

Kenmore-Town of Tonawanda UFSD

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



Grade K Module 3 Parent Handbook

The materials contained within this packet have been taken from the Great Minds curriculum Eureka Math.

Comparison of Length, Weight, Capacity, and Numbers to 10

In this Module, we will continue to support our growing number sense by comparing lengths, weights, and capacity of containers. Toward the end of the module, we build to comparing actual numerals.

More or less? Taller or shorter?



Words we will use in this module:

Comparison words:

- Enough/not enough
- Heavier than/Lighter than (weight)
- Longer than/shorter than (length)
- More than/fewer than - used with discrete quantities
- More than/less than - used with volume, area, and number comparison
- Taller than/shorter than (height)
- The same as

Other vocabulary:

- Balance scale
- Endpoint - used to align strings, etc, for direct comparison
- Capacity - used in reference to volume
- Length
- Weight
- Height



Comparing a picture of a shoe with a cube stick

What Came Before this Module: We learned all about shapes, both solid and flat. We sorted and compared them, and looked for them around our classroom.

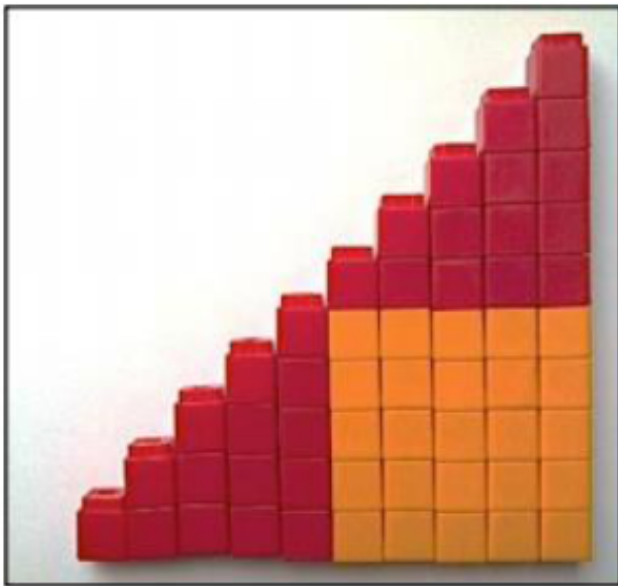
What Comes After this Module: We begin a very exciting part of our learning about numbers: addition and subtraction!

+ How you can help at home:

- Begin asking more than/less than questions about groups of objects (up to 10) around the house
- Encourage measurement activities of all types
- Continue to review and practice counting numbers up to 10

Key Common Core Standards:

- Compare numbers
 - Use the language of “greater than, less than, or equal to” when comparing groups of objects
 - Compare numerals within 10 (e.g. 4 is less than 7)
- Describe and compare measurable attributes (such as length and weight)
 - Directly compare two objects with a measurable attribute in common (e.g. that student is shorter than this student)



Spotlight on Math
Models:

Number Towers

Students will use this tool to model and learn concepts of more than/less than.

A Story of Units has several key mathematical “models” that will be used throughout a student’s elementary years.

Number towers, also known as number stairs, are representations of quantity made by joining together interlocking cubes. In Kindergarten, they are used to help students literally build their knowledge of cardinality (the number of elements of a set of objects) by erecting towers of various numbers. Number towers are then used to teach concepts of “more/less”, as well as the specific patterns of “1 more than/1 less than”. This model leads to an understanding of comparison and the word “than” in other contexts as well: taller and shorter than, heavier than, longer than, etc.

Students are encouraged to build towers for quantities 1 through 5 in one color, with quantities beyond 5 added on in a second color. This color change provides developmental support for understanding the important benchmark number 5, which will serve them well when they begin to add and subtract within groups of 10 as the year progresses.

Sample problem from Module 3:

Students count and then compare two groups of objects. They use their information to complete the math sentence under the picture.

(Sample taken from Module 3, Lesson 26)



_____ is less than _____.

Comparison of Length, Weight, Capacity, and Numbers to 10

OVERVIEW

Having observed, analyzed, and classified objects by shape into predetermined categories in Module 2, students now compare and analyze length, weight, capacity, and finally, numbers in Module 3. Students use language such as *longer than*, *shorter than*, *as long as*; *heavier than*, *lighter than*, *as heavy as*; and *more than*, *less than*, *the same as*. “8 is more than 5.” “5 is less than 8.” “5 is the same as 5.” “2 and 3 is also the same as 5.”

Topics A and B focus on comparison of length, Topic C on comparison of weight, and Topic D on comparison of volume (**K.MD.2**). Each of these topics opens with an identification of the attribute being compared within the natural context of the lesson (**K.MD.1**). For example, in Topic A, before exploring length, students realize they could have chosen to compare by a different attribute: weight, length, volume, or numbers (**K.MD.1**).

T: Students, when you compare and say it is bigger, let’s think about what you mean. (After each question, allow students to have a lively, brief discussion.)

T: Do you mean that it is bigger, like this book is *heavier than* this ribbon? (Dramatize the weight of the book and ribbon.)

T: Do you mean that it is longer, like this ribbon is *longer than* this book? (Dramatize the length of the ribbon.)

T: Do you mean that it takes up more space, like this book *takes up more space* than this ribbon when it is all squished together? (Dramatize.)

T: Do you mean to compare the number of things, like *the number* of books and ribbons? (Dramatize a count.)

T: So, we can compare things in different ways! Today, let’s compare by thinking about longer than, taller than, or shorter than. (Dramatize.)

After the Mid-Module Assessment, Topic E begins with an analysis using the question, “Are there enough?” This leads naturally from exploring when and if there is enough space to seeing whether there are enough chairs for a small set of students: “There are fewer chairs than students!” This bridges into Topics F and G, which present a sequence building toward the comparison of numerals (**K.CC.7**). Topic F begins with counting and matching sets to compare (**K.CC.6**). The module culminates in a three-day exploration, one day devoted to each attribute: length, weight, and volume (**K.MD.2**). The module closes with a culminating task devoted to distinguishing between the measurable attributes of a set of objects: a water bottle, cup, dropper, and juice box (**K.MD.1**).

The module supports students’ understanding of amounts and their developing number sense. For example, counting how many small cups of rice are contained within a larger quantity provides a foundational concept of place value: Within a larger amount are smaller equal units, which together make up the whole. “4 cups of rice is the same as 1 mug of rice.” Compare that statement to “10 ones is the same as 1 ten” (**1.NBT.2a**). As students become confident directly comparing the length of a pencil and a crayon with statements such as “The pencil is longer than the crayon” (**K.MD.2**), they will be ready in later grades to indirectly compare using length units with statements such as “The pencil is longer than the crayon because 7 cubes is more than 4 cubes” (**1.MD.2**).

Additional foundational work for later grades is as follows:

- **Foundational work with equivalence.** The length of a stick with 5 linking cubes is the same as the length of my cell phone. A pencil weighs the same as a stick with 5 linking cubes. Each module component on measurement closes with a focus on *the same as*.
- **Foundational work for the precise use and understanding of rulers and number lines.** The module opens with lessons pointing out the importance of aligning endpoints to measure length.
- **Foundational understanding of area.** At the opening of the second half of the module, students informally explore area as they see whether a yellow circle fits inside a red square. They then see how many small blue squares will fit inside the red square and, finally, that many beans will cover the same area (pictured below).



- **Foundational understanding of comparison.** As students count to compare the length of linking cube sticks, they are laying the foundation for answering *how many more...than/less...than* questions in Grade 1 (**1.MD.2**).

Terminology

New or Recently Introduced Terms

- Balance scale (tool for weight measurement)
- Capacity (with reference to volume)
- Compare (specifically using direct comparison)
- Endpoint (with reference to alignment for direct comparison)
- Enough/not enough (comparative term)
- Heavier than/lighter than (weight comparison)
- Height (vertical distance measurement from bottom to top)
- Length (distance measurement from end to end; in a rectangular shape, length can be used to describe any of the four sides)
- Longer than/shorter than (length comparison)
- More than/fewer than (discrete quantity comparison)
- More than/less than (volume, area, and number comparisons)
- Taller than/shorter than (height comparison)
- The same as (comparative term)
- Weight (heaviness measurement)

Familiar Terms and Symbols

- Match (group items that are the same or that have the same given attribute)
- Numbers 1–10

Suggested Tools and Representations

- Balance scales (as pictured below)



- Centimeter cubes
- Clay
- Linking cubes in sticks with a color change at the five
- Plastic cups and containers for measuring

Grade K Module 3 Topic A

Comparison of Length and Height

Focus Standards:

- K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Instructional Days Recommended: 3

In Module 2, students observed, analyzed, and categorized geometric shapes by focusing on their attributes; they now launch into the process of recognizing and comparing these attributes. In Module 3, comparisons of length, weight, and volume transition into comparisons of numbers: longer *than*, shorter *than*, as long as; heavier *than*, lighter *than*, as heavy as; *more than*, *less than*, *the same as*. For example, “8 is *more than* 5. 5 is *less than* 8. 5 is *the same as* 5.”

In Topic A, students begin by identifying the attribute of length by determining that a book and a ribbon can be compared in different ways: as longer than, heavier than, or taking up more space. This occurs within the natural context of the lesson, which then proceeds to comparing length and height when endpoints are aligned and not aligned. Jan is shorter than Pat when they are standing next to each other with one of their endpoints automatically aligned. But, what if Jan is standing on a stepladder? Now, the endpoints are not aligned, and students, faced with this complexity, understand that Jan is still shorter than Pat though her head may be higher because she is standing on a stepladder.

In Lesson 2, students compare the length of their strings to the length of various objects within the classroom. “My string is longer than the marker.” “My string is shorter than my friend’s shoe.” They know to line up the endpoints or the comparison is not valid.

In Lesson 3, students make a series of comparisons: the pencil is longer than the marker; the eraser is shorter than the marker. They directly compare only two objects but in doing so, potentially see more relationships. Then, they engage in drawing a magical world where, for example, a flower is taller than a house.

**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: Compare lengths using *taller than* and *shorter than* with aligned and non-aligned endpoints.

Homework Key

3 shorter flowers drawn; 5

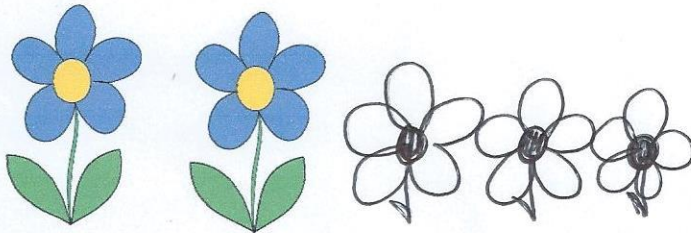
2 taller ladybugs drawn; 4

Object drawn taller than student; object drawn shorter than flag pole

Homework Samples

Draw 3 more flowers that are shorter than these flowers.
Count how many flowers you have now. Write the number in
the box.

5



Draw 2 more ladybugs that are taller than these ladybugs.
Count how many ladybugs you have now. Write the number in
the box.

4



Lesson 2

Objective: Compare length measurements with string.

Homework Key

Answers will vary.

Homework Samples

Using the piece of string from class, find three items at home that are shorter than your piece of string and three items that are longer than your piece of string. Draw a picture of those objects on the chart. Try to find at least one thing that is about the same length as your string, and draw a picture of it on the back.

Shorter than the string	Longer than the string
pencil	fridge
cup	tv
baby spoon	chair
cell phone	welcome mat
napkin	shovel

Lesson 3

Objective: Make a series of *longer than* and *shorter than* comparisons.

