

TEKS for Mathematics “Rapid” Assessment: Grade K

<p>K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system.</p>	<p>K(2)(B) The student is expected to read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.</p> <p>K(2)(C) The student is expected to count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.</p>
<p>Materials</p> <ul style="list-style-type: none"> • 20 counters 	
<p>Procedure: Provide students with counters.</p> <ol style="list-style-type: none"> 1. Create a set of 5 counters. 2. Create a set of 9 counters. 3. Create a set of 14 counters. 4. Create a set of 18 counters. <p><i>This activity may be repeated using different numbers from 0 to 20. You may also show the student written numbers to prompt him or her to create a set of counters.</i></p>	
<p>Check Student’s Responses:</p>	<p>Check Student’s Strategies:</p>
<p>1. The student created a set with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 5 counters <input type="checkbox"/> _____ counters 	<p>The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counted counters one at a time <input type="checkbox"/> Pushed aside counters or pointed to counters <input type="checkbox"/> Other: <p>Notes:</p>
<p>2. The student created a set with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 9 counters <input type="checkbox"/> _____ counters 	
<p>3. The student created a set with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 14 counters <input type="checkbox"/> _____ counters 	
<p>4. The student created a set with:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 18 counters <input type="checkbox"/> _____ counters 	

K(2)(B) The student is expected to read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.

K(2)(C) The student is expected to count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **counted one object at a time and counted aloud**. Consider whether or not:
 - The student repeated the last number in the counting sequence (e.g., 7...8...**8**).
 - The student understands that each counting word corresponds to one object AND the total number of all objects counted up. This is an aspect of cardinality—that the last number indicates how many.

To assess this understanding, present the student with a given number of counters. Say, “Here are six counters. Please give six counters to [another student].” Observe the student’s strategy.

- The student **pushed aside or pointed at objects, then gave you the entire group of objects**. If the student recognizes that the number in a set remains the same even if the objects are moved into different formations, he or she may be ready to create sets of given sizes beyond 20.
- The student **created the sets in what appears to be an arbitrary way**. The student may need additional support.

A teaching strategy may involve asking the student to create small sets of objects, two or three, and gradually increasing the number when the student appears ready.

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<p>Materials</p> <ul style="list-style-type: none"> • 20 counters 	
<p>Procedure: Create set of counters in random arrangements. For example, 8 counters, 10 counters, 14 counters, 18 counters, 20 counters, etc.</p> <p>How many counters are in this set?</p> <p><i>The student may respond in verbal or written form.</i></p> <p><i>This activity may be repeated using different numbers or by creating different arrangements of the same number.</i></p>	
<p>Check Student’s Response:</p>	
<p><input type="checkbox"/> Correct <input type="checkbox"/> Another Number: _____ <input type="checkbox"/> No response</p>	
<p>Check Student’s Strategies:</p>	
<p>The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counted objects by touching each one once and only once – but did not say numbers out loud. <input type="checkbox"/> Touched objects and said counting numbers out loud for each one. <input type="checkbox"/> Said number words aloud but did not use one-to-one correspondence to accurately count the objects in the set. <input type="checkbox"/> Counted one or more objects more than once. <input type="checkbox"/> Rearranged objects into a different formation then counted each object only once. <input type="checkbox"/> Said counting numbers aloud without touching objects. <input type="checkbox"/> Looked at objects without touching them. <input type="checkbox"/> None observed. 	
<p>Notes:</p>	

K(2)(B) The student is expected to read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.

K(2)(C) The student is expected to count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **looked at the objects without touching them**. Consider how he or she figured out how many objects many were in the set:
 - The student counted silently.
 - The student looked at a subset, and immediately recognize that a group of 4 objects was 4 objects and used counting on from the number 4.
 - The student used subitizing.

A teaching strategy might include teaching students ways to check their answers, in this case, by recounting objects one-by-one.
- The student **touched objects and said counting numbers out loud for each one**. If the student can do this kind of enumeration, he or she may be ready to solve simple addition problems by counting all or counting on.

To assess readiness for addition, once the student has counted a set of objects, add one or two more and ask, “How many are there now?” Prompt the student to justify his or her response.
- The student **arranged the objects into a line** (or an organized arrangement). Consider whether or not the student understands that when an object(s) are moved the last number tells the number of objects in the set regardless of their arrangement or order.
- The student **said the counting numbers aloud**. Consider the following:
 - The student repeated the last number in the counting sequence (e. g, 7...8...8 [objects]). Consider whether he or she understand that each counting word corresponds to one object AND the total number of all objects counted.

