EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

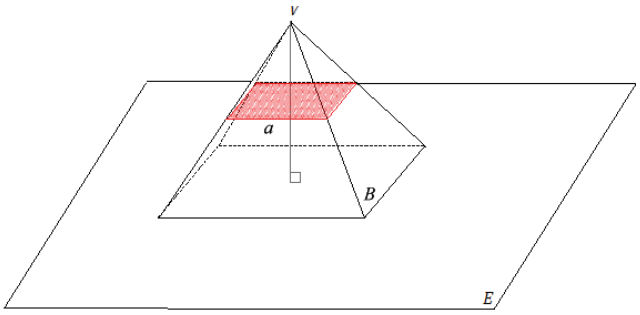
In Topic C, students learn about slicing three-dimensional figures. They examine the shapes that result when slicing **right rectangular prisms** and **pyramids** both horizontally and vertically. In addition, students predict the shape that will result from a diagonal slice. In the final lesson of the topic, students look at the different layers (or slices) of a collection of **cubes** to find the number of cubes in each layer and, ultimately, the total number of cubes in the structure.

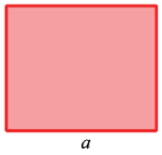
You can expect to see homework that asks your child to do the following:

- Draw and give the approximate dimensions of a slice that is perpendicular to a specific **face** in a right rectangular prism or pyramid.
- Draw a slice at an angle in the form of a given shape.
- Make a horizontal slice to a collection of cubes to determine the number of cubes in each layer and, ultimately, the total number of cubes needed to create the figure.

SAMPLE PROBLEMS *(From Lessons 17 and 19)*

1. A plane slices through a pyramid at segment a, parallel to base B of the right rectangular pyramid. On the figure at the right, sketch what the slice will look like. Then sketch the resulting slice as a two-dimensional figure. (Both sketches shown in red.)

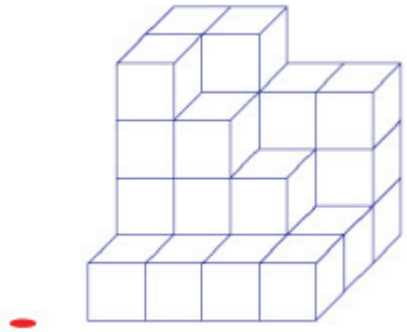


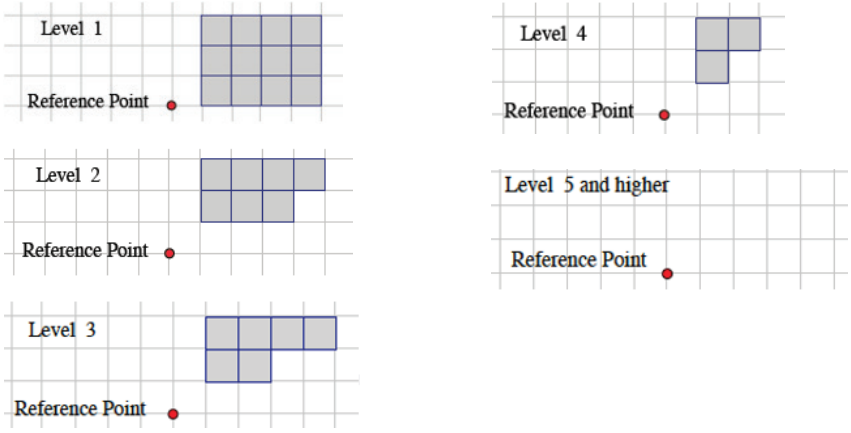


What shape does the slice make? What is the relationship between the slice and the rectangular base of the pyramid?

The slice is also a rectangle; the slice looks a lot like the rectangular base but is smaller in size.

2a. If you took slices of the figure below that are parallel to the tabletop the figure is sitting on, what would each slice look like?





SAMPLE PROBLEMS *(continued)*

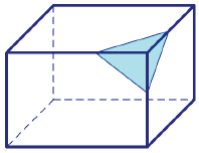
2b. Given the level slices from part (a), how many unit cubes are in the figure?

The total number of unit cubes can be determined by counting the shaded squares in Levels 1–4.
Level 1: There are 12 cubes between Level 0 and Level 1.
Level 2: There are 7 cubes between Level 1 and Level 2.
Level 3: There are 6 cubes between Level 2 and Level 3.
Level 4: There are 3 cubes between Level 3 and Level 4.
The total number of cubes in the solid is 12 + 7 + 6 + 3, or 28.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

You can help at home in many ways. Here are some tips to help you get started.



- Using the right rectangular prism and the pyramid in Terms (or your own drawing), ask your child to slice each figure into different shapes. For example, you might draw a right rectangular prism and ask your child to create a slice on an angle that looks like a triangle. (See image at right.)
- Stack cubes in different configurations, and ask your child to make horizontal slices to count the cubes in each layer and determine how many cubes are in the figure. (See Sample Problems.)

TERMS

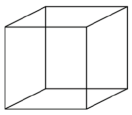


Figure 1

Cube: A box-shaped solid figure that has six identical square faces. The angle between each pair of adjacent faces is a right angle. (See Figure 1.)

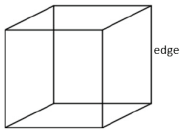


Figure 2

Edge: The intersection of two faces on a three-dimensional figure. (See Figure 2.)

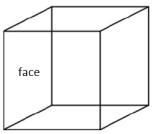


Figure 3

Face: One of the flat shapes that form the surface of a three-dimensional figure. For example, the six squares that form the surface of a cube are the cube's faces. (See Figure 3.)

Figure 4

Right rectangular prism: A three-dimensional solid shape with six faces that are all rectangles. Note that when a right rectangular prism has square faces, it is called a cube. (See Figure 4.)

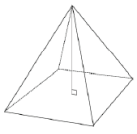


Figure 5

Right rectangular pyramid: A three-dimensional shape that has a rectangular base and triangular faces that meet at the apex, the point directly over the center of the base. (See Figure 5.)