Homework Key

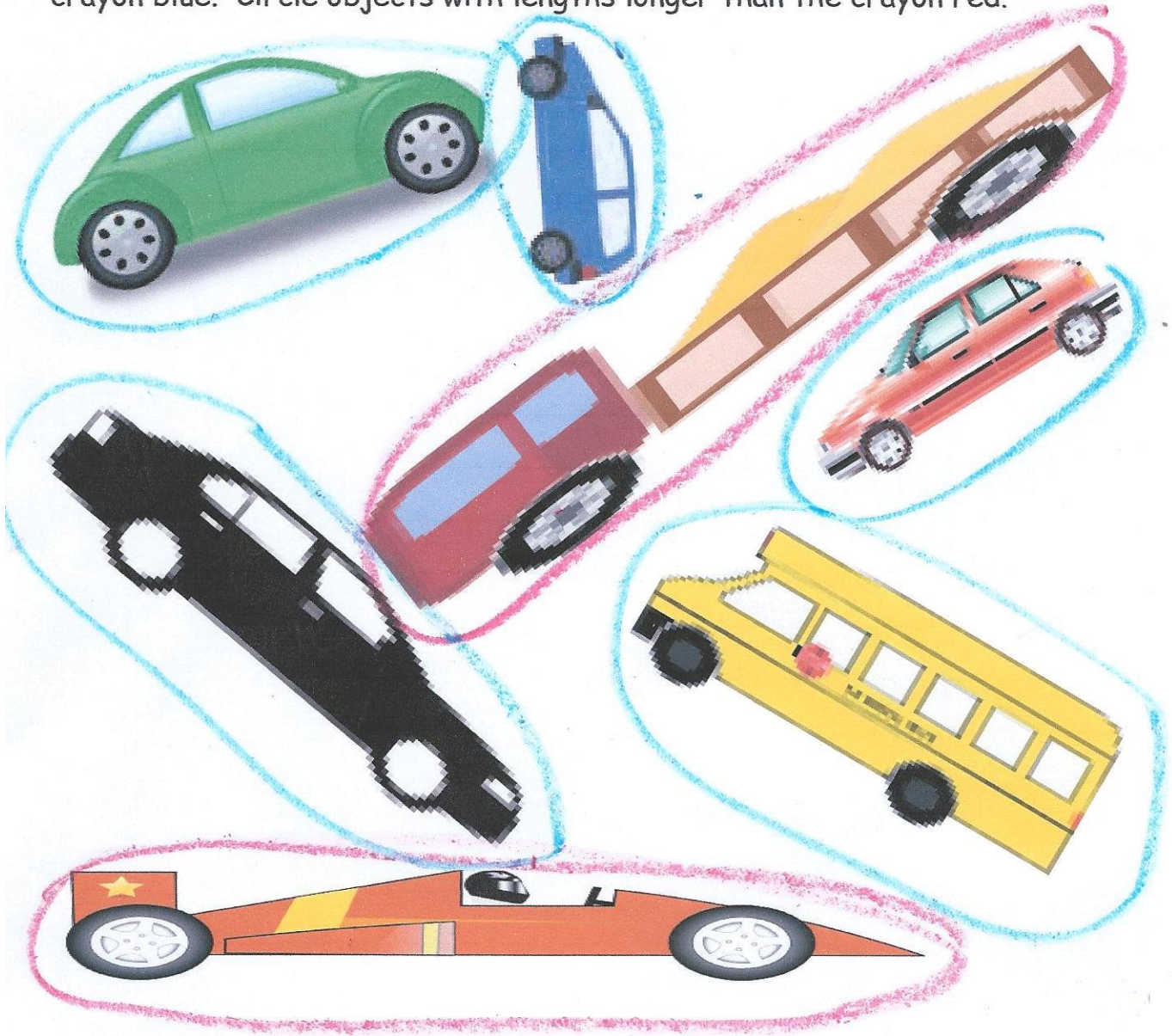
Vehicles shorter than crayon circled in blue

Vehicles longer than crayon circled in red

Answers will vary.

Homework Samples

Take out a new crayon. Circle objects with lengths shorter than the crayon blue. Circle objects with lengths longer than the crayon red.



Grade K Module 3 Topic B

Comparison of Length and Height of Linking Cube Sticks within 10

Focus Standards:

- K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Instructional Days Recommended: 4

In Topic A, students compared length and height of different objects when their endpoints were aligned and not aligned. Topic B continues with informal comparison of length with students comparing the lengths and heights of linking cube sticks within 10 with a color change at 5. In Lesson 4, to reinforce the importance of the 5-group, students compare multi-unit linking cube sticks to a 5-stick. “My 4-stick is shorter than my 5-stick.”

In Lesson 5, students compare lengths with endpoints that are aligned and not aligned. “My 7-stick is longer than my 4-stick. When I push my 4-stick up or turn it on an angle, it is still shorter than my 7-stick.”

In Lesson 6, students compare their linking cube sticks to objects. “My 4-stick is shorter than my pencil. My 4-stick is longer than my eraser.” Using linking cubes to directly compare different objects is a precursor to being able to compare the lengths of two objects using a third object and order the lengths of different

objects in later grades, as well as provide students with a practical context for solidifying their developing number sense.

In Lesson 7, the students break their 5-stick into two parts. “I broke my 5-stick into two parts. My 5-stick is longer than my 3- or 2-sticks. Together, my 3- and 2-sticks are the same as my 5-stick.” This is an extension of their decomposition work from Kindergarten Module 1. This provides the foundation for the number work coming in Kindergarten Module 4, wherein students decompose all numbers to 10. This also encourages their fluency with facts to 5.

**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: Compare the length of linking cube sticks to a 5-stick.

Homework Key

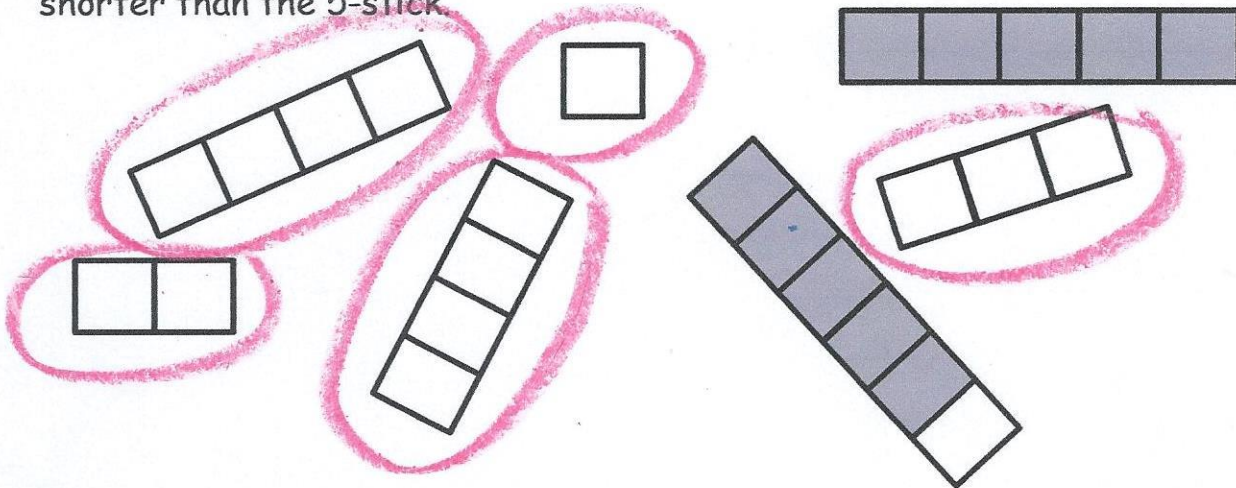
1-, 2-, 3-, and 4-sticks circled in red

6-, 7-, and 9-sticks circled in blue

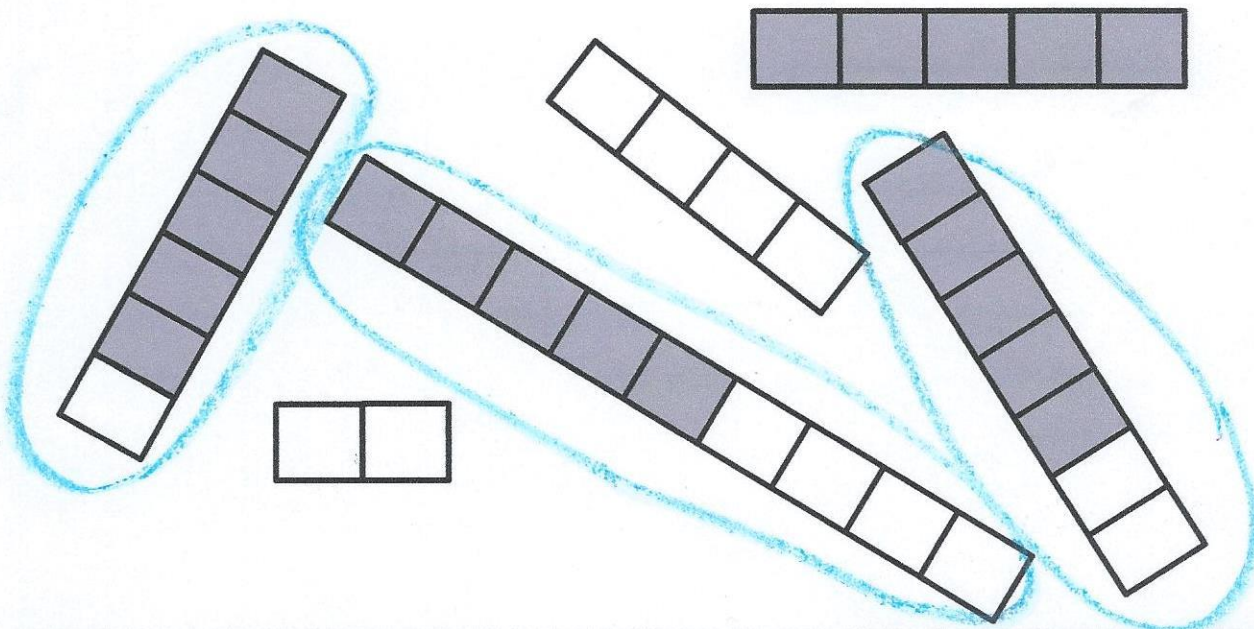
7-stick drawn; 1 stick longer than 7-stick drawn; 1 stick shorter than 7-stick drawn

Homework Samples

Use a red crayon to circle the sticks that are shorter than the 5-stick.



Use a blue crayon to circle the sticks that are longer than the 5-stick.



Lesson 5

Objective: Determine which linking cube stick is *longer than* or *shorter than* the other.

Homework Key

6-stick circled

6, 7; 7, 6

7-stick drawn; 1 stick longer than 7-stick drawn; 1 stick shorter than 7-stick drawn

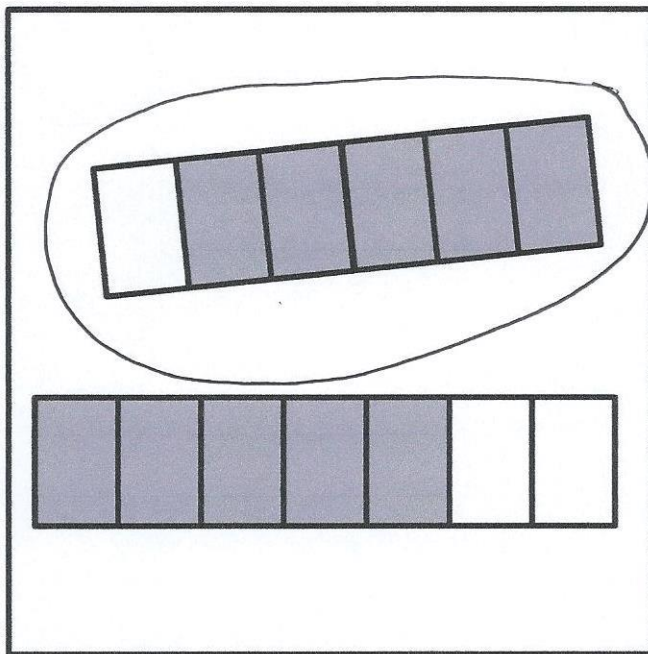
9-stick circled

8, 9; 9, 8

5-stick drawn; 1 stick longer than 5-stick drawn; 1 stick shorter than 5-stick drawn

Homework Samples

Circle the stick that is shorter than the other.



My 6-stick is shorter than my 7-stick.

My 7-stick is longer than my 6-stick.

Lesson 6

Objective: Compare the length of linking cube sticks to various objects.

Homework Key

7 cubes next to palm tree colored

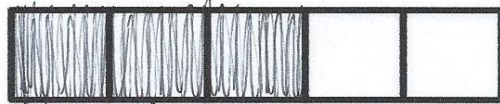
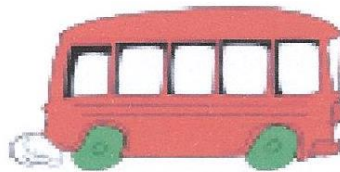
4 cubes under crayon colored

3 cubes under bus colored

4 cubes under shoe colored

Homework Samples

Color the cubes to show the length of the object.