A teaching strategy may involve challenging the student to determine how many objects are in a set after counting. For example, ask the student to count the number of stickers on an index card; once the student has counted the number of stickers, hide the card and ask, “How many stickers am I hiding?”
- There were **no strategies were observed**.

Follow up with an additional task, classroom observation, or questioning may allow you to determine how the student determined the answer.

K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system.

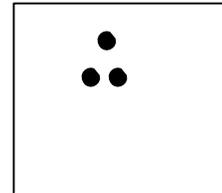
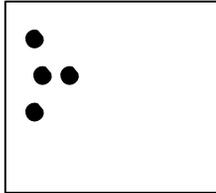
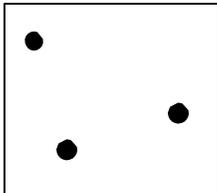
K(2)(G) The student is expected to compare sets of objects up to at least 20 in each set using comparative language.

Materials

- Three pieces of colored paper
- Approximately 20 counters

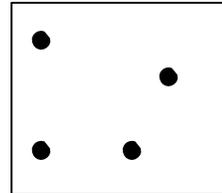
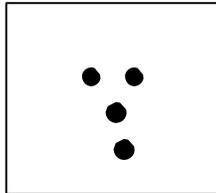
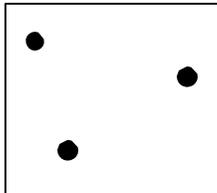
Procedure: Arrange sets of counters, as shown below, on a different pieces of colored paper.

1.



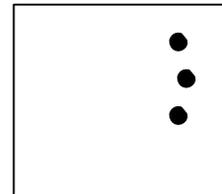
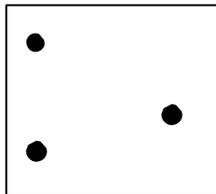
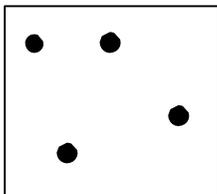
Which set has more objects?

2.



Which set has fewer objects?

3.



Which sets have the same number of objects?

This activity may be repeated using different numbers of objects up to 10.

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Check Student’s Responses:	Check Student’s Strategies:
<p>1. The student identified:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The set with more objects <input type="checkbox"/> The set on which the objects were most spread out <input type="checkbox"/> The set with less objects <input type="checkbox"/> Other: <p>2. The student identified:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The set with less objects <input type="checkbox"/> The set on which the objects were least spread out <input type="checkbox"/> The set with more objects <input type="checkbox"/> Other: <p>3. The student identified:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The sets with the same number of objects <input type="checkbox"/> Two sets not having the same number of objects <input type="checkbox"/> Other: 	<p>1. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counted each object on each mat <input type="checkbox"/> Recognized the quantity without counting (subitizing) <input type="checkbox"/> Other: <p>2. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counted each object on each mat <input type="checkbox"/> Recognized the quantity without counting (subitizing) <input type="checkbox"/> Other: <p>3. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counted each object on each mat <input type="checkbox"/> Recognized the quantity without counting (subitizing) <input type="checkbox"/> Other:
<p>Notes:</p>	

<p>K(2)(G) The student is expected to compare sets of objects up to at least 20 in each set using comparative language.</p>	<p>Possible interpretations, issues to follow up on, and implications for teaching</p>
<p>What did you observe?</p> <ul style="list-style-type: none"> • The student counted each object in each set and made comparisons accurately. He or she may be ready to compare sets of objects based on quantity. • The student counted each object in each set but did not always make comparisons accurately. The student may have correctly counted each object in each set, but still declared that the set of objects most spread out was the most. You may need to determine: <ul style="list-style-type: none"> ▪ The student’s understanding of cardinality (the last number counted in a set of objects is equal to the number of objects in the set). ▪ The student’s understanding of conservation (the number in a set remains the same regardless of the arrangement or order). <p><i>To assess this understanding, ask the student to count the objects, then move the objects around before asking the student to tell you the number of objects in the set. You may find that many students insist on counting and recounting the objects even though none were added or taken away from the set.</i></p> <p><i>A teaching strategy may include asking students to share their reasoning after being asked to count a set of objects placed in a variety of positions.</i></p> • The student did not count objects aloud. Consider whether or not he or she: <ul style="list-style-type: none"> ▪ Mentally counted the objects. ▪ Made judgments based on the amount of space each set of objects covered, rather than making the comparison based on the number of objects in each set. <p><i>A teaching strategy may include providing the student with experiences comparing sets of objects that take up different amounts of space.</i></p> • If no strategies were observed, you might: <ul style="list-style-type: none"> ▪ Ask the student how he or she decided. ▪ Look for additional opportunities to determine if the student understands mathematical language such as more, same, and less. <p><i>More than and same as are usually understood before less than. Modeling this mathematical language in various contexts such as giving the student three objects and ask them to create a set with two more objects.</i></p> 	

