Algebra/Geometry Institute Summer 2005
Lesson Plan #3
Geometrically Solid

Faculty Name: Brenda Miller

School: Myrtle Hall IV, Clarksdale, Ms. 38614
Grade Level: 5th

Teaching objective(s):

Students will explore geometric patterns and relationships.
Students will identify solid geometric figures.
Students will identify geometrical solids in the world around us.

Instructional Activities:

- Teacher will provide students with examples of solid figures (**cube, rectangular prism and square pyramid)** using a transparency, pointing out and defining the faces, edges and vertices of each figure. Have students describe the faces that make up a cube, rectangular prism and square pyramid. Discuss responses. Teacher will model how to count the faces. Discuss definitions of **prism** and **base**.

- Students will group and list other examples of solid and space figures in the real world. Groups will be asked to share lists. Teacher and students will discuss how each shape can be classified.

- Teacher will show physical models of geometric solids. Students will identify the names of the geometric solids. (**See pictures on attachment 1**). Students will share how the base affects the name of prism.

- Review definitions of base, prism, edges, faces, & vertices.

- Teacher will have students complete a model of a rectangular prism. **(See attachment 2)**

    1. Cut on solid lines.

    2. Fold on the dotted lines.

    3. Tape the edges together

- Students will describe the faces of a rectangular prism. (**See finished shape on attachment 3)**

- Students will look at the shape of the rectangular prism. Teacher will have students indicate if all faces are congruent.

- Teacher will inform students that the information gathered on faces, edges, & vertices will be used to complete a chart. Students will be instructed to count the number of faces, edges, & vertices on a cube, rectangular prism and triangular prism. Findings will be recorded on the chart provided. **(Attachment 4)** Findings should be completed for a cube, rectangular prism and a triangular prism, to compare and describe any familiar patterns. Teacher will monitor students as they work independently.

Materials and Resources:

Pattern for Rectangular Prism
Scissors
Plastic tape
Silver Burdett Gin Mathematics Path to Math Success
http://www.sbgmath.com
http://www.svschoolsupply.com

Assessment:

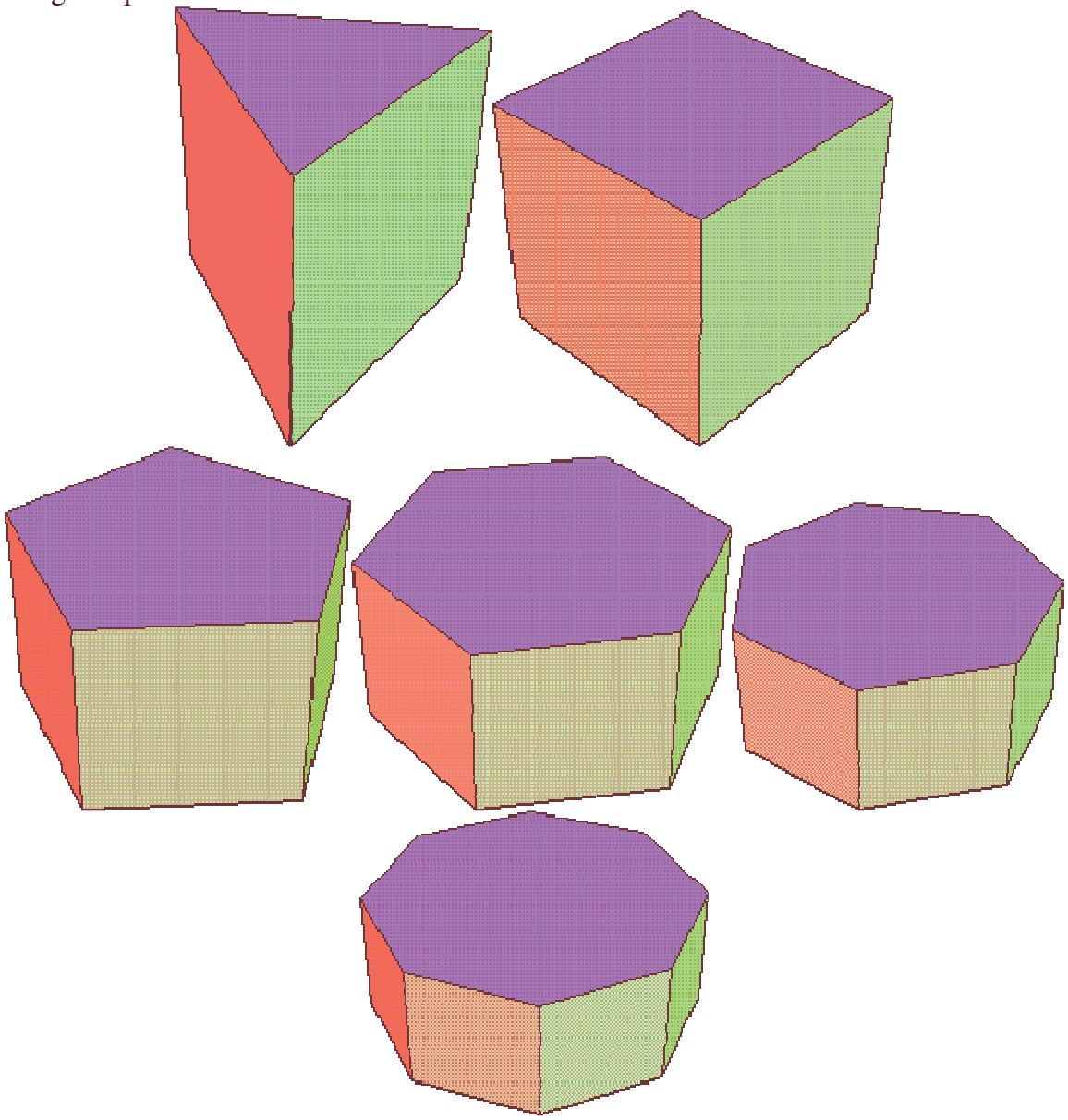
Teacher will observe students as they are working, making sure directions are being followed correctly. Students will tell the difference between prisms and pyramids.

