Grade Level	Kindergarten	**Content Area**	Mathematics
Course Title (grades 9-12 Only)	NA		
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students have experience with comparing different objects and how they are similar and different based on their appearance. Students are able to compare objects verbally and identify measurable attributes such as length.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	Students will demonstrate, through hands-on academic experiences, mastery of mathematical concepts presented in each lesson. Students will be participating in higher level thinking and mathematical reasoning in order to "think outside of the box" and expand upon the building blocks of mathematics that have already been established.		
Standard Number and Description *List the Number* and full description for the Required Standard or Science Performance Objective listed in section A.6.*	**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.*		
Materials/Resources Needed	Lesson 1: textbook, composition journal, 12 oz. can, 2 liter bottle, jar of peanut butter, water bottle, chalk, colored pencils, markers, white board erasers, crayons, pencils, and homework worksheets . Lesson 2: pencil, pen, crayons, pens, glue sticks, game board pieces, and homework worksheets. Lesson 3: pencil, plastic cup, and ruler Lesson 4: scale, one pound, three pound, and five pound dumbbell weights, worksheet, and homework worksheet Summative Assessment: 12 oz red plastic cup with a flower on it, 12 oz blue plastic cup, a long, sharpened pencil with an eraser, a short, sharpened pencil with an eraser, medium-sized jar, small jar, sandal (taller than the shoe), shoe (shorter than the sandal)		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	Instructional Strategies The teacher will:	Student Activities The students will:
1	**Introduction/Review:** Hold up a textbook and a composition journal and ask students what makes these objects similar to and different from one another. Write responses on the chalkboard.	**Introduction/Review:** Respond with ways the books are similar and different. Discuss and review (with prompting from the teacher) what it means when things are similar to and different from each other. Provide examples of objects around the room and verbal explanations for why their chosen examples are similar and why they are different from each other.
	Demonstration: Display a 12 oz. can and a 2 liter bottle. Ask students to list the similarities and differences for these two objects. Pose this question: How do we know which object is taller? We can tell which one is taller with our eyes, but what else can we do to know which one is taller? What can we do to see if we are correct? After a few responses are given, demonstrate how to compare the heights of these objects, holding them right next to each other with the ends lined up. Say: Since I lined the objects together where the ends of both touch the table, I can see that the bottle is taller than the can and the can is shorter than the bottle. The bottle is taller because it is longer than the can. Display two new objects, a jar of peanut butter and a water bottle. Pose the same questions to students: How do we know which object is taller other than just seeing with our eyes? What can we do to see if we are correct? Demonstrate once again that the two objects' ends need to be lined up so we can see which one is taller and which is shorter. State that the water bottle is taller because it is longer than the can.	**Demonstration:** Respond to questions. **Interaction:** Explore the concept presented in this lesson with pairs of objects. Students are given pairs of objects to compare, such as a piece of chalk and a colored pencil, a marker and a white board eraser, or a crayon and a pencil. Present to the class which one is taller than and which one is shorter than the other. For example, if a student was assigned a marker and an eraser, that student should state that the marker is taller than the eraser and the eraser is shorter than the marker.

	Demonstration: Show the students two objects (a pencil and a pen) that are exactly the same height. Ask: which object is taller or shorter than the other object? Or are they the same height? How do you know? Listen to various responses and point out that these two objects are the same height because one is not taller than or shorter than the other.	Correctly line up the objects as previously demonstrated to prove which object is taller or shorter than the other. **Demonstration:** Respond to questions. **Interaction:** Engage in a scavenger hunt, searching the room to find for four objects. One pair should consist of a taller item and a shorter item, and one pair should be the same height. Present objects to the class and correctly demonstrate how to compare heights of the pairs. **Independent Practice:** Complete a worksheet showing pairs of items, some with differing heights, and some with the same height. Identify taller and shorter items and items of same heights. Find four items at home, one pair with differing heights and one with same heights. Record findings to present and share with the class the next day.
2	**Introduction and Demonstration:** Show the class a pencil and a plastic cup, holding them so that the ends line up. Ask a student to state which of these two objects is taller than and which is shorter than the other. (Correct answer: The plastic cup is taller.) Show how to measure with a ruler to see how long, tall, or wide different items are. Accurately measure both objects and record the lengths on the white board for the students to see. Move the pencil so the ends of these two objects are not lined up anymore and instead, the end of the pencil is lined up with the middle of the cup. Pose this question: Is the plastic cup still longer or is the pencil longer now? Are the pencil and the cup still the same height as before? Listen to student responses. Measure these two objects and record their lengths once again on the chalkboard. As students will be able to see, the height of these two objects have not changed.	**Review:** Share findings from the previous night's independent practice in the form of a discussion. **Introduction and Demonstration:** Respond to questions and discuss. **Interaction:** Find objects around the room to bring into the circle and share which one is taller than and shorter than the other object by correctly lining up the ends of each object. Share how when objects are not lined up at the ends it does not mean that the objects' height have changed; nor does it mean that now the object that was shorter is now taller than the other. Take turns measuring objects.

