

Algebra and Geometry Institute Summer 2006
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School: Bell Elementary / Boyle, Ms 38732
Grade Level: 4

Teaching Objective(s)

Identify and examine the properties of geometric solids

Instructional Activities

Today you will learn how to identify and examine the properties of geometric solids.

- Ask a student to read the objective.
- Show the students the 7 geometric figures (sphere, cone, cylinder, cube, pyramid, rectangular prism, and triangular prism).

Note: allow time for the students to offer as many observations as possible.

These are called geometric figures and each has a special name.

- Hold up the cone and turn it so that the students can see it from all angles.
“Does anyone know the special name for this figure?”
- Write the word cone on the chalkboard: cone
“What do we have in our classroom that has the shape of a cone?” If no shape can be found, students will tell where this solid can be found in the real world.
- Repeat w/a cylinder and a sphere.
“How are these three figures alike? They roll: they have curved surfaces.
“How are they different?” The cylinder and cone both have at least one flat side.

- Hold up the cube-turn it from all angles.
“Does anyone know the special name for this figure?”
- Write on the chalkboard: cube
“What do you notice about a cube?” The sides are all squares.
“Each of these flat sides is called a ‘face.’”
“The faces of a cube are all squares.
“What do we have in our classroom that has the shape of a cube?”
- Hold up the pyramid- repeat directions.
-One face is a square and the other faces are triangles.

-Hold up the rectangular prism-repeat directions.

“All the faces are rectangles.

-Hold up the triangular prism-repeat directions.

“Two of the faces are triangles and all the other are rectangles.”

-How are the cube, rectangular prism, triangular prism, and pyramid alike and how are they different?” The faces are different shapes and sizes. They are alike. All of them slide. When placed on an incline, they slide instead of roll.

-In cooperative groups students will handle, examine, and discuss the physical properties of plastic geometric solids.

-Each student will write a short paragraph about two of the geometric solids, he or she learned about during the math lesson.

-Also in groups, students will do a Venn diagram of geometric solids based on if they roll/slide.

Enrichment: Students will make models of rectangular prisms and cylinders from empty boxes and cans brought from home. The empty box may be a cereal, macaroni, or cake box. The empty can may be a can for vegetables, pet food, juice or tomato sauce. Remove the lid from the can. Make sure the box and can are clean. They should be covered w/ construction paper and labeled.

-These models will be displayed in the classroom.

Materials and Resources

Set of 7 geometric figures (sphere, cone, cylinder, cube, pyramid, rectangular prism and triangular prism)

Empty boxes and cans

Tape

Construction paper

Scissors / Venn diagram worksheet

Reference:

Perzanodki, Tomm., Lynne O’Neal, and Kathy Corcoran. “ Math 4 An Incremental Development. Saxon Publishers, Inc. (2001).

Written Assessment: Will be given at the end of the lesson activity. 2 pts each

1. Draw a cube

-How many faces does a cube have? 6

2. The flat side of a cube is called a, Face.

3. How are the cylinder, sphere and cone alike and different? They roll and have curved surfaces.

The cylinder and cone both have a flat side.

4. Students will bring in examples of pictures and label one of each type of geometric solids.
(2 pts for each picture and label.)

Venn Diagram worksheet is attached : Lesson activity is on whether geometric solids roll/slide.

Answers: For Venn diagram below:

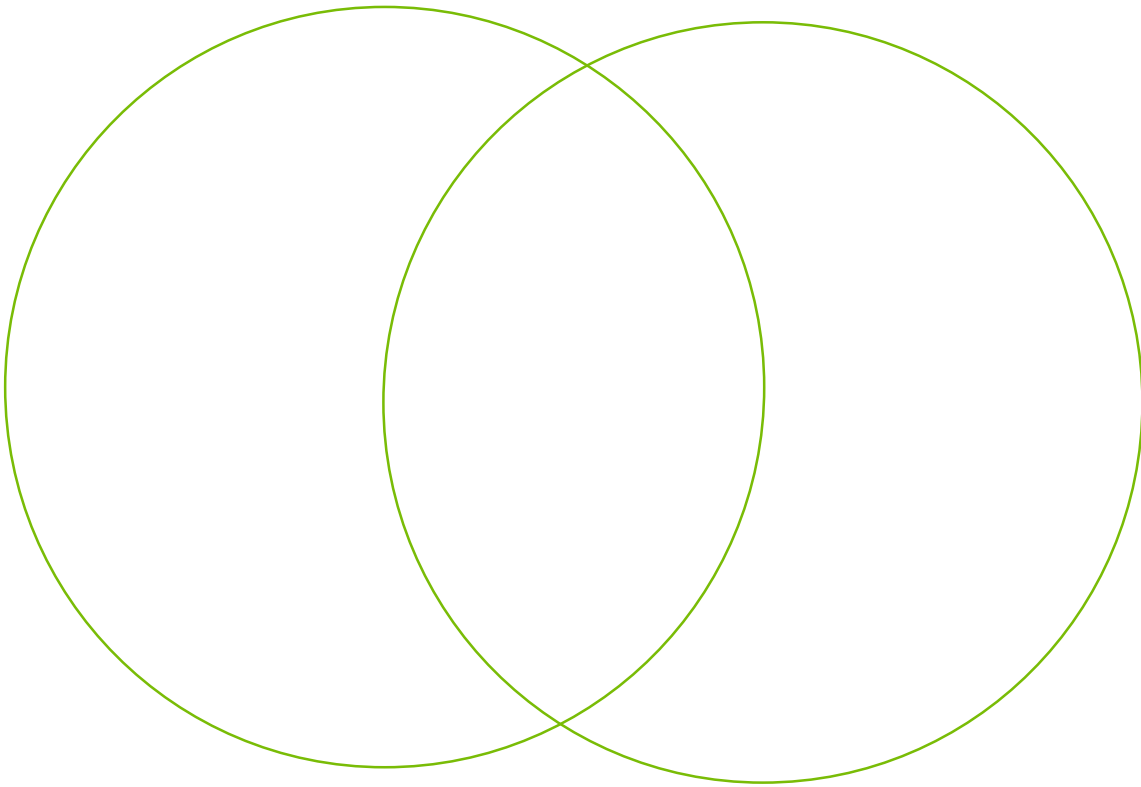
Roll— sphere

Slide—cube, rectangular prism, triangular prism, and pyramid

Middle—roll and slide/ cylinder and cone

ROLL

SLIDE



VENN DIAGRAM