Lesson 7

Objective: Compare objects using *the same as*.

Homework Key

2 cubes colored green; 3 cubes colored blue

3 cubes colored blue; 2 cubes colored green; 5

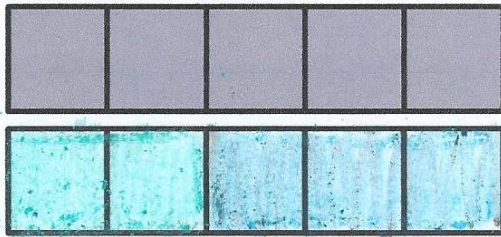
1 cube colored green; 4 cubes colored blue; 5

4 cubes colored green; 1 cube colored blue; 5

2 cubes colored yellow; 2 cubes colored blue; 4

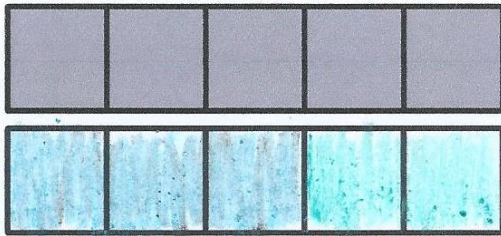
Homework Samples

These boxes represent cubes.



Color 2 cubes green. Color 3 cubes blue.

Together, my green 2-stick and blue 3-stick are the same length as 5 cubes.



Color 3 cubes blue. Color 2 cubes green.

Together, my blue 3-stick and green 2-stick are the same length as

5 cubes.

Grade K Module 3 Topic C

Comparison of Weight

Focus Standards:

- K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Instructional Days Recommended: 5

In Topics A and B, students compared length and height; now, in Topic C, they compare the weight of objects, progressing from informal comparisons of objects (comparing the weight of a book to that of a pencil by picking them up) to using balance scales when greater precision is necessary or desired.

In Lesson 8, students compare the weight of a book to the weight of an eraser and other objects they find. Students then use the weight of the book as a benchmark and find other objects to compare with the weight of the book. “This eraser is lighter than my book. The bag of blocks is heavier than my book.”

In Lesson 9, students use a balance scale as a tool to compare the weights of objects that are approximately the same and thus more difficult to compare. For example, “My pencil is lighter than this marker.”

In Lesson 10, the measurement becomes more precise as a set of pennies is used to directly compare the weight of objects. Students use a balance to determine

that the pencil weighs the same as 5 pennies. The marker weighs the same as 9 pennies. The students compare one object to another, a set and a solid object. They stay within kindergarten standards by not comparing the number of pennies

each object weighs; instead they simply enjoy the exploration of finding the set of pennies that weighs as much as an object.

In Lesson 11, students observe conservation of weight. They place, for example, two balls of clay of equal weight on either side of a balance scale. They break one of the balls into two smaller balls and observe the two sides of the scale are still balanced. Students then break the single ball into three smaller balls and observe the same thing. The lesson continues with a sequence leading back to the two balls once again balancing after all the permutations.

In Lesson 12, they extend their learning to use different units to compare the weight of the same item using different objects. “The pencil weighs the same as a set of 5 pennies. The pencil weighs the same as a set of 10 little cubes.”

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Lesson 8

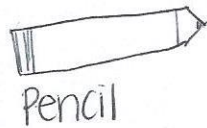
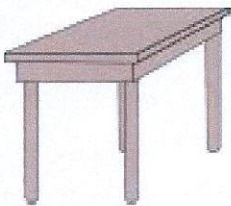
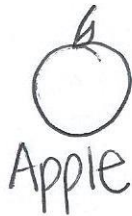
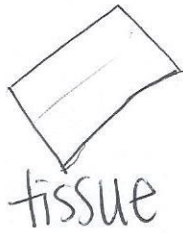
Objective: Compare using *heavier than* and *lighter than* with classroom objects.

Homework Key

Answers will vary.

Homework Samples

Draw an object that would be lighter than the one in the picture.



Lesson 9

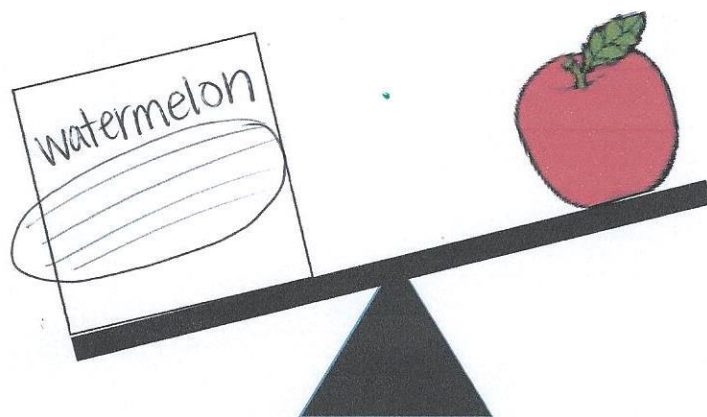
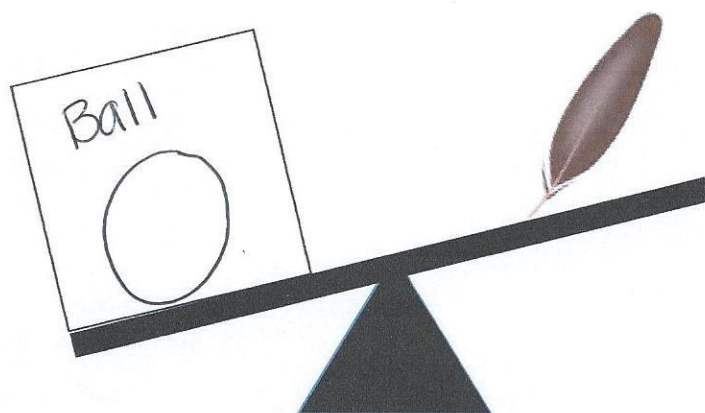
Objective: Compare using *heavier than* and *lighter than* with balance scales

Homework Key

Answers will vary.

Homework Samples

Draw something inside the box that is heavier than the object on the balance.



Lesson 10

Objective: Compare the weight of an object to a set of unit weights on a balance scale.

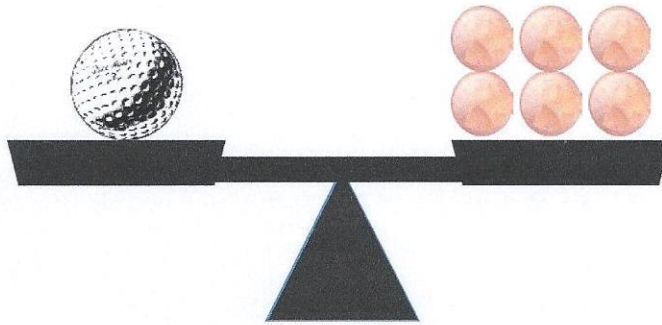
Homework Key

6; 9

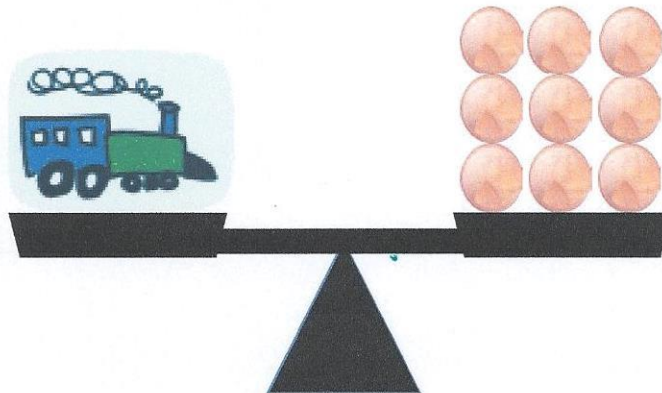
5 pennies drawn; 10 pennies drawn

Answers will vary.

Homework Samples



The golf ball is as heavy as 6 pennies.



The toy train is as heavy as 9 pennies.

Lesson 11

Objective: Observe conservation of weight on the balance scale.

Homework Key

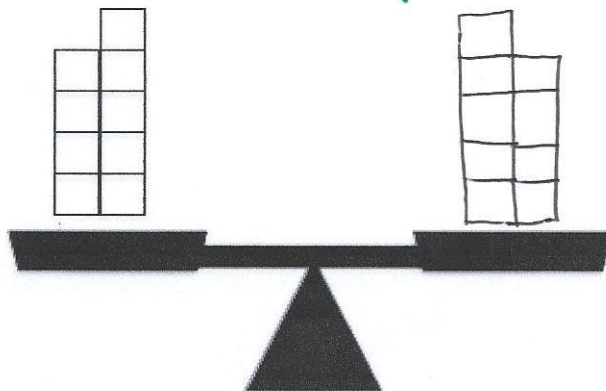
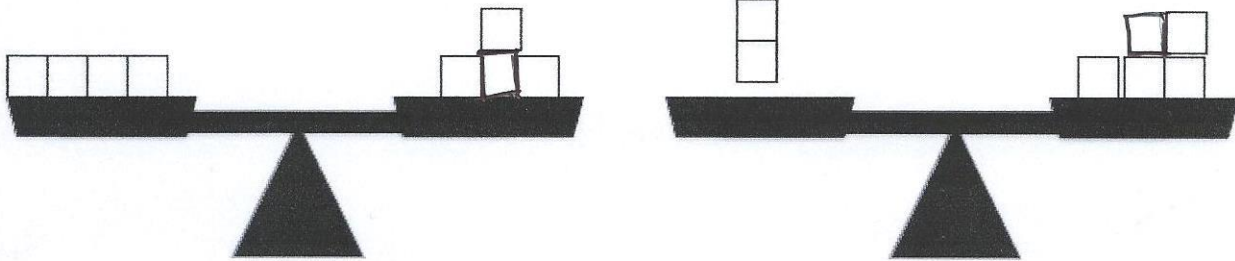
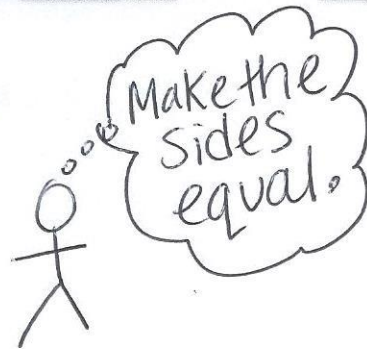
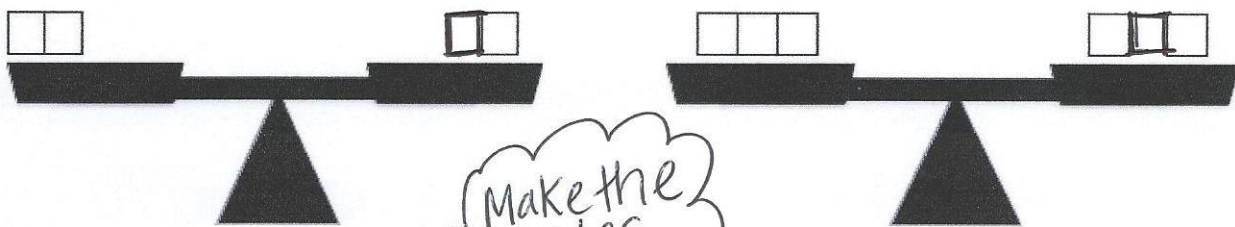
1 cube drawn; 1 cube drawn

1 cube drawn; 1 cube drawn

9 cubes drawn

Homework Samples

Draw linking cubes so each side weighs the same.



Lesson 12

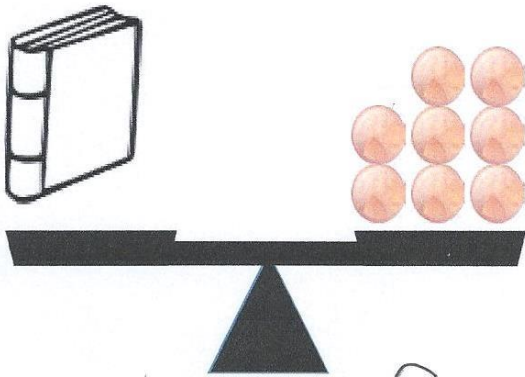
Objective: Compare the weight of an object with sets of different objects on a balance scale.