Have students bring in examples, draw or glue a picture and label two of each geometric solid example. Students should be prepared to state where the real world examples of solid could be found in the real world.

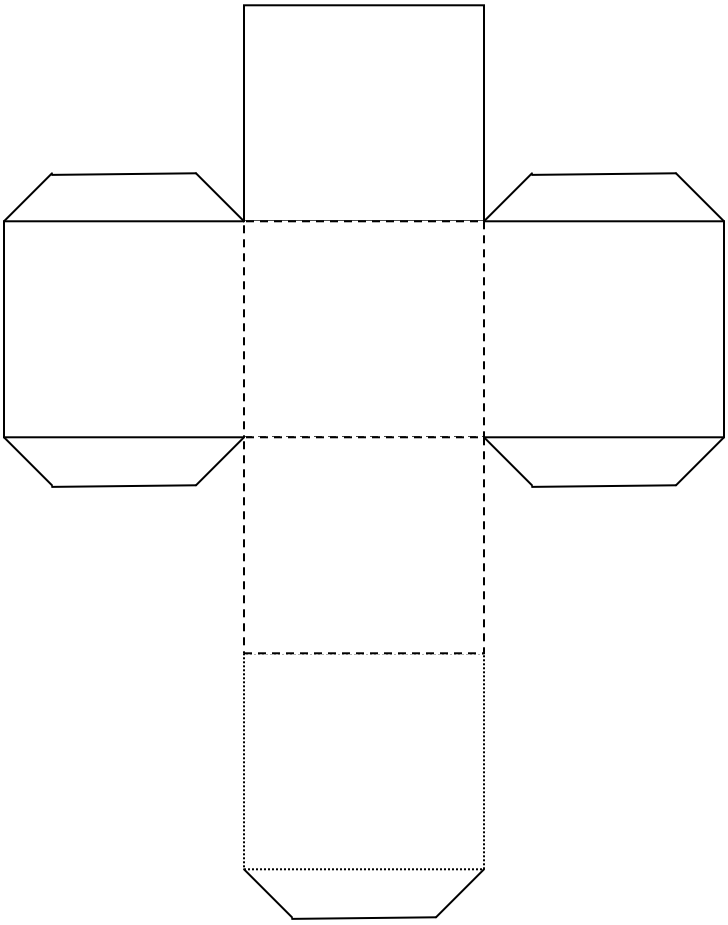
Attachment 1

Physical Models Shown

Triangular prism, cube, pentagonal prism, hexagonal prism, heptagonal prism, and octagonal prism:

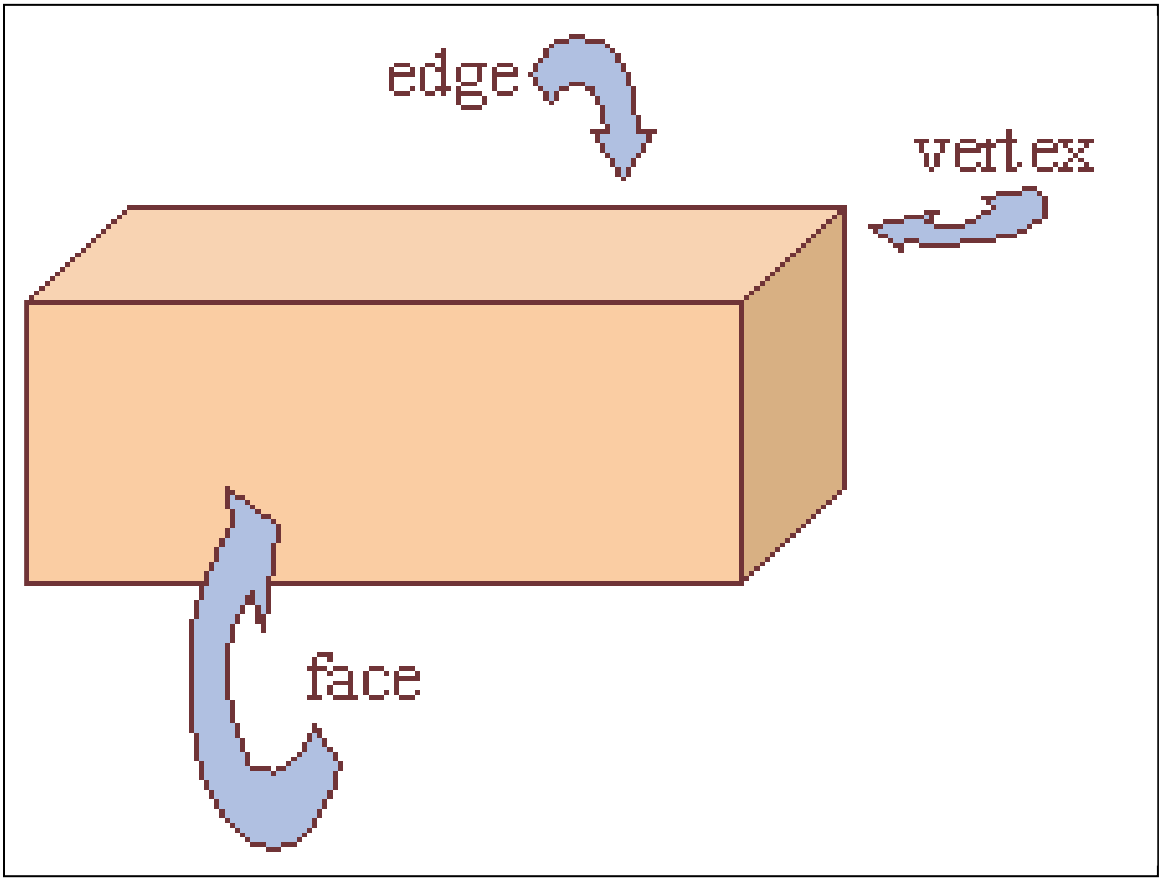


Attachment 2



Attachment 3

Rectangular Prism

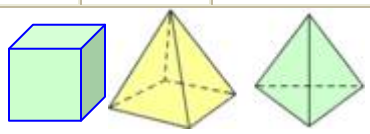


Attachment 4

Name _____Date_____

3-D Activity Sheet

	SPACE FIGURE	SHAPE OF FACES	NUMBER OF FACES	NUMBER OF EDGES	NUMBER OF VERTICES
Row 1					
Row 2					
Row 3					



Step 1:

What solid, or space figure does the third figure look like? Describe the shape of the faces of this space figure. How many faces does this space figure have? How many edges? How many vertices? Write the answers in **Row 1** of the chart above.

Step 2:

How many faces, edges, and vertices does the second space figure have? Write answers in **Row 3** of the chart above.

Step 3:

What space figure did you make using the pattern? _____
How many faces, edges, and vertices does the first space figure have? Write answers **Row 2** of the chart above.

Compare the number of faces, edges, and vertices with the space figure in Row 1. Describe any pattern you see.