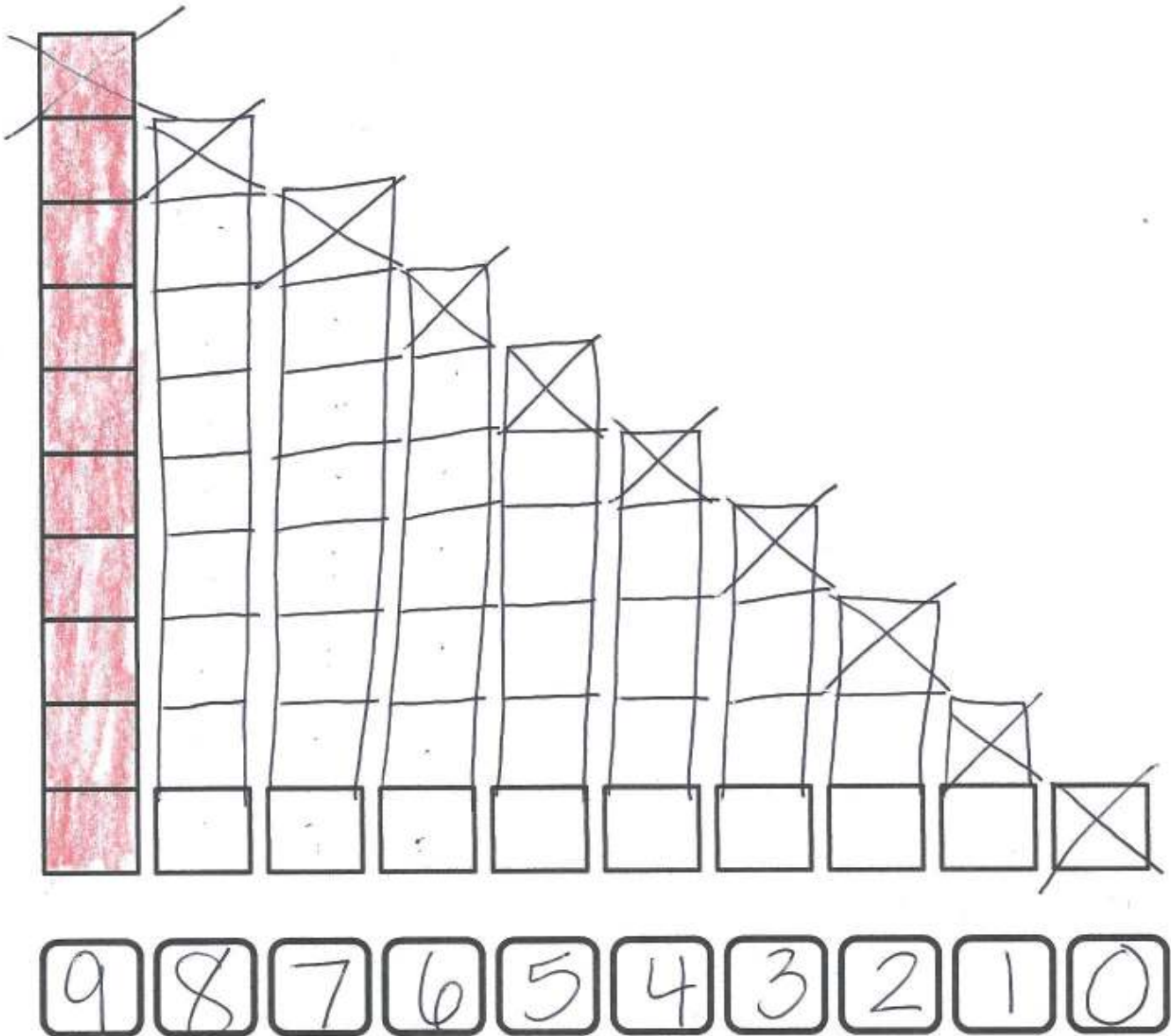**Homework Key**

Towers drawn; top cube crossed off in each tower

9, 8, 7, 6, 5, 4, 3, 2, 1, 0

Work Samples

Count and color the cubes in the tower. Cross the top cube off, and write the number. Draw the next tower with 1 less cube until there are no towers left.

Lesson 36

Objective: Arrange, analyze, and draw sequences of quantities that are 1 less in configurations other than towers.
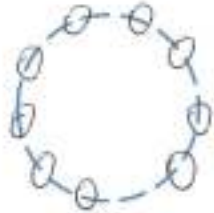
Homework Key

9 beads drawn on bracelet

8 beads drawn on bracelet

7 beads drawn on bracelet; 8

4 beads drawn on bracelet

3 beads drawn on bracelet

2 beads drawn on bracelet; 3

10, 9, 6, 5, 4, 0

Work Samples

Name _____   Date _____

Draw bracelets to show 1 less than the number in the box.

If the number is missing, write it in the box.

Ex: For #10, draw 1 les 9 beads.

| 10 | 9 | 8 |

| 7 | 6 | 5 |

Fill in the missing numbers.

10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0

Lesson 37
Culminating task

Homework Key

7; 8; group of 7 circled
10; 9; group of 9 circled
10; 9; group of 9 circled
Answers will vary.

Work Samples

Count how many are in each group. Write the number in the box. Circle the smaller group.

7 is smaller than 8.