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K(3) Number and operations. The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems.	K(3)(A) The student is expected to model the action of joining to represent addition and the action of separating to represent subtraction.
Materials	
<ul style="list-style-type: none"> • 10 counters 	
<p>Procedure: Provide students with counters.</p> <p>Ask students to solve each of the following problems. Ask students to justify his or her answer by answering the question, “How do you know?”</p> <ol style="list-style-type: none"> 1. You have 2 pencils, and I give you 1 more. How many pencils will you have? 2. There are 3 books on the table. Your mom puts 2 more books on the table. How many books will be on the table? 3. You have 5 french fries, and your friend gives you 2 more. How many french fries will you have? 4. There are 6 cows in the barn and 3 cows in the field. How many cows are there? 5. There are 2 birds in the tree, and 1 flies away. How many birds are left? 6. There are 5 cars in the parking lot, and 2 drive away. How many cars are left? 7. You have 6 apples and eat 2 of them. How many apples do you have left? 8. The tree has 8 apples, and you pick 5 apples off the tree. How many apples does the tree have left? <p><i>This activity may be repeated using different numbers or different context.</i></p>	
Check Student’s Responses:	Check Student’s Strategies:
<ol style="list-style-type: none"> 1. $2 + 1$ <ul style="list-style-type: none"> <input type="checkbox"/> 3 <input type="checkbox"/> _____ <input type="checkbox"/> The student could justify the answer. 	<ul style="list-style-type: none"> <input type="checkbox"/> Counted aloud <input type="checkbox"/> Used the counters <input type="checkbox"/> Used his or her fingers <input type="checkbox"/> Other:
<ol style="list-style-type: none"> 2. $3 + 2$ <ul style="list-style-type: none"> <input type="checkbox"/> 5 <input type="checkbox"/> _____ <input type="checkbox"/> The student could justify the answer. 	<ul style="list-style-type: none"> <input type="checkbox"/> Counted aloud <input type="checkbox"/> Used the counters <input type="checkbox"/> Used his or her fingers <input type="checkbox"/> Other:
<ol style="list-style-type: none"> 3. $5 + 2$ <ul style="list-style-type: none"> <input type="checkbox"/> 7 <input type="checkbox"/> _____ <input type="checkbox"/> The student could justify the answer. 	<ul style="list-style-type: none"> <input type="checkbox"/> Counted aloud <input type="checkbox"/> Used the counters <input type="checkbox"/> Used his or her fingers <input type="checkbox"/> Other:

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<p>4. $6 + 3$</p> <p><input type="checkbox"/> 9</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> The student could justify the answer.</p>	<p><input type="checkbox"/> Counted aloud</p> <p><input type="checkbox"/> Used the counters</p> <p><input type="checkbox"/> Used his or her fingers</p> <p><input type="checkbox"/> Other:</p>
<p>5. $2 - 1$</p> <p><input type="checkbox"/> 1</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> The student could justify the answer.</p>	<p><input type="checkbox"/> Counted aloud</p> <p><input type="checkbox"/> Used the counters</p> <p><input type="checkbox"/> Used his or her fingers</p> <p><input type="checkbox"/> Other:</p>
<p>6. $5 - 2$</p> <p><input type="checkbox"/> 3</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> The student could justify the answer.</p>	<p><input type="checkbox"/> Counted aloud</p> <p><input type="checkbox"/> Used the counters</p> <p><input type="checkbox"/> Used his or her fingers</p> <p><input type="checkbox"/> Other:</p>
<p>7. $6 - 2$</p> <p><input type="checkbox"/> 4</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> The student could justify the answer.</p>	<p><input type="checkbox"/> Counted aloud</p> <p><input type="checkbox"/> Used the counters</p> <p><input type="checkbox"/> Used his or her fingers</p> <p><input type="checkbox"/> Other:</p>
<p>8. $8 - 5$</p> <p><input type="checkbox"/> 3</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> The student could justify the answer.</p>	<p><input type="checkbox"/> Counted aloud</p> <p><input type="checkbox"/> Used the counters</p> <p><input type="checkbox"/> Used his or her fingers</p> <p><input type="checkbox"/> Other:</p>
<p>Notes:</p>	

K(3)(A) The student is expected to model the action of joining to represent addition and the action of separating to represent subtraction.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **counted aloud**. This is an appropriate strategy.
- The student **used his or her fingers**. This is a reliable strategy for small numbers, but it is not efficient, particularly for larger numbers.
- The student **used counters**. Consider how he or she used the counters to solve the problem:
 - The student counted from 1.
 - The student counted on from the larger number (e.g., for ‘5+2’ she selected 5 blocks and counted five, six, seven).

