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Curriculum Support Information
A mathematics resource for parents, teachers, and students

GEORGIA
DEPARTMENT OF
EDUCATION
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Fun with Shapes

Further investigations:

Take your child on a geometry hunt. Begin by locating plane shapes in and around your home. Then move to solid figures. Be sure to point out the difference between a plane shape and a solid. For example, a door has a face of a rectangle but it is a rectangular prism made up of many plane (flat or 2 dimensional) shapes.

Draw and then build shapes and solids with items from home. Use sand, flour, or shaving cream to draw or create different plane shapes. While creating the shapes, divide them into fractional parts. See if your child can divide a triangle into 2 equal parts 1/2 (yes) or 4 equal parts 1/4 (no). Use items such as yarn, toothpicks, coffee stirrers, or straws to build shapes and solids. For the corners, use mini-marsh-mallows, raisins, or gumdrops. Help your child begin by making plane shapes. Next, see what your child can do to expand the shapes into solids.

Practice creating halves (1/2) and fourths (1/4) with everyday sets of objects such as silverware, buttons, beans, cereal, etc. The concept of "one for me and one for you" is great to help with halves. Make sure your child understands that you have to share (divide) items equally among all the people. Start out with easy amounts such as 4, 8, or 12.

Terminology:

Pentagon: a closed figure with five straight sides
Hexagon: a closed figure with six straight sides
Cylinder: a hollow or solid object shaped like a round pole or tube
Cone: a solid object that has a flat, round base and narrows to a point at the top
Rectangular prism: a solid object with six faces, all of which are rectangles
Sphere: a solid round object like a ball
Cube: a solid object with six square faces
Fraction: equal shares or equal-sized portions of a whole; a way to describe a part of a whole or a group. For example, thirds require three parts to make a whole.
Whole: having all its parts
Part: each of several quantities into which a whole may be divided
Halves: the parts you get when you divide something into two equal parts
Fourths: the parts you get when you divide something into four equal parts.
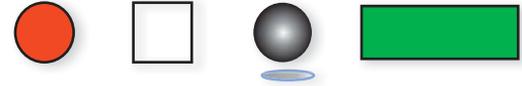
Students will:

• Compare shapes based on attributes
• Find and name shapes in the environment and use shapes to create representations of items in the environment
• Compose and decompose shapes
• Create shapes, both 2- and 3-dimensional
• Divide wholes or sets of objects into equal parts (halves, fourths)

Classroom Cases:

1. Which figure does not belong?

Case Closed - Evidence:
Sphere, because all of the figures are plane shapes and the sphere is a solid.

2 Austin is making a shape that has fewer than five straight sides.
What shape could he be making?

Case Closed - Evidence:
Triangle, because the triangle has only three sides; a square or rectangle, because they only have four straight sides. It cannot be a circle because a circle does not have any straight sides.

3. What shapes are needed to create this house?

A.   B.   C.

Case Closed - Evidence:
Letter A because the house is composed (a combination) of a triangle and a rectangle.

4. Juan wanted to share his sandwich with three of his friends. He decided to create a shape sandwich that could be cut into parts that are equal in shape and size.
Show some of the shapes Juan may use to create his shape sandwich.

Case Closed - Evidence:
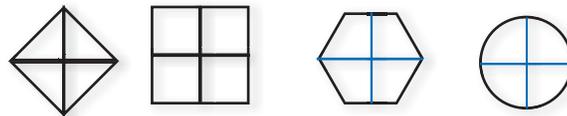
Clues:

Composing shapes is combining one or more shapes to make a new figure. Start with the parts and make a whole. For example, you compose shapes by placing a triangle above a square to create a house, a circle above a triangle to create an ice-cream cone.
For decomposing or breaking-apart shapes, start with the whole and arrive at the parts.

Distinguishing between 2- and 3-dimensional objects can sometimes be challenging for children. In the world of mathematics, 2-dimensional objects are plane shapes and 3-dimensional objects are solid figures. Help your child to distinguish between the two types of figures. Show him an empty cereal box and explain that this is a rectangular prism. Then together, cut along the edges of the box and lay flat the pieces. Help your child recognize that the cereal box (rectangular prism) is made up of 2-dimensional figures or plane shapes such as rectangles.

Book 'em:

Cubes, Cones, Cylinders and Spheres by Tana Hoban
The Greedy Triangle by Marilyn Burns
The Shape of Things by Julie Lacome
Give Me Half! by Stuart J. Murphy
Apple Fractions by Jerry Pallotta

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