Homework Key

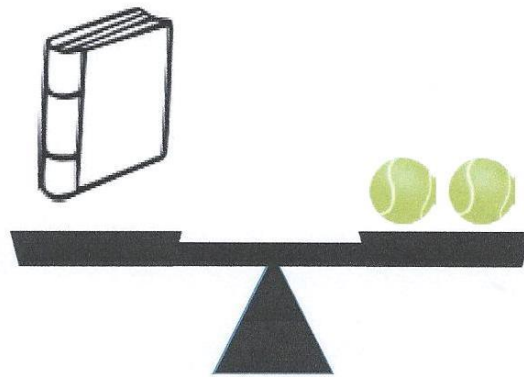
8; 2

10; 6

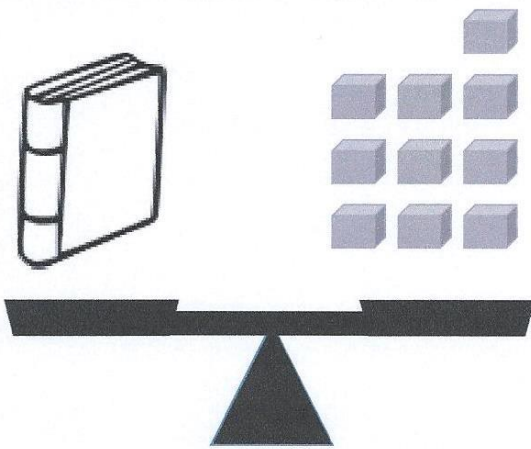
Homework Samples



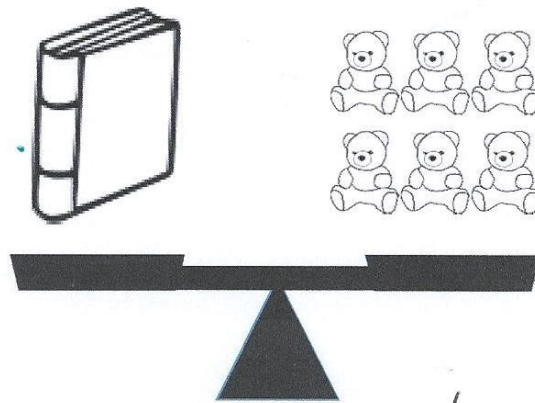
The book is as heavy as 8
pennies.



The book is as heavy as 2
tennis balls.



The book is as heavy as 10
cubes.



The book is as heavy as 6
counting bears.

Grade K Module 3 Topic D

Comparison of Volume

Focus Standards:

- K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Instructional Days Recommended: 3

In Topic D, students compare volume in the same progression as that of weight in Topic C. In Lesson 13, they see that one container holds more rice than another by pouring the rice from the first container into a smaller empty one. “It is overflowing! The bowl holds more rice than the cup.”

In Lesson 14, students explore how volume is conserved by pouring rice from a bowl to a bottle and then back into the original bowl. They discover that while the quantity of rice may look very different when poured into containers of different sizes and shapes, the amount remains the same.

In Lesson 15, students count the number of small scoops of rice within a larger amount. “The bowl holds 10 little scoops of rice. I wonder how many little scoops of rice this mug holds?” Before the Mid-Module Assessment, students consider the different measurable attributes of single items such as a water bottle, dropper, and juice box. They consider what tools they might use to compare these attributes.

**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 13

Objective: Compare volume using *more than*, *less than*, and *the same as* by pouring.

Homework Key

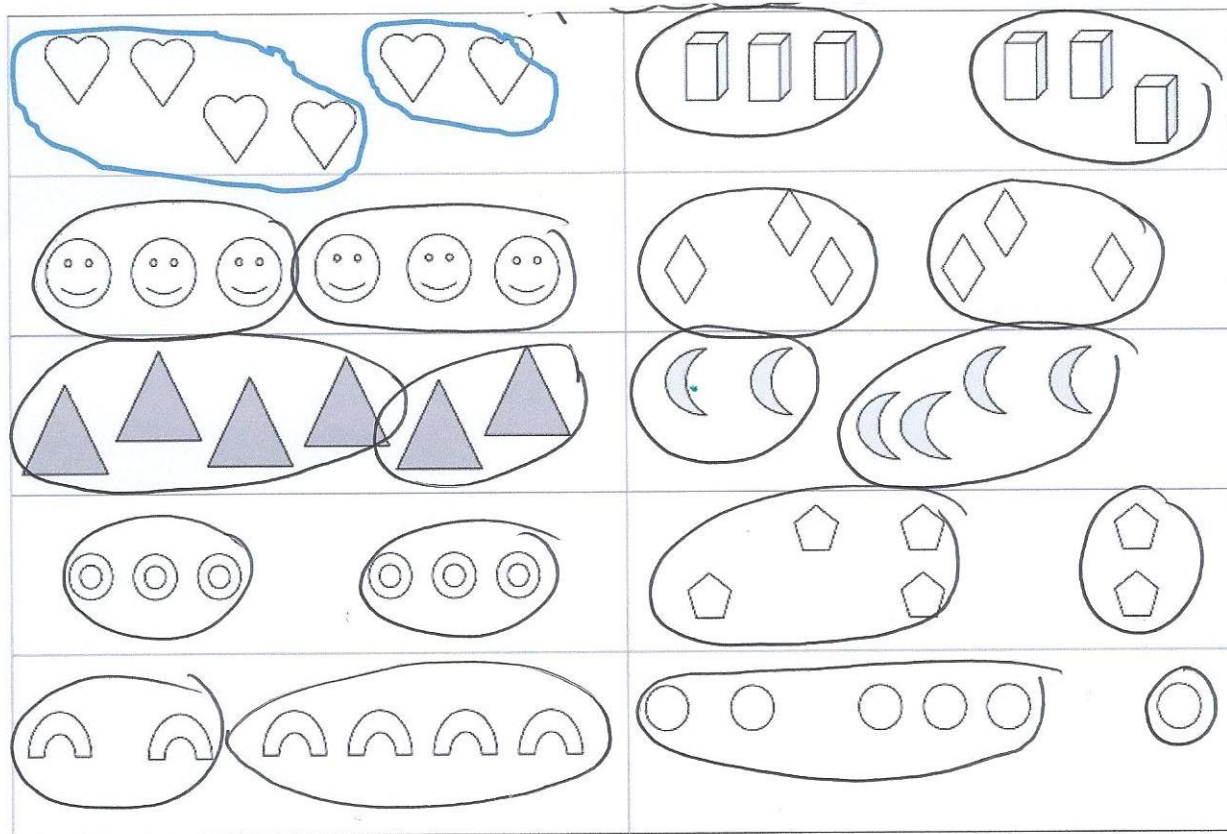
2 sets within each set of 6 circled; answers may vary.

Homework Samples

In class, we have been working on capacity. Encourage your child to explore with different-sized containers to see which ones have the biggest and smallest capacity. Children can experiment by pouring liquid from one container to another.

All the homework you will see for the next few days will be a review of skills taught from Module 1.

Each rectangle shows 6 objects. Circle 2 different sets within each. The two sets represent the two parts that make up the 6 objects. The first one has been done for you.



Lesson 14

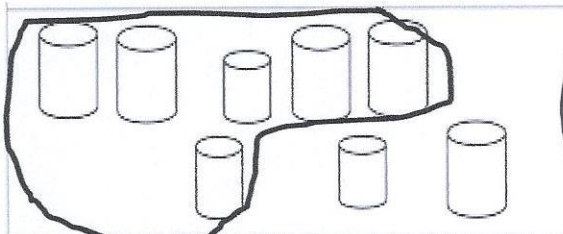
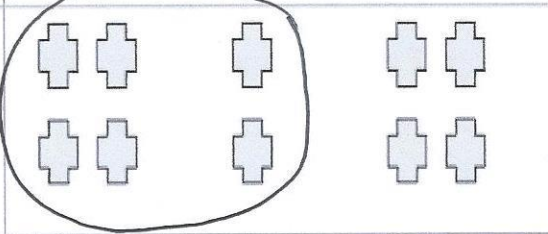
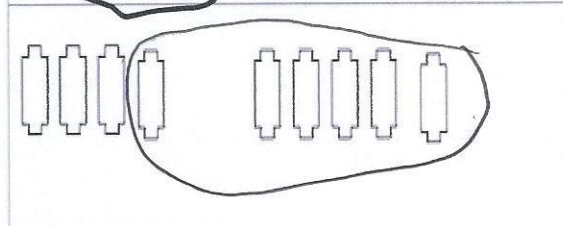
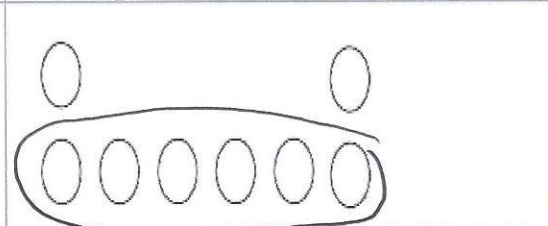
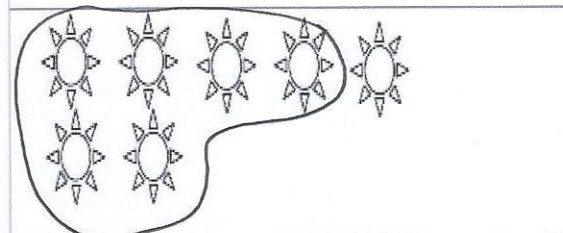
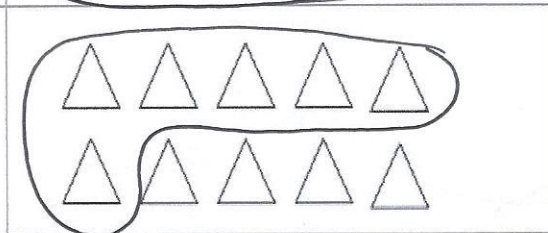
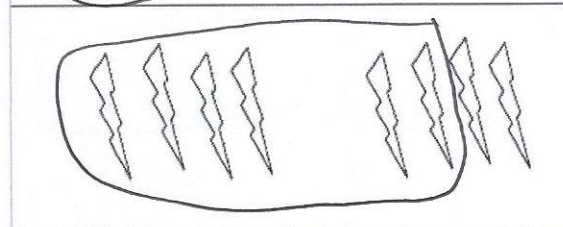
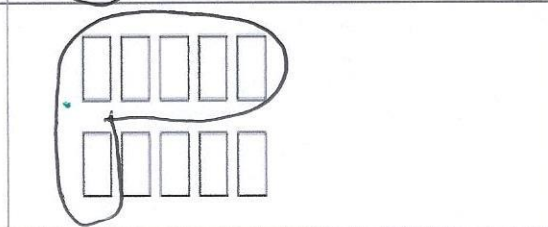
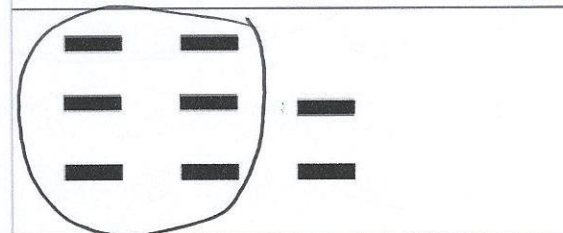
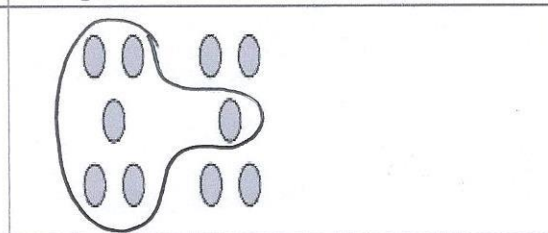
Objective: Explore conservation of volume by pouring.

Homework Key

1 set of 6 circled for each; answers may vary.

Homework Samples

Within each rectangle, make one set of 6 objects. The first one has been done for you.