How do you know?

After a student solves a problem, regardless of accuracy, ask the student to justify his or her response in order to further understand the student’s thinking.

TEKS for Mathematics “Rapid” Assessment: Grade K

<p>K(5) Algebraic reasoning. The student applies mathematical process standards to identify the pattern in the number word list.</p>	<p>K(5)(A) The student is expected to recite numbers up to at least 100 by ones and tens beginning with any given number.</p>
<p>Materials: None</p>	
<p>Procedure: Ask the student to count orally.</p> <ol style="list-style-type: none"> 1. Count as high as you can by ones. 2. Count by tens to 100. 3. Start at 25 and count to 50. 4. Start at 40 and count to 100. <p><i>This activity may be repeated using different beginning and ending numbers.</i></p>	
<p>Check Student’s Responses:</p>	
<p>1. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counts by ones to _____ without errors. <input type="checkbox"/> Counts by ones to _____ with one error. 	
<p>2. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Counts by tens to _____ without errors. <input type="checkbox"/> Counts by tens to _____ with one error. 	
<p>3. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Can count by ones from 25 to 50 without errors. <input type="checkbox"/> Can count by ones from 25 to 50 with one error. <input type="checkbox"/> Cannot begin at 25 and count to 50 by ones. 	
<p>4. The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Can count by tens from 40 to 100 without errors. <input type="checkbox"/> Can count by tens from 40 to 100 with one error. <input type="checkbox"/> Cannot begin at 40 and count to 100 by tens. 	
<p>Notes:</p>	

K(5)(A) The student is expected to recite numbers up to at least 100 by ones and tens beginning with any given number.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **skipped numbers**.
 - Even if a student often forgets to say twelve, or some other number, encourage him or her to continue counting as high as he or she can. Students who have trouble remembering “teen” numbers are often capable of counting well above the 20s.

A teaching strategy would include providing the student with more practice counting aloud.

- The student **paused at each multiple of 10**. For example if the student says, “thirty-niiiiiiiine” and seems stuck, say, “ten, twenty, thirty....” This may be all the student needs to remind him or her that forty comes next.

A teaching strategy may involve providing the student with practice starting to count from 19 or a number other than one.

<p>K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties.</p>	<p>K(6)(A) The student is expected to identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles.</p>
<p>Materials</p> <ul style="list-style-type: none"> A variety of two-dimensional shapes (circles, triangles, rectangles, and squares). Include different sizes of shapes and common and uncommon shapes (e.g. right triangle, equilateral triangle, etc.). <div style="text-align: center;">  </div>	
<p>Procedure: Show the student a shape.</p> <p>What shape is this? How can it be described?</p> <p><i>Repeat for other shapes.</i></p>	
<p>Check Student’s Responses:</p>	<p>Check Student’s Strategies:</p>
<p>The student correctly identified following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Circles <input type="checkbox"/> Triangles <input type="checkbox"/> Rectangles <input type="checkbox"/> Squares <p>The student did NOT correctly identify the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Circles <input type="checkbox"/> Triangles <input type="checkbox"/> Rectangles <input type="checkbox"/> Squares 	<p>The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Correctly identifies all shapes regardless of size or type <input type="checkbox"/> Correctly identifies different sized shapes but not uncommon shapes <input type="checkbox"/> Other:
<p>Notes:</p>	

K(6)(A) The student is expected to identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **correctly identified all the shapes**. This student may be ready to describe and compare the identified shapes.
- The student **only identified geometric figures that are common or prototypical**. This student may need additional experience identifying uncommon or atypical shapes.

A teaching strategy might include asking the student to show you a shape such as a triangle. Turn or flip the shape and ask the student, “Is this still a triangle?” Continue to turn and flip the shape until the student recognizes that it is still a triangle regardless of the orientation of the shape. Ask the student, “What makes this shape a triangle?” If the student correctly describes the triangle as having three sides, prompt the student to find all of the other shapes that have only three sides. If the student cannot describe an attribute of the triangle, explain that all triangles have three sides and three corners or vertices as you point and count the sides and vertices.

