

FIRST GRADE MATHEMATICS

UNIT 6 STANDARDS

Dear Parents,

We want to make sure that you have an understanding of the mathematics your child will be learning this year. Below you will find the standards we will be learning in Unit Six. Each standard is in bold print and underlined and below it is an explanation with student examples. Your child is not learning math the way we did when we were in school, so hopefully this will assist you when you help your child at home. Please let your child's teacher know if you have any questions. ☺

CLUSTER #2: REASON WITH SHAPES AND THEIR ATTRIBUTES.

Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

MGSE1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

This standard calls for students to determine which attributes of shapes are defining compared to those that are non-defining. Defining attributes are attributes that must always be present. Non-defining attributes are attributes that do not always have to be present. The shapes can include triangles, squares, rectangles, and trapezoids.

Defining attributes are attributes that help to define a particular shape (# angles, # sides, length of sides, etc.). Non-defining attributes are attributes that do not define a particular shape (color, position, location, etc.). The shapes can include triangles, squares, rectangles, and trapezoids. MGSE.1.G.2 includes half-circles and quarter-circles.

Example:

All triangles must be closed figures and have 3 sides. These are defining attributes. Triangles can be different colors, sizes and be turned in different directions, so these are non-defining.

Which figure is a triangle? How do you know this is a triangle?



Student 1

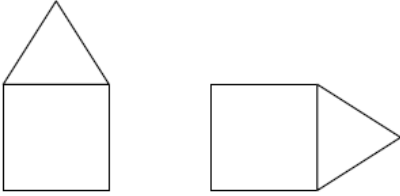
The figure on the left is a triangle. It has three sides. It is also closed.

MGSE1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) to create a composite shape, and compose new shapes from the composite shape.

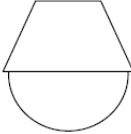
This standard calls for students to compose (build) a two-dimensional or three-dimensional shape from two shapes. This standard includes shape puzzles in which students use objects (e.g., pattern blocks) to fill a larger region.

Example:

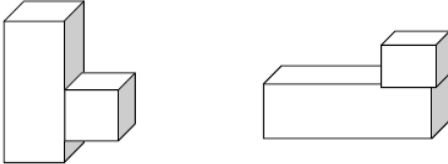
Show the different shapes that you can make by joining a triangle with a square.



Show the different shapes that you can make by joining trapezoid with a half-circle.



Show the different shapes that you can make with a cube and a rectangular prism.



MGSE1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

This standard is the first time students begin partitioning regions into equal shares using a context such as cookies, pies, pizza, etc... This is a foundational building block of fractions, which will be extended in future grades. Students should have ample experiences using the words, *halves*, *fourths*, and *quarters*, and the phrases *half of*, *fourth of*, and *quarter of*. Students should also work with the idea of the whole, which is composed of two halves, or four fourths or four quarters.

Example:

How can you and a friend share equally (partition) this piece of paper so that you both have the same amount of paper to paint a picture?



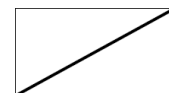
Student 1:

I would split the paper right down the middle. That gives us 2 halves. I have half of the paper and my friend has the other half of the paper.



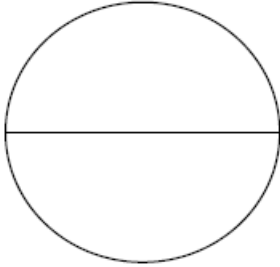
Student 2:

I would split it from corner to corner (diagonally). She gets half the paper. See, if we cut here (along the line), the parts are the same size.



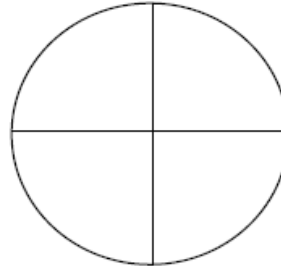
Example:

Teacher: There is pizza for dinner. What do you notice about the slices on the pizza?



Student: There are two slices on the pizza. Each slice is the same size. Those are big slices!

Teacher: If we cut the same pizza into four slices (fourths), do you think the slices would be the same size, larger, or smaller as the slices on this pizza?



Student: When you cut the pizza into fourths, the slices are smaller than the other pizza. More slices mean that the slices get smaller and smaller. I want a slice of that first pizza!

MGSE1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

This standard is taught throughout the whole year.

This standard calls for students to work with categorical data by organizing, representing and interpreting data.

Students should have experiences posing a question with 3 possible responses and then work with the data that they collect. For example:

Students pose a question and the 3 possible responses: *Which is your favorite flavor of ice cream? Chocolate, vanilla or strawberry?* Students collect their data by using tallies or another way of keeping track. Students organize their data by totaling each category in a chart or table. Picture and bar graphs are introduced in 2nd Grade.

What is your favorite flavor of ice cream?	
Chocolate	12
Vanilla	5
Strawberry	6

Students interpret the data by comparing categories.

Examples of comparisons:

- What does the data tell us? Does it answer our question?
- More people like chocolate than the other two flavors.
- Only 5 people liked vanilla.
- Six people liked Strawberry.
- 7 more people liked Chocolate than Vanilla.
- The number of people that liked Vanilla was 1 less than the number of people who liked Strawberry.
- The number of people who liked either Vanilla or Strawberry was 1 less than the number of people who liked chocolate.
- 23 people answered this question.