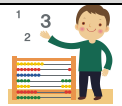
ATLANTA PUBLIC SCHOOLS
Making A Difference

Math Kindergarten Unit 1
Sophisticated Shapes

Parent Guide

What your student should know & do at home

"I Can" Help My Student



- I can name shapes correctly.
- I can name shapes correctly even when their size and orientation is unusual or different.
- I can identify two and three-dimensional shapes.
- I can identify two-dimensional objects as being flat.
- I can identify three-dimensional objects as being solid.
- I can find and name shapes (e.g., square, circle, triangle) in my environment.

Key Words to Know

1. **Vertex**- A corner of a figure. (plural - vertices; "corners")
2. **Triangle**- A plane figure with 3 straight sides and 3 vertices
3. **Square**- A plane figure with 4 sides that are the same length and 4 square vertices.
4. **Circle**- A figure with no sides and no vertices.
5. **Rectangle**- A plane figure with 4 sides and 4 square vertices.
6. **Hexagon**- A plane figure with six straight sides and six vertices
7. **Cone**- A geometric solid with a circular base and curved surface.
8. **Cylinder**- A geometric solid with two circular bases and a curved surface.
9. **Cube**- A solid figure with six square faces.
10. **Sphere**- A geometric solid with a curved surface.
11. **Facet (face)**- (the flat side of a three-dimensional shape)
12. **Vertices**- (where facets join)
13. **Solid**- A shape that is not flat; an object that has three dimensions. (i.e. Height, length, and width.)
14. **Two-dimensional (2D)** - Lying in a plane; flat.
15. **Three-dimensional (3D)** - Solid shapes; having points or sides that are not all on one plane.
16. **Attribute**- A characteristic of an object such as color, shape, size, etc.

Important Understandings and Concepts

What should my student already know before I begin…..

- Be able to recognize likenesses and differences in shapes.

  Example: A square has four sides. A triangle has 3 sides.

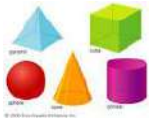
Learning at a Glance

Geometry helps children represent and describe their physical world using geometric ideas (shape, orientation, spatial relations) and vocabulary. . This unit is designed to introduce kindergarten students to the fascinating world of geometry and to help them learn to recognize it in their environment.

In this unit, students will recognize, name, build, draw, compare, and sort **simple two- and three-dimensional shapes**.

Two-dimensional shapes: flat shapes such as circles, squares, triangles, rectangles, etc.

Three-dimensional shapes: solid shapes such as spheres, cubes, cylinders, cones, etc.



Children should see examples of rectangles that are different sizes and lengths. Similarly, they should see examples of triangles that have sides of three different lengths, and they should contrast triangles with non-triangles contrast triangles with non-triangles. Children also need to see examples of shapes beyond circles, squares, rectangles, and triangles such as spheres, cubes, cones, cylinders, pyramids, etc. In addition, the students will tell the location of shapes in relation to each other using positional words such as beside, next to, between, in front of, behind, etc. And finally, sort, classify, and count groups of shapes.

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Sample Problems

1. Show the students a set of shapes with different sizes and orientations. Ask them to name them. Ask them to sort them and explain how they sorted.


2. Joey has a shape with 4 corners and 4 equal sides. What shape does he have? Explain your answer with a picture, with objects or in writing.

3. **Sample Task:** "Copy Cat" 2 players (partners)

Materials: different 2-D plane shapes, folders or something to obstruct view of partner's creation
Directions: The first player builds a design with some shapes hidden from the view of the other player. The first player then uses positional terms to describe where the shapes are in relation to each other as the second player attempts to build the same design. (Example: "Put a yellow circle beside the red circle.") The folder is then moved away so that the players can check to see how similar the designs are. The second player will now build a design for the first player to copy.

Recommended Children's Literature

Use these books to enhance both language literacy and mathematical literacy. *These books can be checked out at your local Atlanta-Fulton Public Library System.* www.afplweb.com

-  Circus Shapes, by Stuart J. Murphy
  on youtube: http://www.youtube.com/watch?v=dlflwhSvxZM
-  Captain Invincible and the Space Shapes, by Stuart J. Murphy
  on youtube: http://www.youtube.com/watch?v=r6x4VLjYyBk

How Can You Help Your Student?

Interactive Learning Lessons

-  **Compare Attributes Video** http://ccssk.watchknowlearn.org/Video.aspx?VideoID=20880&CategoryID=8808
- **Position Words Song** http://www.youtube.com/watch?v=Mv2SmM7XjPc

 **Learn about shapes** http://www.youtube.com/watch?v=aBUjH2KJns4

Interactive Learning Games

- **Interactive game for Identifying Shapes** http://www.kidport.com/grade1/Math/MeasureGeo/G1-M-MG2-1-1.htm
- **Interactive Shape Bingo game:** http://www.abcya.com/shapes_colors_bingo.htm

Playing games is a wonderful way to practice skills at home in a fun environment. *Stack-n-Pack* books contain several math games covering math concepts from Kindergarten through High School. *Stack-n-Pack* card games may be checked out from your school (contact your school's Parent Liaison) or purchased online: Stack-n-Pack Mathematics Card Games for K-HS .

Stack-n-Pack Grades PreK-2

- **Stack-n-Pack 2-D Geometric Shapes** game