Lesson 15

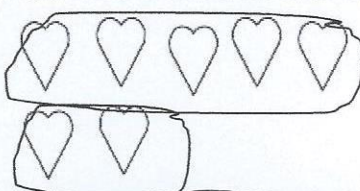
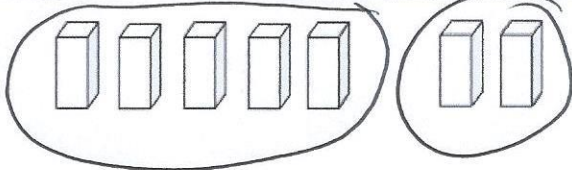
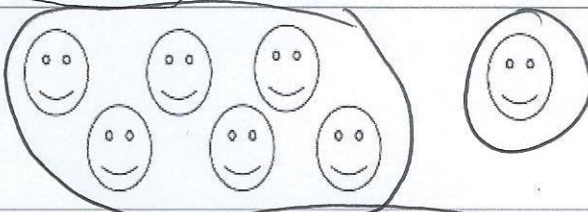
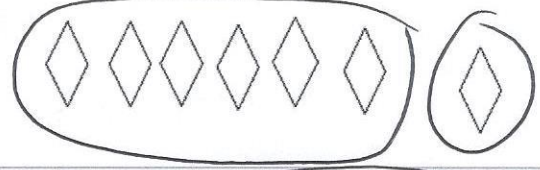
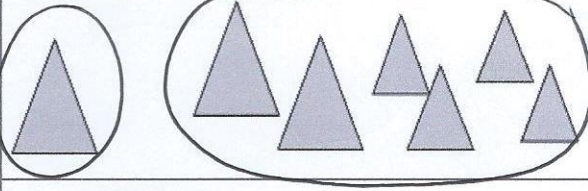
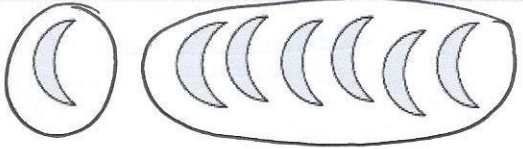
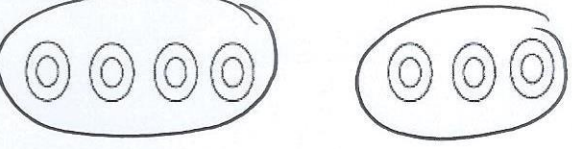
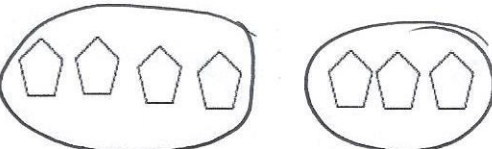
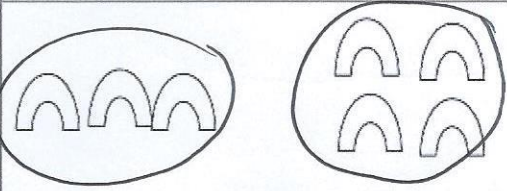

Objective: Compare using *the same as* with units.


Homework Key

2 sets within each set of 7 circled

Homework Samples

Circle 2 sets within each set of 7. The first one has been done for you.

 This helps with visualize parts that equal $\frac{1}{2}$.

Grade K Module 3 Topic E

Are There Enough?

Focus Standard:

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)

Instructional Days Recommended: 4

After the Mid-Module Assessment, the module shifts toward comparison of numbers, opening in Topic E with four lessons in which students consider, “Are there enough?” in a variety of contexts. Students explore and compare area by participating in everyday activities, such as comparing two pieces of paper to determine which one will allow them to create a larger drawing.

In Lesson 16, students consider and establish that a square has enough space to fit a circle inside it and then discover that the same square fits many small squares perfectly if they are arranged in rows.

In Lesson 17, students work to determine whether there are enough forks for every plate, chairs for every child, and pails for every shovel.

In Lessons 18 and 19, the language of *enough* shifts to the language of *more than* and *fewer than*. There are more forks than plates. There are fewer chairs than children. There are the same number of pails and shovels.

**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 16

Objective: Make informal comparison of area.

Homework Key

Student's hand traced; adult's hand traced

Bigger hand size recorded; answers may vary.

Homework Samples

Trace your hand. Cover the tracing with pennies. Have an adult trace his or her hand. Cover the tracing with pennies.* Whose hand is bigger?

How do you know that?

Mom's hand is bigger
because more pennies
fit on it.



*Note: Instead of pennies, you can use pasta, beans, buttons, or another coin. You may want to do this activity twice using different materials to cover the hands. Talk about which materials took more or less to cover and why.

Lesson 17

Objective: Compare to find if there are enough.

Homework Key

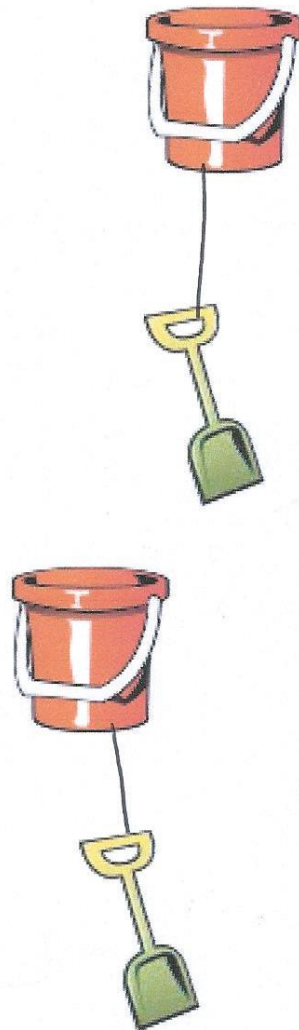
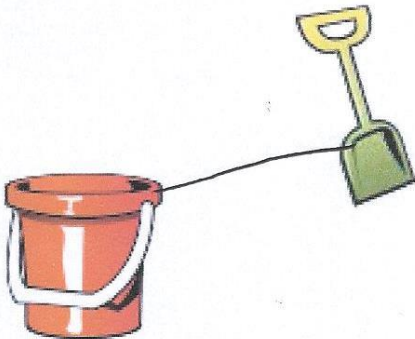
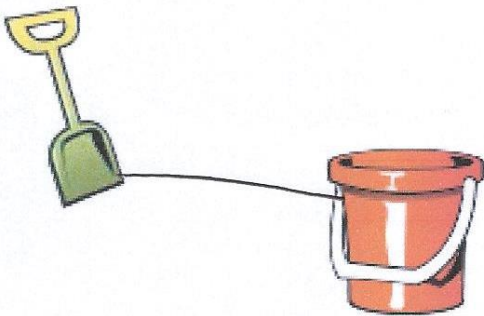
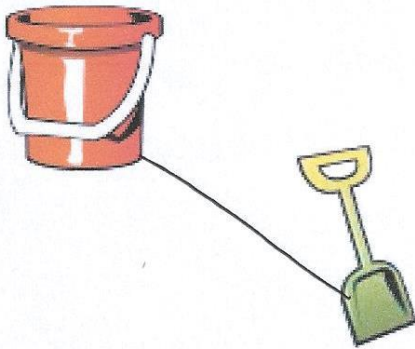
Line drawn from each pail to each shovel

Line drawn from each plate to each fork; 1 fork drawn

4 fishbowls drawn

Homework Samples

Draw straight lines with your ruler to see if there are enough shovels for the pails.



Lesson 18

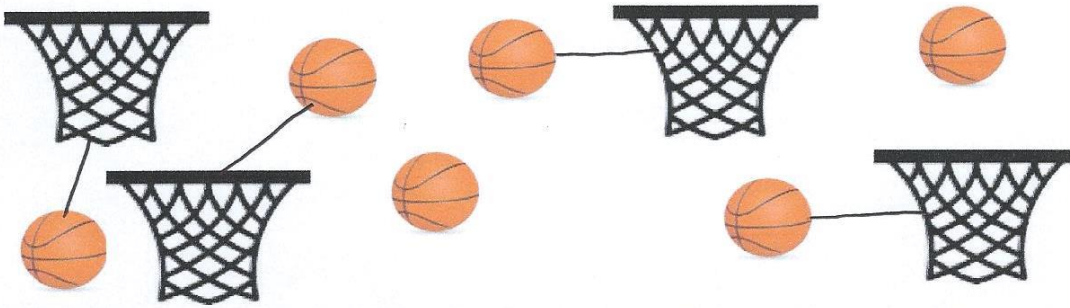
Objective: Compare using *more than* and *the same as*.

Homework Key

Line drawn from each hoop to a ball; ball circled; 6

8; 8; YES circled

Homework Samples



Draw straight lines with your ruler to see if there is one hoop for each ball.

Are there more



or

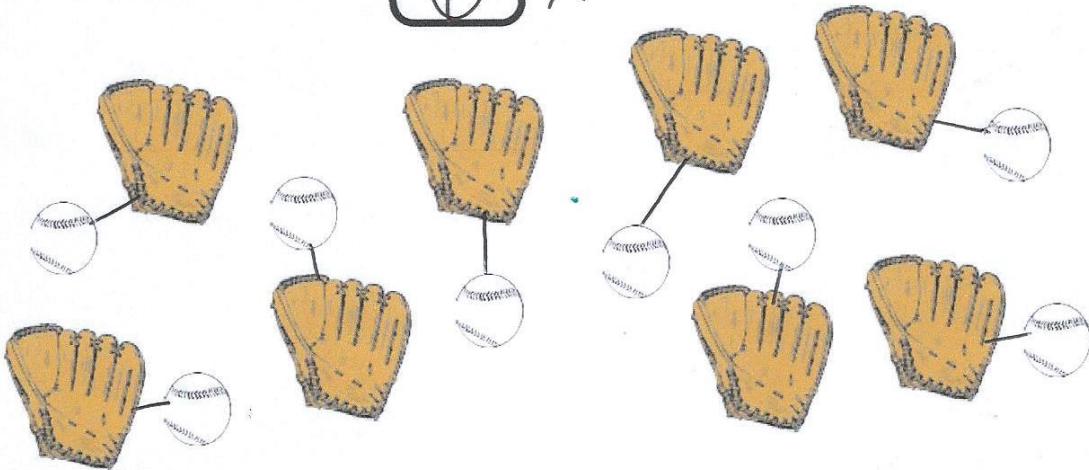


2 extra basketballs

Write the number of



6



Write the number of



. Write the number of



8

8

Are there the same number of



as



? Circle Yes or No.

Lesson 19

Objective: Compare using *fewer than* and *the same as*.

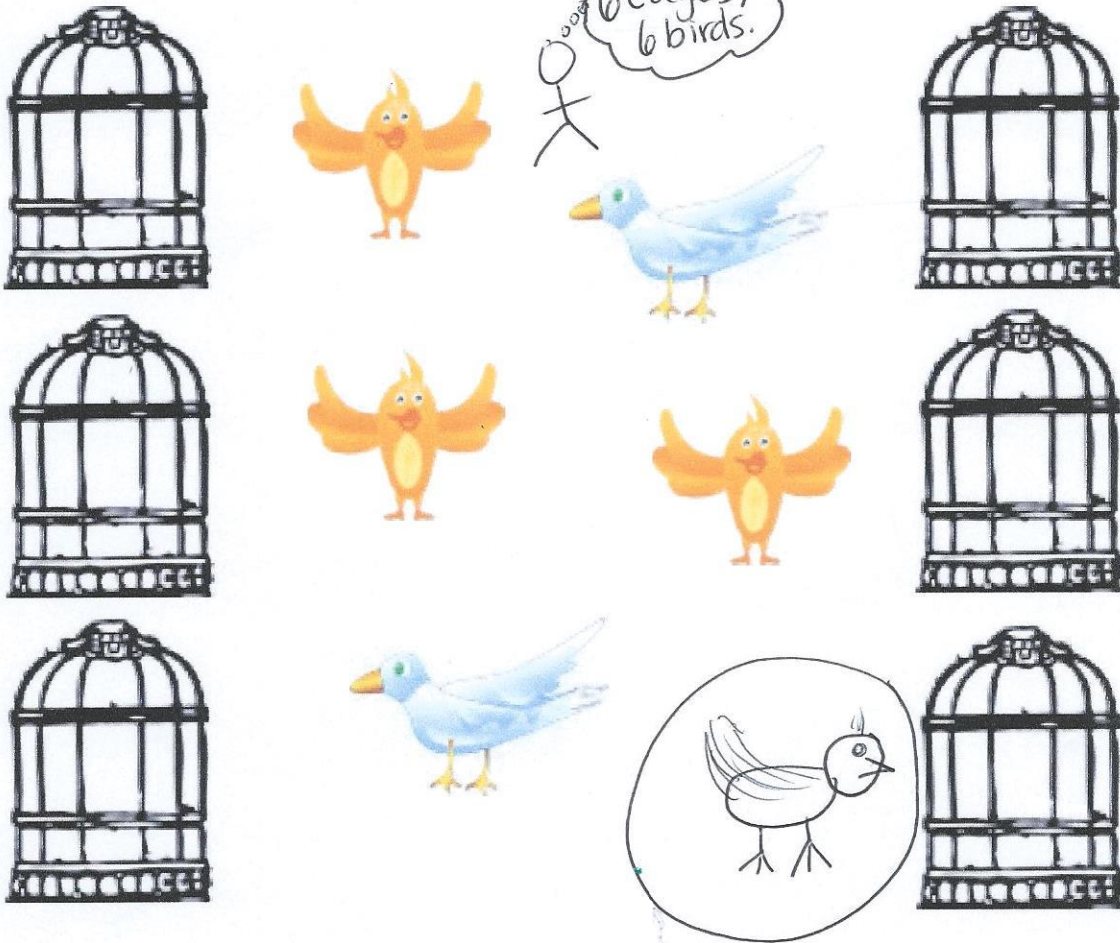
Homework Key

1 bird drawn

5 dogs drawn; fewer than 5 doghouses drawn; 5 bones drawn

Homework Samples

Draw another bird so there are the same number of birds as bird cages.