<p>K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties.</p>	<p>K(6)(E) The student is expected to classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size.</p>
<p>Materials A variety of regular and irregular two-dimensional figures. Include different sizes of shapes and type of shapes (e.g. right triangle, equilateral triangle, etc.).</p> 	
<p>Procedure: Provide the student with a set of two-dimensional figures to sort.</p> <p>Sort these shapes into groups so that each group has shapes that are alike, have the same attribute. (Wait for response.) Why did you put these shapes in this group?</p> <p><i>Repeat the question for each group created.</i></p>	
<p>Check Student’s Responses:</p>	<p>Check Student’s Strategies:</p>
<ul style="list-style-type: none"> <input type="checkbox"/> The student sorted the shapes by the type of shape. <input type="checkbox"/> The student sorted the shapes by geometric attribute(s). Describe: <input type="checkbox"/> The student sorted the shapes without using geometric attributes (randomly or by color). 	<p>The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Identified the name of the shapes. <input type="checkbox"/> Described attributes of shapes using formal language. <input type="checkbox"/> Described attributes of shapes using informal language. <input type="checkbox"/> Other:
<p>Notes:</p>	

K(6)(E) The student is expected to classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **sorted the shapes based on geometric attributes**. Consider how the student sorted the shapes:
 - The student grouped the shape according to the name of the shapes.
 - The student grouped the shapes according to an attribute such as the number of sides, number of vertices (or corners), etc.
- The student **sorted the shapes randomly or by color**. The student may need additional support.

A teaching strategy may involve showing the student one shape (triangle) and asking them to find all of the shapes that are similar to it. Assist the student in finding all the shapes that have three sides and three corners or vertices.

- The student **described attributes of two-dimensional shapes using formal language**. Consider prior classroom instruction; if it is limited, it may be appropriate for students to use the word corners instead of vertices.
- The student **described attributes of two-dimensional shapes using informal language** (e.g. pointy thing or box).

A teaching strategy might include introducing or reviewing geometric language for the shapes by showing the student a shape and identifying and describing the sides and corners.

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K(6) Geometry and measurement. The student applies mathematical process standards to directly compare measurable attributes.	K(7)(B) The student is expected to compare two objects with a common measurable attribute to see which object has more or/less of the attribute and describe the difference.
<p>Materials</p> <ul style="list-style-type: none"> Two objects that differ in length (straws, string, etc.), weight (a block, a pencil, etc.), capacity (bucket, a drinking cup, etc.) 	
<p>Procedure: Place the objects in front of the student.</p> <p>Length: Which object is the longest? Which object is the shortest?</p> <p>Weight: Which object is the heaviest? Which object is the lightest?</p> <p>Capacity: Which object will hold more? Which object will hold less?</p> <p><i>The activity may be repeated using different objects or by including objects that are the same length, weight, or capacity.</i></p>	
Check Student’s Responses:	Check Student’s Strategies:
<p>Length:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The student identified the longest and shortest object. <input type="checkbox"/> The student did not identify the longest and shortest object. <p>Weight:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The student identified the heaviest and lightest object. <input type="checkbox"/> The student did not identify the heaviest and lightest object. <p>Capacity:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The student identified the item with the least and the most capacity. <input type="checkbox"/> The student did not identify the item with the last and most capacity. 	<p>The student:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Directly compared the objects by touching the objects. <input type="checkbox"/> Correctly compared the objects without touching the objects. <input type="checkbox"/> Seemed to choose answer the question by choosing the object randomly <input type="checkbox"/> Other: <p>Notes:</p>

K(7)(B) The student is expected to compare two objects with a common measurable attribute to see which object has more or/less of the attribute and describe the difference.

Possible interpretations, issues to follow up on, and implications for teaching

What did you observe?

- The student **correctly used direct comparisons to determine which object had more or less of the given attribute.** Ask this student to give examples of measurable attributes.
- The student **incorrectly used direct comparisons to determine which object had more or less of the given attribute.**

A teaching strategy may involve modeling for the student how to directly compare the objects based on length, weight, or capacity. Additionally, a teaching strategy for comparing length may involve asking the student to replicate the length of one of the objects by cutting a strip of paper or string to the same. A strategy for capacity may be to fill the smallest container to the very top with water or rice. Demonstrate that when the water or rice is poured into the larger container the container will not be filled to the very top.