

Curriculum Parent Overview (Kindergarten)

MATHEMATICS

UNIT #3: Make a Shape, Fill a Hexagon

CONTENT FOCUS:

Students look for 2-D shapes in their environment. They explore materials such as pattern blocks, geoboards, and clay, and use them to make a variety of 2-D shapes. Throughout, the focus is on describing and comparing 2-D shapes. Students work together to make a shape mural out of paper shapes. In addition to describing and comparing 2-D shapes, students combine 2-D shapes to fill a given region or to make another shape. Students also use pattern blocks to fill puzzle outlines, and they find and discuss different ways to use pattern blocks to make the hexagon shape.

UNIT FOCUS:

- Describing, identifying, and comparing 2-D shapes: A main focus of this unit is observing and describing shapes. Students are encouraged to use their own words to describe a variety of 2-D shapes. Such descriptions include features such as size (e.g., "It's big."), overall shape (e.g., "It's round like a ball."), function (e.g., "I would use this shape as a ramp for my car.") and attributes, such as the number of sides, corners or vertices, and whether the shape is curved or has straight sides. Discussions that ask them to compare shapes (e.g., a rectangle and a circle) encourage students to further refine their ideas about what makes a [rectangle] a [rectangle]. It is important that young students see many different examples of the shapes they are studying so that they do not think that one particular example of a shape defines that shape. For example, if students see only the triangle in the pattern block, they may come to think that only equilateral triangles are triangles. Therefore, in addition to describing shapes that are provided, students look for examples of shapes in their classroom, neighborhood, and home. They observe and compare the shapes they make on the geoboards and those they construct from clay and pattern blocks. The result of such activities is that students see, describe, name, and compare a variety of shapes. Through these activities and discussions, students begin to build an understanding of the attributes of each shape and begin to see that features such as size or orientation, are not relevant when defining these shapes.
- Composing and decomposing 2-D shapes: Students develop an understanding of shape by constructing shapes themselves. For example, having many opportunities to work with and construct triangles will help students come to understand what makes a triangle a triangle. Therefore, this unit provides students with opportunities to make shapes with a range of materials, from clay to pattern blocks to geoboards. Constructing a shape requires that students think carefully about its attributes- Is it curved? How many sides does it have? What do the corners look like? In order to make a particular shape with clay or on a geoboard, students have to think about all the parts of the shape and how they go together. The work with clay encourages students to move around the edges or shapes and to feel the straight sides, corners, and angles. Their visual and tactile impressions are combined as they work to make a shape "look right." Constructing shapes helps students deepen their understanding of what constitutes a particular shape, regardless of size or orientation, and how it compares with other shapes. Using

pattern blocks, students combine shapes to make other shapes, and think about ways to decompose a given shape. They make pictures and designs, fill puzzle outlines, and find different ways to make the hexagon pattern block. As students look for a block to fill a given space, they think about the length of the sides and/or the size of the angle they need. All of these activities encourage students to look more carefully at shapes as they analyze and compare their characteristics.

- Counting and representing quantities: The Counting Jar provides continued opportunities to develop and refine strategies for counting and representing quantities. In this unit, students count a set of 12 large objects, notice how much space they fill in the Counting Jar, and discuss and compare ways to represent a set of 12 on paper. They also count another set of 12 smaller objects. After noticing the amount of empty space in the Counting Jar, students discuss how they know the two sets of objects are equivalent despite the difference in size.

MATHEMATICAL PRACTICES:

MP6: Attend to precision.

MP7: Look for and make use of structure.

CONNECTIONS TO PREVIOUS CONTENT:

Students entering Kindergarten bring with them a good deal of informal experience with geometry. As young children use their eyes and hands to interact with shapes and images in the everyday world, they develop an intuitive sense of how those shapes and images are the same and different. This unit builds on students' emerging knowledge of shapes, and the work they did identifying attributes of pattern blocks, GeoBlocks, and other objects in Unit 1, to further develop their spatial sense and deepen their understanding of the geometrical world in which they live.

CONNECTIONS TO FUTURE CONTENT:

The work of this unit is built upon in Unit 5, as students explore similar concepts with 3-dimensional shapes. As in this unit, students look for examples of these shapes in their environment. They draw on their knowledge of 2-D shapes as they describe the shapes of the faces of 3-D shapes. Students also consider other features that are important to 3-D shapes as they describe, compare, construct, and identify 3-D shapes. In Grade 1 Unit 2, students continue to observe, describe, and compare 2-D shapes and their attributes with a particular focus on triangles and quadrilaterals. They compose and decompose 2-D shapes and sort and describe groups of shapes, focusing on defining attributes of shapes and relationships among shapes.

MATH AT HOME:

- Play any of the following games with your child on SavvasRealize site after it has been introduced in the classroom:
 - Fill the Hexagon
- Explore the calendar as a tool for keeping track of time and events by showing your child how you use it.
- Encourage your child to describe the physical features of objects and to think about how objects are alike or different. *How would you compare these shapes?* (e.g., sides, big) Also, encourage your child to use words to describe where a picture or object is in relation to another (e.g., next to, near, under, over, below, above).
- Construct 2-D shapes and combine shapes to make new shapes.
- Encourage your child to explain his or her math thinking to you.
- Review the Math Words and Ideas videos for this unit on SavvasRealize site.