Grade K Module 3 Topic F

Comparison of Sets Within 10

Focus Standards:

- K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)
- K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.

Instructional Days Recommended: 5

Topic F opens with students shifting from comparison of lengths to comparison of numbers. As students build their confidence by directly comparing the lengths of a pencil and a crayon, they increase their readiness in later grades to indirectly compare length units. “The pencil is longer than the crayon because 7 cubes are more than 4 cubes.”

In Lesson 20, students relate *more* and *less* to length: “A stick of 7 cubes is longer than a stick of 3 cubes; 7 is more than 3. A stick of 3 cubes is shorter than a stick of 7 cubes; 3 is less than 7.”

In Lesson 21, students take two sticks, break them into cubes, and compare the sets. “Which set has more objects? This set has more than that set.”

In Lessons 22–24, students create and identify sets that have the same number of objects, 1 more object, and 1 fewer object.

**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 20

Objective: Relate *more* and *less* to length.

Homework Key

3 beads colored blue; more than 3 beads colored red; answers will vary.

5 beads colored green; fewer than 5 beads colored yellow; answers will vary.

2 beads colored brown; more than 2 beads colored blue; answers will vary.

9 beads colored red; fewer than 9 beads colored green; answers will vary.

Chain with more than 3 beads but fewer than 10 beads drawn

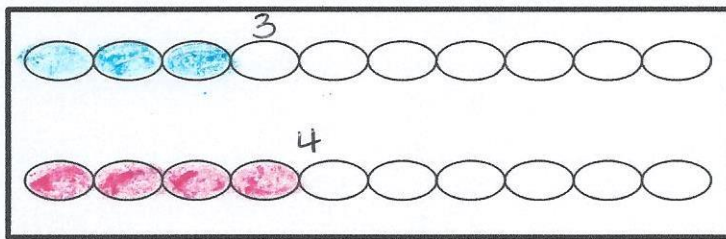
Chain with fewer than 10 beads but more than 4 beads drawn

Homework Samples

On the first chain, color the first 3 beads blue.

On the next chain, color more than 3 beads red.

How many beads did you color red? Write the number in the box.



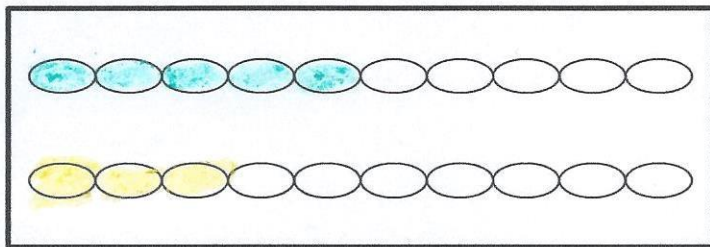
4

4 red beads is more than 3.

On the first chain, color the first 5 beads green.

On the next chain, color fewer than 5 beads yellow.

How many beads did you color yellow? Write the number in the box.



3

3 yellow beads is fewer than 5.

Lesson 21

Objective: Compare sets informally using *more*, *less*, and *fewer*.

Homework Key



Set of bicycles circled

Set of children circled

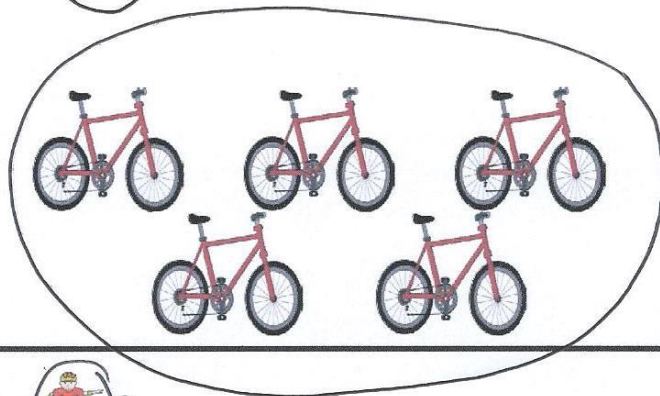
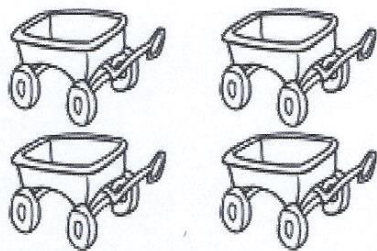
Set of moons circled



5 books drawn; some apples drawn; answers may vary.

Homework Samples

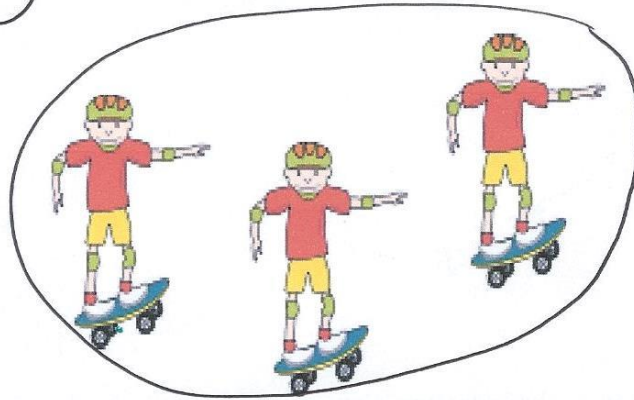
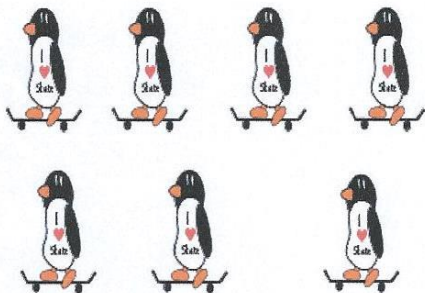
Which has more? The  or  ?



Circle the set that has more.



Which has fewer? The  or  ?

Circle the set that has fewer.



Which has fewer? The  or  ?

Circle the set that has fewer.



Lesson 22

Objective: Identify and create a set that has the same number of objects.

Homework Key

8 nests drawn;

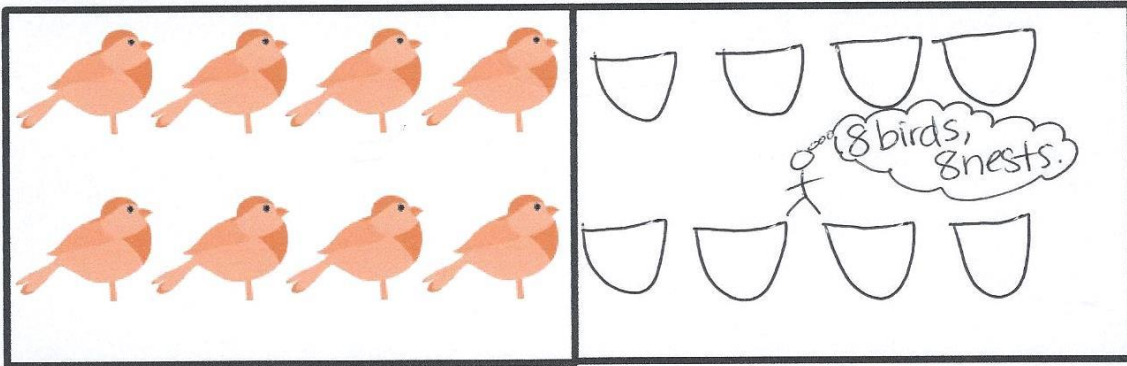
6 trees drawn;

10 bananas drawn;

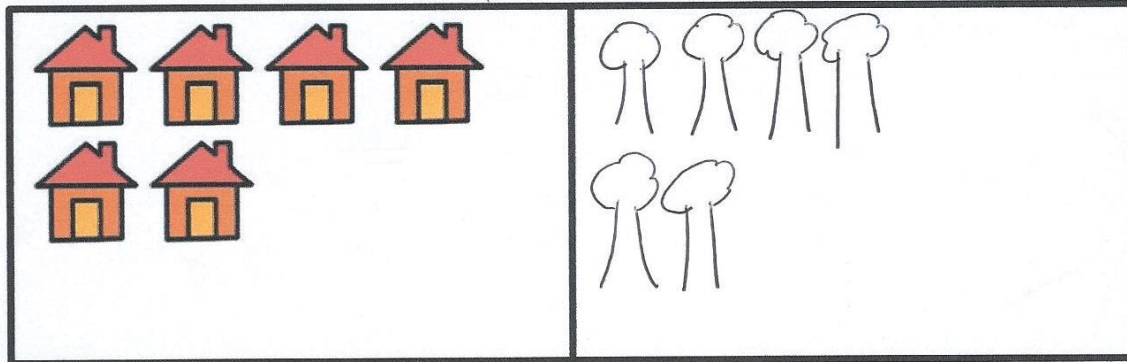
Some pencils and an equal number of crayons drawn

Homework Samples

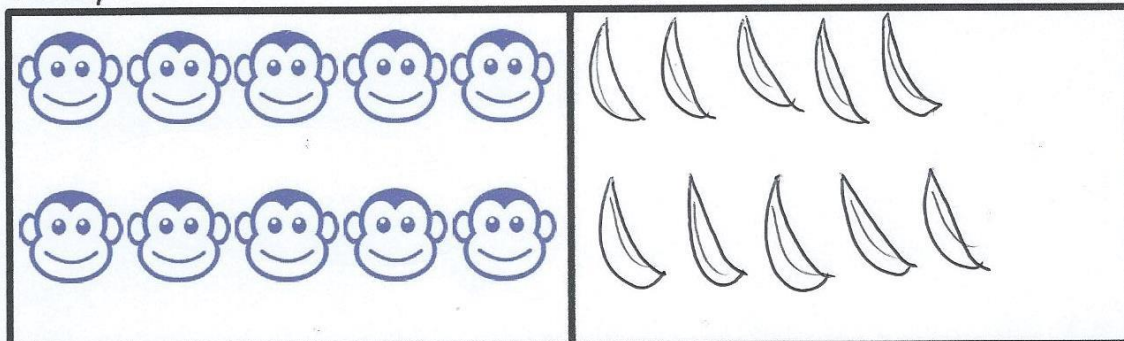
Count the birds. In the next box, draw the same number of nests as birds.



Count the houses. In the next box, draw the same number of trees as houses.



Count the monkeys. In the next box, draw the same number of bananas as monkeys.