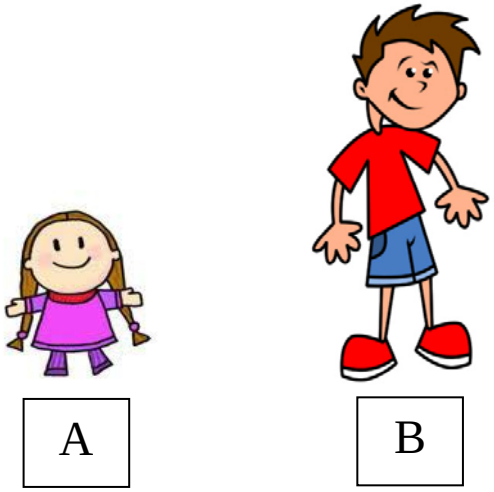
3	**Review:** Ask students to recall that we have been comparing items. Ask what kinds of things we have been comparing (pencil, cup, can, bottle, etc.). Ask how we were comparing them and discuss lining up ends of items and measuring items. **Introduction:** Pose these questions: What does it mean when something is heavier than something else? What does it mean when something is lighter? Write the words “heavy” and “light” on the chalkboard and ask the students to describe these words. Students can provide adjectives for these two words or examples of things that are heavy and light. Explain to students that a lighter object is something that is not as heavy as the other object they are comparing it to. **Demonstration:** Explain that we are able to see what objects or things are lighter or heavier than others based on how much they weigh. Pose this question: How can you figure out how much you weigh? Introduce a scale and tell students that the scale tells us how heavy or light something is: the greater the number of the weight, the heavier something is. Demonstrate this concept by showing a one pound, a three pound, and a five pound dumbbell. (Note: The number of weight should be on each of the dumbbells.) Ask for a volunteer to hold a one pound weight in one hand and a three point weight in the other hand. Ask the volunteer which is heavier. The three pound weight is heavier, since the number 3 is greater than the number 1. Point out the numbers on the weights. Ask for two volunteers to step on the scale and see how much they weigh. Record the weight of the two students on the chalkboard for the class to see. Write the pounds abbreviation (lbs.) and mention to the students that this is something we write down after the number to show that that is how much something weighs. Pose these questions: Which number is greater than the other? Which person is heavier? Which person is lighter?	**Review:** Respond to questions. **Introduction:** Respond to questions. **Demonstration:** Respond to questions. **Demonstration:** Volunteer to hold weights. Volunteer to be weighed on the scale. (Note: Two are chosen.) **Interaction:** Go on a scavenger hunt to find two items, comparing which feels heavier and which feels lighter. Share with the class. Weigh objects to compare. **Independent Practice:** Complete a worksheet where the weights of pairs of items are shown. Identify which the heavier and lighter of each pair.

Summative Assessment Items: Attach here.

Note: Summative Assessment questions will be read to the students aloud.

1. Look at these two cups I am holding. How are these two cups similar? (Note: One is a 12 oz red plastic cup, and one is a 12 oz blue plastic cup. They are the same size and same shape. The red one has a flower drawn on it.)
A. They both have the same height.
B. They both have pictures on them.
C. They both are the same color.

2. Look at these two pencils I am holding. How are these two pencils different from one another? (Note: Both pencils have erasers, both are sharpened, and one is longer than the other.)
A. One pencil is longer than the other.
B. One pencil is sharpened and the other is not.
C. One pencil has an eraser and one does not.



3. Look at this picture I am holding of two children. This is Child A (pointing to Child A, the girl) and this is Child B (pointing to Child B, the boy.) Which child is shorter than the other?
A. Child A
B. Child B

4. Look at this picture I am holding of two people. Are they the same height?
A. Yes
B. No

5. Look at the way I am holding these two jars. I want to compare them to see if one is taller than the other. (Note: The ends of the two jars are lined up at the same point.) Is this a correct way to compare their heights? Yes or no?
A. Yes
B. No

6. Now look at the way I am holding the two jars. I want to compare them to see if one is taller than the other. (Note: The ends of the two jars are not lined up at the same point.) Is this the correct way to compare their heights? Yes or no?
A. Yes
B. No

7. Look at this sandal and this shoe that I am holding. (Note: The ends of the two pieces of footwear are lined up at the same point, and the sandal is taller.) Which one is taller than the other?
A. The sandal is taller.
B. The shoe is taller.
C. They are the same length.

8. Now look at the sandal and shoe. (Note: The placement of the shoe has shifted so the ends are not lined up at the same point. Hold the shoe higher than the sandal.) Which one is taller?
A. The sandal is taller.
B. The shoe is taller.
C. They are the same length.

9. Box #1 is 10 lbs.
Box #2 is 15 lbs.

Which box is heavier?
A. Box #1
B. Box #2

10. Animal #1 is 5 lbs.
Animal #2 is 8 lbs.

Which animal is lighter?
A. Animal #1
B. Animal #2

Answer Key: Each correct answer is awarded 1 point, and no partial credit is available. A score of 8/10 demonstrates mastery.
1. A
2. A
3. A
4. B
5. A
6. B
7. A
8. A
9. B
10. A