Name: Paula Wood

Grade Level: Geometry

Topic: ***Building Blocks of Geometry***

Class Time Needed: 2 days

A. Objectives
   a. Students will use mathematical language and symbols to read and write mathematics and to converse with others.
   b. Students will demonstrate mathematical ideas orally and in writing.
   c. Students will analyze mathematical definitions and discover generalizations through investigations.

B. Materials

   "Horton Hears a Who" by Dr. Seuss
   Holt Geometry textbook
   Rectangular box – one for each student
   Push pins – 8 per box
   Small pieces of paper for labeling vertices of the box – 8 per box

C. Instruction
   a. Read "Horton Hears a Who" out loud to the class.
   b. Ask students to 'think' about how this connects to geometry.
   c. Introduce the Building Blocks of Geometry using the online textbook at http://go.hrw.com/gopages/index.html,chapter 1, section 1.1, page 9-11.
   d. Create a foldable for the Building Blocks of Geometry.
   e. Define terms, give examples, draw pictorial representations, and discuss naming conventions.
   f. Label the pieces of paper with capital letters A – H using the diagram. Using the push pins label each of the corners of the box (vertices) with a letter. Discuss the point, lines, planes present on the box.
   g. Complete the activity sheet using the boxes.
   h. Ask students how "Horton Hears a Who" connects to geometry.

D. Assessment:
   a. Write an entry for your journal about the connections between 'Horton' and the building blocks of geometry
   b. Worksheet
   c.

E. Reflection

The students were anxious to listen to “Horton Hears a Who” because it was something totally different. I chose to read the entire book rather than just an excerpt because the students had not read the book. Some said they knew of the book but had not read it. After reading the book to the class and asking how it related to geometry, the students had a completely blank look on their face or one of puzzlement mixed in with a little bit of “have you lost your mind?” I enjoyed their expressions and was excited to see if they would eventually make the connections!

We then began the discussion of the building blocks of geometry – point, line, and plane – using the online textbook with the Smartboard. I believe using the textbook in this way helps my students know how to sort out the important information in the book which has been a problem in the past. Also by using the textbook online, I am able to access the examples in the book and explain them a bit more clearly because everyone can see exactly what I am talking about.

The students enjoy making the foldables, no matter how simple. This allows them to take notes on important points, but it does not seem to them like they are actually taking notes. This also allows them to be creative if they wish.

The box used to complete the activity was good for the students who prefer to be more hands-on. This also gave them an opportunity to actually touch the points, lines, and planes when trying to answer the activity questions. This seemed to help those students that have a difficult time with abstract ideas.

Next year I will repeat this lesson as is.

Activity
Discovering Geometry Ideas in a Model

The box you have labeled may be thought of a model of a real-world object. Complete each postulate below.

1. Examine the box. Identify the places where lines intersect each other. What kind of geometric figure is the intersection of two lines?

The intersection of two lines is a _____.

2. Identify the places in the illustration where planes intersect each other. What kind of geometric figure is the intersection of two planes?

The intersection of two planes is a _____.

3.
4. Look at points A and B. How many lines pass through both of these points? Could there be another line, different from the one shown, that passes through both points A and B?

Through any two points there is exactly one _____.

5. Look at points A, B, and C. How many planes pass through these three noncollinear points? Could there be a plane that passes through all three points?

Through any three noncollinear points there is exactly one _____.

6. Pick any plane in the illustration. Then pick two points that are in the plane. Name the line that passes through these two points. Is the line in the plane that you picked?

If two points are in a plane, then the line containing them _____.