Math 7 - Unit 5

Day 16 - Cross-Sections of 3D Solids

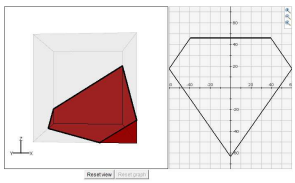
Lesson Objectives:

- I can draw geometric shapes with given conditions
- I can describe the two-dimensional figures that result from slicing three-dimensional figures.

A **cross-section** is the intersection of a solid and a plane. The shape of the cross-section formed by the intersection of a plane and a three-dimensional figure depends on the angle of the plane.

Scientists are able to use computers to study cross sections of ancient artifacts and structures. Determine the shape of each cross section of the pyramid below.

Online Exploration



http://www.shodor.org/interactive/activities/CrossSectionFlyer/

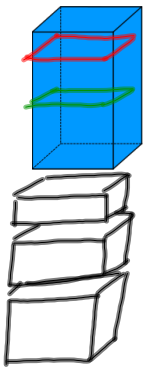
Step 1: Sketch a picture of a rectangular prism resting on its base.

Step 2: Cut the prism with a plane parallel to the base. Draw the figure that the cross-section is shaped like. What is this shape? square

Step 3: Cut the prism with a plane perpendicular to its base. Draw the figure that the cross-section is shaped like. What is this shape? rectangle

Step 4: Cut the prism with a plane tilted away from its base. Draw the figure that the cross-section is shaped like. What is this shape? triangle

Step 5: Stand the prism up on its base. Cut the prism parallel to the base in two different areas than you've done before. Draw the three figures that result. What do the cross sections look like? What do you notice about the three new solid pieces?



Finish Activity

DRAW the cross section that results from slicing each solid as shown.

1. 
2. 
3. 
4. 
5. 
6. 

Homework

Cross-Section WKS

* Individual Think Time *

What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...