Subject: Math Structures II-Grade Level 3
Topic: Recognizing Attributes of Three-Dimensional Shapes

Time:
45 minutes

Standards Followed:
Third Grade Geometry- Reason with shapes and their attributes.

CCSS.MATH.CONTENT.3.G.A.1
Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

The purpose of this activity is to help the students become familiar with both the three dimensional shape being built, the basic geometric shapes being used, and the vocabulary associated with this process.

Vocabulary:
- Vertex (Vertices)
- Apex
- Edge
- Base
- Face
- Pyramid
- Cone
- Prism

Preparation:
- Have the Prezi pulled up before beginning the lesson and discuss some of the vocabulary which will be used for the lesson
- Group students into groups of multiples of four as best you can
- Give each group one of each net- pyramid, cylinder, cone and prism and a tape dispenser (glue will work, but because of the heavity of the card stock, tape will hold more firmly)
  - If there are more than four in a group, make sure each student is able to have a net. The idea of this exercise is that everyone get hands on experience with at least one type of net before the discussion

Procedure:
1. As a class, with the teacher at the front leading, each geometric shape is made by (at least) one student in each group. Directions should be both verbal and visual.
   I. Pyramid
      a) Lay net flat on desk
      b) fold each triangle up so that the tops of the four meet in an apex, and the square make the base.

Materials Needed:
- Presentation Used During the Class:
  - http://prezi.com/q-1fmpcfpz0s/?utm_campaign=share&utm_medium=copy&rc=ex0share
- 7 of Each Net Printed on Colored Card Stock:
  - Pyramid
  - Cylinder
  - Cone
  - Prism
- Tape
- Computer
- Projector

Purpose of Activity:

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Math Structures II, Spring 2014, Gary Bender
II. Cylinder
   a) The rectangle which makes up the body of the cylinder should be rolled into a tube, with one long piece of tape to hold it in place.
   b) There should be one circle at each end to make the bases of the cylinder. They should be taped in place

III. Cone
   a) The body of the cone should be made by rolling the two rounded triangles to create an apex. After taping the body of the cone so that it won’t unravel, the circular base should be taped to the side opposite the apex.

IV. Hexagonal Prism
   a) Lay the net on the table in front of you, with the hexagon attached to the squares closest.
   b) Fold each square upward and tape each of the edges.
   c) Then fold the hexagon, which will make the final face and tape it to complete your prism.

Assessment:

Assessment will be made through use of the prezi, however, should you be unable to use it, questions for each shape should be surrounding vocabulary.

For each shape the students should be asked:

How many vertices?
Does it have a base? If so, what shape is the base?
Does it have an apex?
Is having an apex necessary if it has vertices?
How many edges? How many faces?

This can be done either after making each shape (using each slide in the Prezi as a secondary visual aid for the making of the shapes), or after all four shapes are made as a review.
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Activity Sheets
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