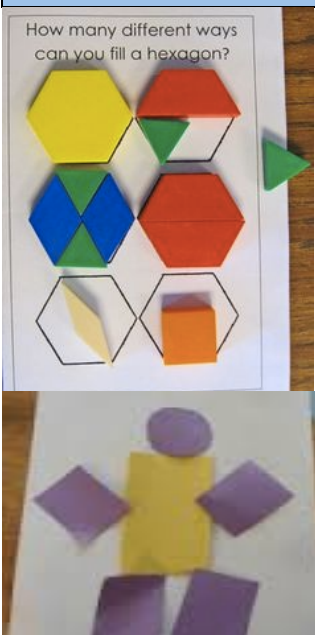


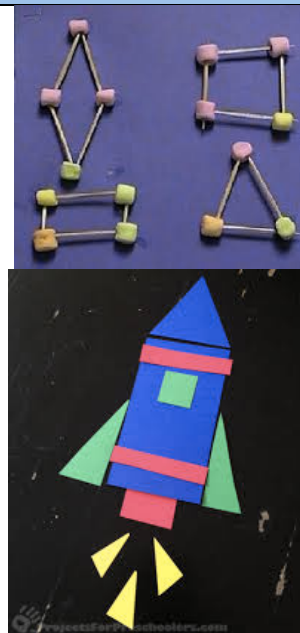
Identify, Describe, Analyze, Create and Compare 2-D and 3-D Shapes

Key Content from This Unit:

In this unit, kindergarten children identify, describe, model, and compose two- and three-dimensional shapes. They also describe relative positions of objects in the environment. Children are drawing shapes, in addition to building models of shapes. Children are also composing larger shapes from smaller shapes (a hexagon from triangles, for example).



As students compose and decompose shapes using a variety of tools, they not only learn about shapes, but reinforce the mathematical concept that smaller units combine to make larger units. This is true for shapes, and also supports number concepts, (like 10 is composed of 6 and 4 as well as 6 and 2 and 2) providing a great foundation for their work in Grade 1.



Vocabulary to Know:

Position Words:

- above,
- below,
- beside,
- in front of,
- next to,
- behind

2-D Shape words:

- square,
- circle,
- triangle,
- rectangle,
- hexagon,
- side

3-D Shape words:

- Cube,
- cone,
- cylinder,
- sphere,
- face,
- edge

What came before this:

Early in the year, children described and identified shapes, and identified objects as being flat (two dimensional) or solid (three dimensional).

What comes after this:

In first grade, children will analyze and compare two- and three-dimensional shapes. They will distinguish between defining and non-defining attributes, and build and draw shapes to possess defining attributes.

Common Core Focus:

- Describe objects in the environment using names of shapes and **using relative position terms**.
- Correctly name shapes regardless of position and size.
- Model shapes in the world through **building and drawing shapes**.
- Use **shapes to form other shapes** (e.g., three triangles can make a trapezoid).
- Analyze and compare two- and three-dimensional shapes.
- Use informal language to describe similarities and differences (i.e., number of sides, corners) and other attributes.

K.G.1, K.G.2, K.G.4, K.G.5, K.G.6

Spotlight on the Math Practices

Use Appropriate Tools Strategically

Mathematically proficient students can select the tool that is most appropriate for the task and explain why one tool is more effective than another.

In this unit, students *use appropriate tools strategically* when they:

- Recognize different tools like pattern blocks and tangram pieces
- Choose appropriate materials to build shapes (i.e., knowing that toothpicks or dried spaghetti makes better edges than yarn or cooked spaghetti)
- Manipulate virtual manipulatives on the computer to build or show their thinking.

How Can You Help?

- Build shapes from other shapes using real world objects or commercial pattern blocks or tangrams.
- Practice directional words like, above, below, beside, next to, behind, in front of.
- Have your child match shapes to real world objects (ie., a piece of paper looks like a rectangle or a sail looks like a triangle).
- Play “I Spy” using shape words.

KEY MATHEMATICAL MODELS of the COMMON CORE Real-World Connections

The Common Core State Standards and our SORICO Units of Study both have a strong emphasis on real-world connections. It is important that students see the mathematics that they are learning as useful and are able to apply what they are learning to the world around them.

In Geometry, this is evident when students work with real-life objects to learn, identify and compose shapes. In problem solving, we use problems that children at their age can relate to and use numbers that are appropriate to the situation. For example, a problem like, “Greta ate 3 red grapes and 5 green grapes for snack. How many did she eat in all?” is more meaningful than if she ate 3 pineapples and 5 cantaloupes for snack. Those fruits are less familiar to some students and more importantly, no one eats that much fruit for snack so the children will have difficulty making a connection to the task.



Some Resources to Help at Home

- Virtual Pattern Blocks to compose shapes <http://www.mathplayground.com/patternblocks.html>
- Composing shapes <http://www.turtlediary.com/kindergarten-games/math-games/compose-shapes.html> Sort Shapes with Curious George http://pbskids.org/curiousgeorge/games/i_love_shapes/i_love_shapes.html
- Lots of great shape activity ideas at <http://www.prekinders.com/pre-k-shapes/>
- Find 3-D shapes <http://pbskids.org/peg/games/magical-shape-hunt>
- Shapes Shoot – multiple levels http://www.sheppardsoftware.com/mathgames/earlymath/shapes_shoot.htm