Lesson 23

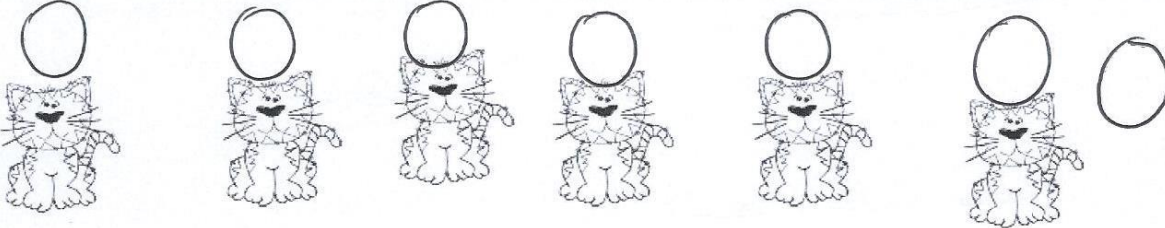
Objective: Reason to identify and make a set that has 1 more.

Homework Key

6; 7 balls drawn; 7

9; 10 peanuts drawn; 10

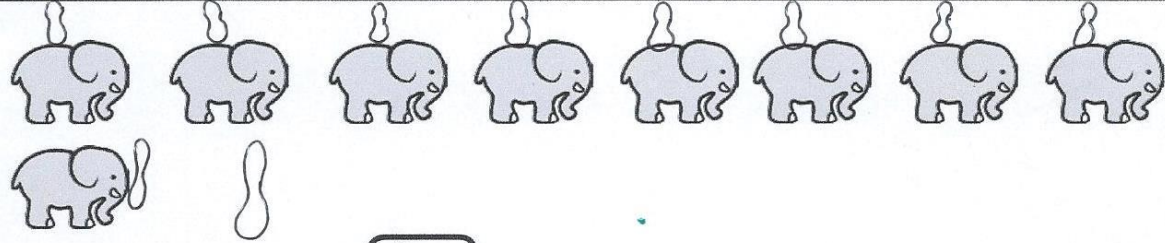
Homework Samples

A row of six cartoon cats, each with a ball above its head. To the right of the sixth cat is a single ball.

How many cats?

Draw a ball for every cat and 1 more ball.

How many balls?

A row of eight cartoon elephants. Below the first elephant is a peanut. To the right of the first peanut is another peanut.

How many elephants?

Draw a peanut for every elephant and 1 more peanut.

How many peanuts?

Lesson 24

Objective: Reason to identify and make a set that has 1 less.

Homework Key

5; 4 circles drawn, 4

7; 6 circles drawn, 6

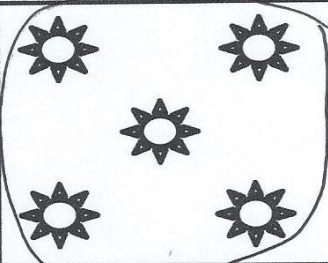

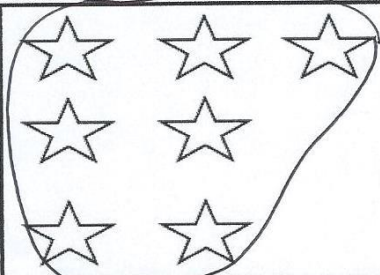
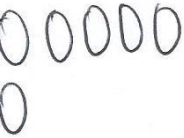
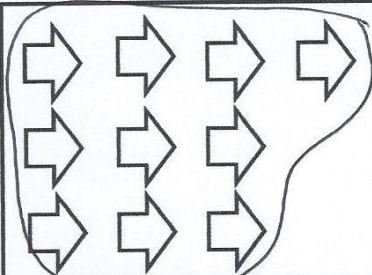
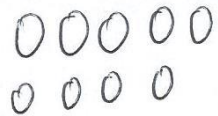
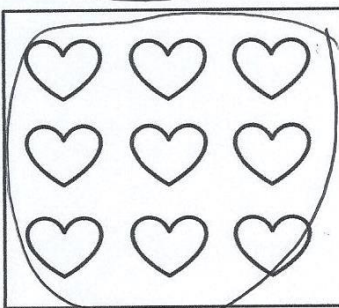
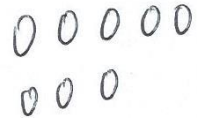
10; 9 circles drawn, 9

9; 8 circles drawn, 8

Homework Samples

Count the set of objects, and write how many in the box.

Draw a set of circles that has 1 less, and write how many in the box. As you work, use your math words *less than*.

	<input type="text" value="5"/>		<input type="text" value="4"/>
	<input type="text" value="7"/>		<input type="text" value="6"/>
	<input type="text" value="10"/>		<input type="text" value="9"/>
	<input type="text" value="9"/>		<input type="text" value="8"/>

Grade K Module 3 Topic G

Comparison of Numerals

Focus Standards:

- K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)
- K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.

Instructional Days Recommended: 4

Topic G is a bridge that enables students to compare numerals by connecting number to length. In Lessons 25 and 26, students work with linear configurations to match and count to see that “7 is more than 3, 3 is less than 7, and 5 is equal to 5.”

In Lessons 26 and 27, students look for and find strategies to compare sets of objects in various configurations.

Finally, in Lesson 28, students visualize quantities as they compare numerals without using materials, a skill that will be fine-tuned throughout the balance of the Kindergarten year.

**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 25

Objective: Match and count to compare a number of objects. State which quantity is more.

Homework Key



5; 6; 6; 5

7; 5; 7; 5



5; 6; 6; 5

Homework Samples

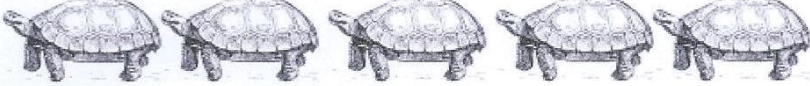
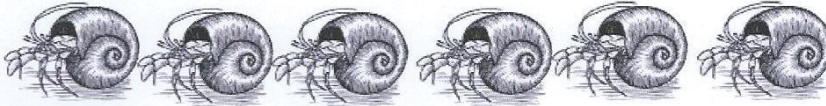
Count the objects in each line. Write how many in the box. Then, fill in the blanks below.

	<input type="text" value="5"/>
	<input type="text" value="6"/>

6 is more than 5.

	<input type="text" value="7"/>
	<input type="text" value="5"/>

7 is more than 5.

	<input type="text" value="5"/>
	<input type="text" value="6"/>

6 is more than 5.

Lesson 26

Objective: Match and count to compare two sets of objects. State which quantity is less.

Homework Key


9; 8; 8; 9

8; 10; 8; 10

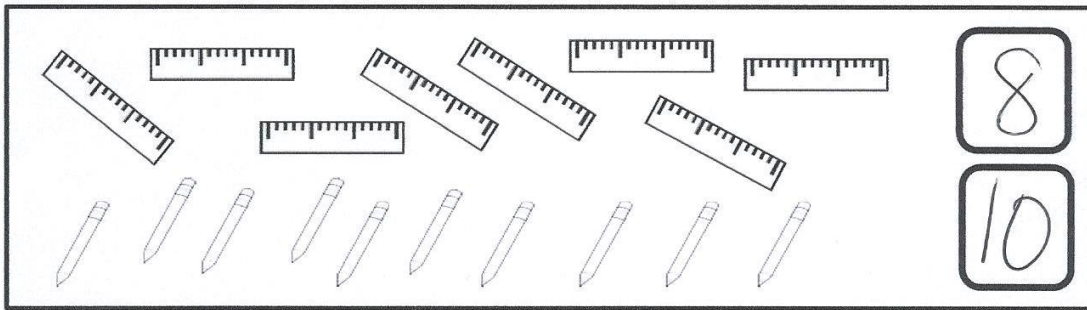
7; 9; 7; 9

Homework Samples

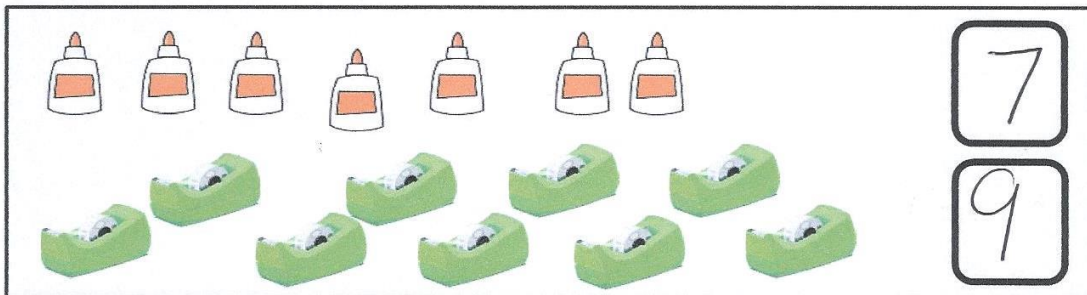
Count the objects in each line. Write how many in the box. Then, fill in the blanks below.



8 is less than 9.



8 is less than 10.



7 is less than 9.

Lesson 27

Objective: Strategize to compare two sets.

Homework Key

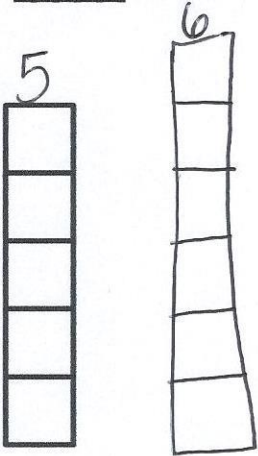
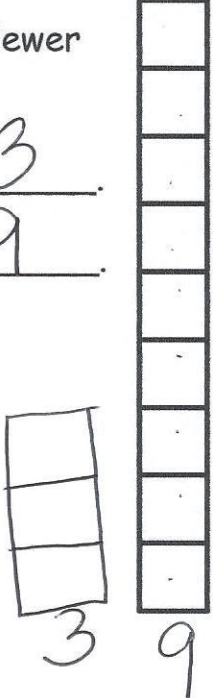
Tower with more than 5 cubes drawn; answers will vary.

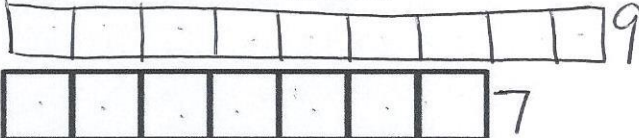
Tower with fewer than 9 cubes drawn; answers will vary.

Train with more than 7 cubes drawn; answers will vary.

Tower and another tower with more cubes drawn; answers will vary.

Homework Samples

<p>Draw a tower with more cubes.</p> <p><u>6</u> is more than <u>5</u>.</p> 	<p>Draw a tower with fewer cubes.</p> <p><u>9</u> is more than <u>3</u>.</p> <p><u>3</u> is less than <u>9</u>.</p> 
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<p>Draw a train with more cubes.</p> <p><u>9</u> is more than <u>7</u>.</p> <p><u>7</u> is less than <u>9</u>.</p> 

Lesson 28

Objective: Visualize quantities to compare two numerals.

Homework Key

7; 4; 4; 7

10; 9; 9; 10

8; 6; 6; 8

5; 4; 4; 5

Answers will vary.

Homework Samples

Visualize the number in Set A and Set B. Write the number in the sentences.

7
Set A

4
Set B

Draw dots to help you if need be.

7 is more than 4.

4 is less than 7.

9
Set A

10
Set B

10 is more than 9.

9 is less than 10.

Grade K Module 3 Topic H

Clarification of Measurable Attributes

Focus Standards:

- K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Instructional Days Recommended: 4

Module 3 culminates with a series of three measurement and comparison exploration tasks. In Lesson 29, students compare volume by moving a constant amount of colored water among containers of different shapes. In Lesson 30, students use balls of clay that weigh the same amount, as measured in cubes on the balance scale, to make different sculptures. They see that the same amount of clay can take various forms.

Students are challenged to plan and draw a building in Lesson 31. They compare the height of their building to that of their peers and to a linking cube stick of 10. Students then arrange their buildings to make a classroom city. When they complete the lesson, they have a new awareness of the constructions in their community.

In Module 2, students explored shapes; in Module 3, they explore the height of those shapes. For the final lesson before the End-of-Module Assessment, students consider the different measurable attributes of single items such as a water bottle, a dropper, and a juice box, as well as tools they might use to measure those attributes.

Lesson 29

Objective: Observe cups of colored water of equal volume poured into a variety of container shapes.

