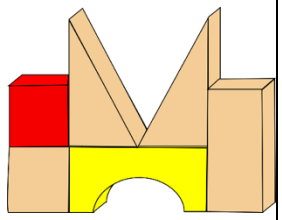
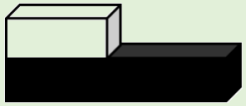
Measurement and Data

Describe and compare measurable attributes. **NC.K.MD.1** Describe measurable attributes of objects; and describe several different measurable attributes of a single object.	
Clarification	**Checking for Understanding**
This standard calls for students to describe an object's measurable attributes such as length, weight, and size. Students will use words such as heavy/light, long/short, and big/small to describe these attributes. Additionally, students will describe a single object using more than one measurable attribute. For example, a student may describe a shoe with one attribute, "My shoe is heavy!", or more than one attribute, "This shoe is heavy! It's also really long." Initially, students may have undifferentiated views about the size of objects; a student may believe that an object is "bigger" or "smaller" based on a single attribute. For example, a student may state that one book is bigger than another because it is longer. In reality, the other book may be wider and heavier. Through experiences and conversations, students will learn to discriminate and name these specific measurable attributes. Kindergarten students are not expected to measure objects with standard or non-standard units.	Show student a feather and a heavy book (e.g., dictionary). Allow student to examine each object. Say: Tell me about the weight of the paperclip. Tell me about the weight of the book. Student: *The feather is light. It's easy to lift. The book is heavy. I need my muscles to lift it.* Example: Display two block towers. Say: We've been using measurement words to describe objects in our classroom. Use some measurement words to tell me about this tower (point to bigger tower). Student A: *This tower is tall and big.* Student B: *That tower is long, and it looks heavy!* 

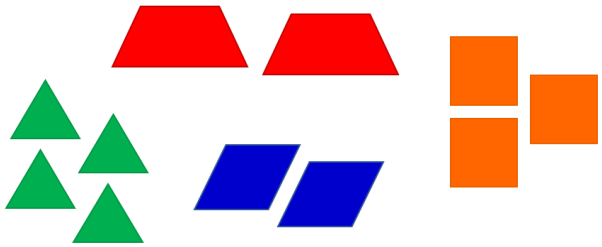
Describe and compare measurable attributes.

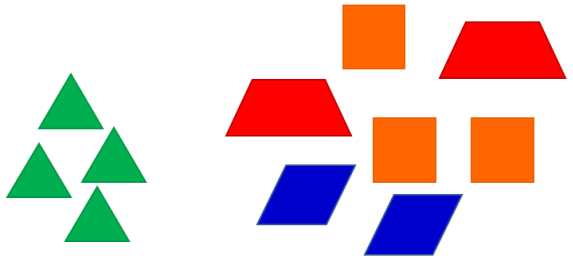
NC.K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.

Clarification	**Checking for Understanding**
In this standard, students will make direct comparisons of attributes that can be measured, such as length, weight, and size. Direct comparisons are made when objects are put next to each other (e.g., two children, two books, two pencils). Students must be able to move the objects next to each other to compare their lengths or hold them to compare weights. As kindergarten students continually compare objects by length, they discover the importance of lining up the ends of objects in order to have an accurate measurement. **For example**: A student lines up two blocks and says, "The black block is a lot longer than the white one."  A student picks up two books and says, "The red book is heavier than the blue book," or "The red book is bigger than the blue book."	Find an object in our classroom that is shorter than this straw. Find an object that is longer than this straw. Student A: *A crayon is shorter than the straw, and a pencil is longer. I know because I lined their ends up. The crayon didn't stick out as much as the straw, so it's shorter. The pencil stuck out more than the straw, so it's longer.*   Student B: *This block is shorter than the straw. I know because I stood the straw up next to the block. The straw was longer, so the block is shorter.*

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

NC.K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Clarification	**Checking for Understanding**
This standard calls for students to identify similarities and differences between objects, such as size, color, shape. Using the identified criteria, students will sort the objects into categories. Students will count the number of objects in each category. The sets in each category should be limited to less than or equal to 10. Students will sort (or group) each of the sets by the amount in each set. Like amounts are grouped together, but not necessarily ordered. **For example:** A student separates buttons into different piles based on color (all the blue buttons are in one pile, all the orange buttons are in a different pile, etc.). Then the student counts the number of buttons in each pile: blue (5), green (4), orange (3), purple (4). Finally, the student organizes the groups by the quantity. "I put the purple buttons next to the green buttons because purple also had (4). Blue has 5 and orange has 3. There aren't any other colors that have 5 or 3. So they are sitting by themselves."	Give the student a set of pattern blocks. Can you sort the pattern blocks? *Possible response:* *A student chooses to sort the pattern blocks by putting all of the hexagons in one pile and non-hexagons in a different pile. "I put the hexagons together and there were 6 of them. I put the triangles, trapezoids, and rhombuses together. There were 3 triangles, 2 trapezoids, and 2 rhombuses so there were 7 in that pile. There were 13 objects total."* Provide student with a set of pattern blocks. Say: Here is a set of blocks. Sort these blocks into groups. Tell me how you sorted them. Student A: *I put the colors together. I put the green shapes here, the blue shapes here, the red shapes here, and the orange shapes over here.* 

Classify objects and count the number of objects in each category. **NC.K.MD.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	
Clarification	**Checking for Understanding**
	Student B: *I put the shapes with 3 points in one group, and the shapes with 4 points in the other group.* 

Geometry

Identify and describe shapes. **NC.K.G.1** Describe objects in the environment using names of shapes, and describe the relative positions of objects using positional terms.	
Clarification	**Checking for Understanding**
In this standard, students locate and identify shapes in their environment. At first students may use informal names e.g., “balls,” “boxes,” “cans”. Eventually students refine their informal language by learning mathematical concepts and vocabulary and identify, compare, and sort shapes based on geometric attributes. Students also use positional words such as above, below, beside, in front of, behind and next to, to describe objects in the environment. Students should be able to identify the location and position of actual two-and three-dimensional objects in their classroom/school. By the end of Kindergarten, students should be able to describe location and position of two- and three-dimension representations on paper.	Look around the classroom. • Where do you see a cone? • Show an example of a square? • What shape is the door? • Do you see a shape next to the door?