Homework Key

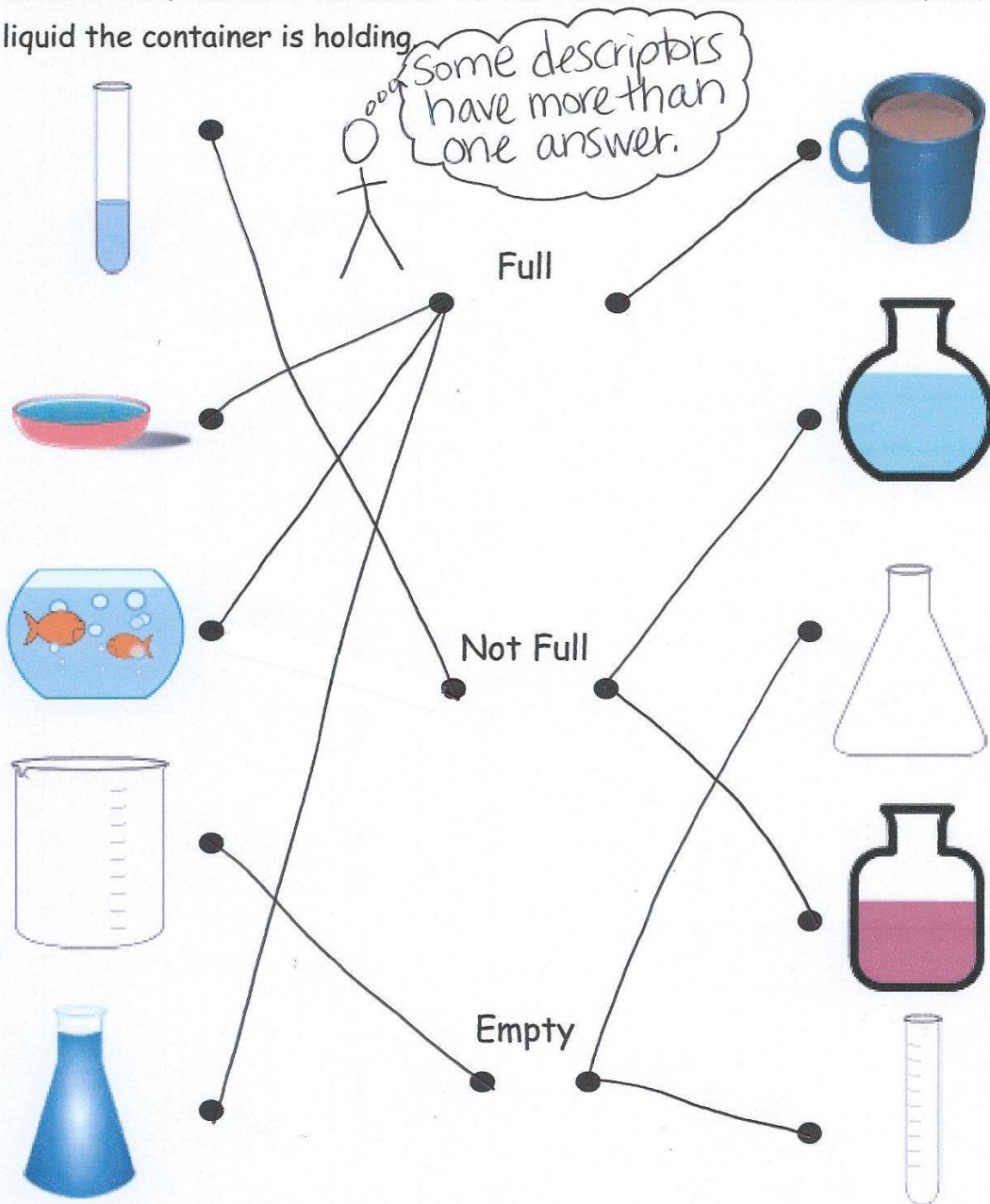
Line drawn from 4 full containers to *Full*

Line drawn from 3 partially full containers to *Not Full*

Line drawn from 3 empty containers to *Empty*

Homework Samples

Draw a line from each container to the word that describes the amount of liquid the container is holding.



Lesson 30

Objective: Use balls of clay of equal weights to make sculptures.

Homework Key

Apples colored per directions

4; 6

2; 8

7; 3

1; 9

9; 1

3; 7

Homework Samples

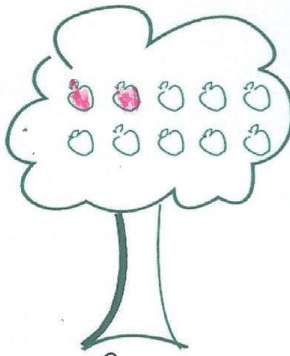
Color 4 apples.



I colored 4 apples.

I need to color 6 more to make 10.

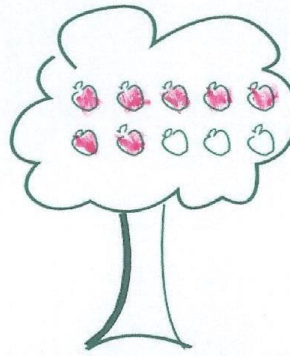
Color 2 apples.



I colored 2 apples.

I need to color 8 more to make 10.

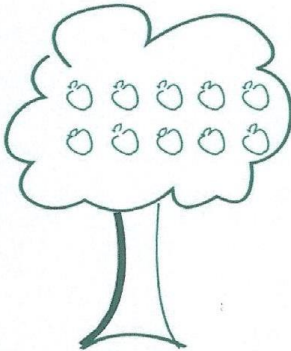
Color 7 apples.



I colored 7 apples.

I need to color 3 more to make 10.

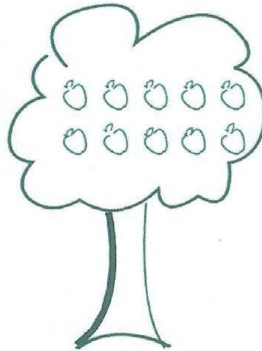
Color 1 apple.



I colored apples.

I need to color more to make 10.

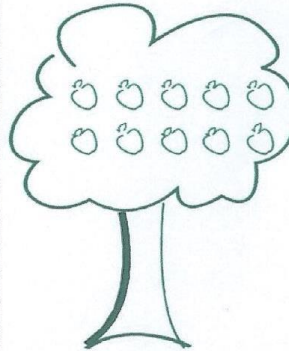
Color 9 apples.



I colored apples.

I need to color more to make 10.

Color 3 apples.



I colored apples.

I need to color more to make 10.

Combinations to 10 are very useful for students when they start addition.

Lesson 31

Objective: Use benchmarks to create and compare rectangles of different lengths to make a city.

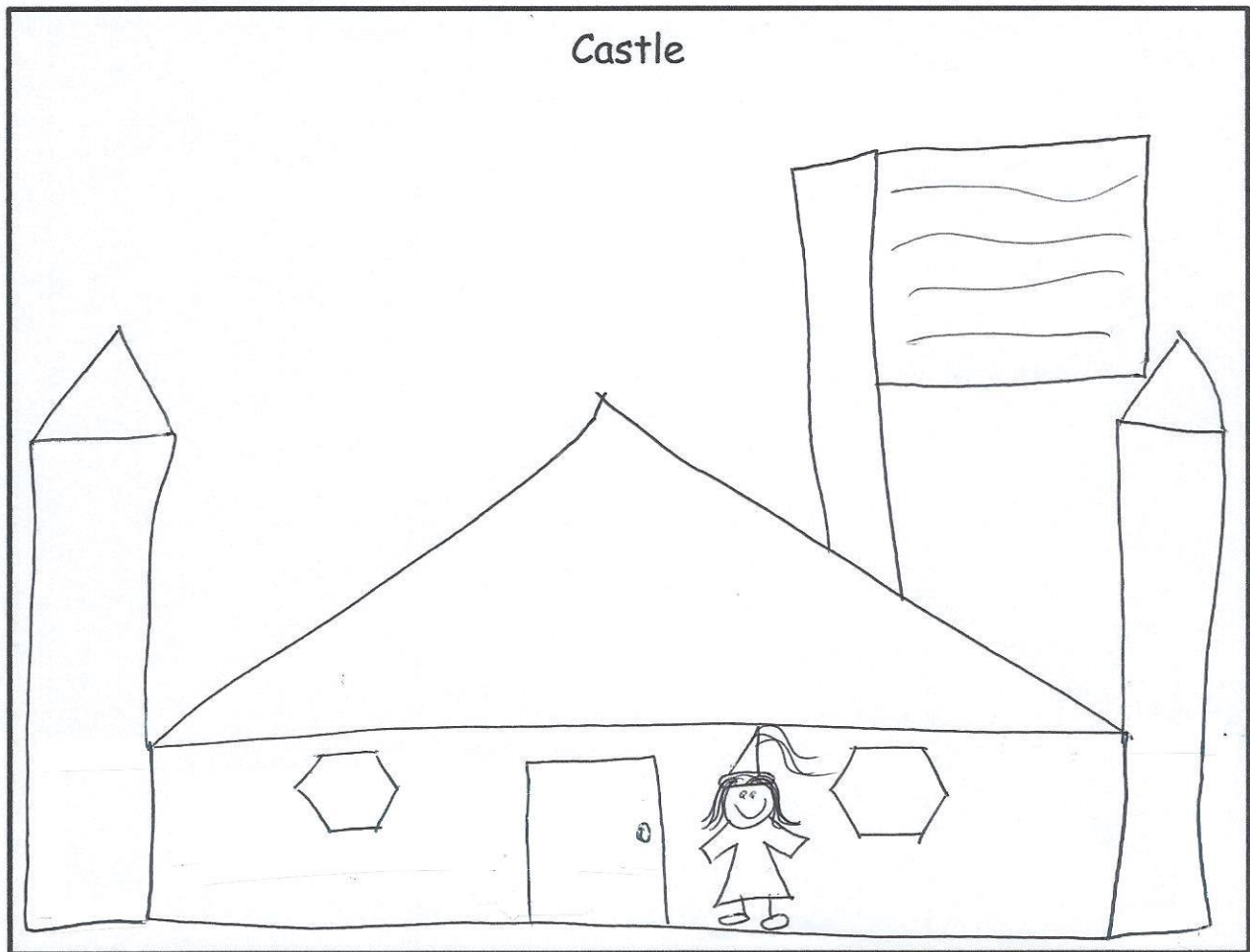
Homework Key

Castle composed of various shapes drawn

Homework Samples

Read the following directions to your child to make a castle:

- ✓ Draw a rectangle as long as a spoon.
- ✓ Draw another rectangle on each side of the rectangle you just made.
- ✓ Draw a triangle on top of each rectangle to make towers shorter than your hand.
- ✓ Draw 1 rectangle flag pole as long as your pointer finger.
- ✓ Draw 1 square flag as long as your pinky.
- ✓ Draw a door as long as your thumb.
- ✓ Draw 2 hexagon windows each as long as a fingernail.
- ✓ Draw a prince or princess in your castle.



Lesson 32

Objective: Culminating task – describe measurable attributes of single objects.

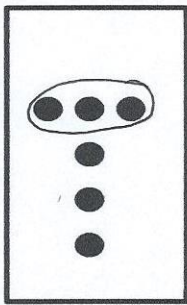
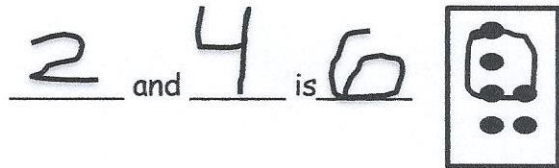
Homework Key

Answers will vary.

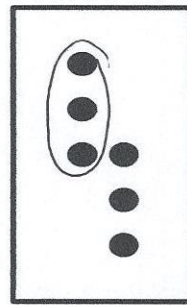
Homework Samples

The homework is a review of fluency skills from Module 3.

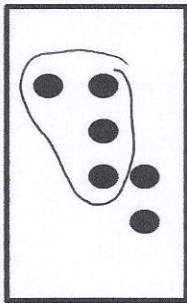
Circle a group of dots. Then, fill in the blanks to make a number sentence.



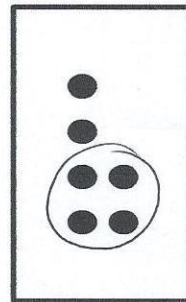
3 and 3 is 6.



3 and 3 is 6.



4 and 2 is 6.



2 and 4 is 6.