

# 2-D Slices of Right Rectangular Prisms

**CCSS: 7.G.A.3:** Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.



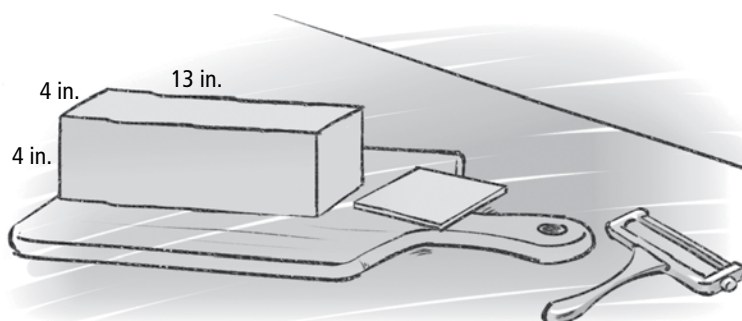
## Launch

SAMPLE SOLUTIONS ARE SHOWN BELOW.

MP3, MP8

A chef needs a piece of cheese for a new recipe. The chef makes a straight top to bottom slice from a block of cheese.

How are the attributes of the piece of cheese and the attributes of the block of cheese alike? How are they different? Explain your reasoning.



**Alike:** The block and the piece of cheese are both rectangular prisms. They each have two square faces and four rectangular faces.

**Different:** The block of cheese is a larger rectangular prism than the piece of cheese. The block's rectangular faces have greater area than the rectangular faces of the piece of cheese.

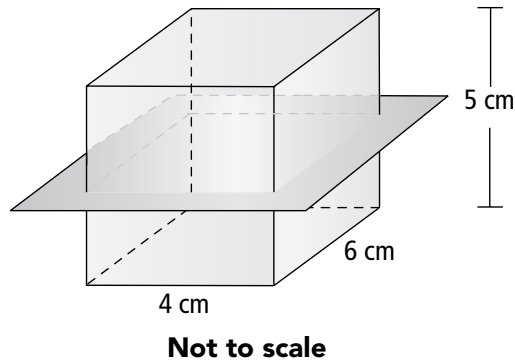
**Reflect** Does it matter to your solution where the chef makes the straight up and down slice? Explain.

Sample: Yes and no. The attributes of the block and piece of cheese will still be the same but the relative sizes will be different.

# Got It?

## PART 1 Got It (1 of 2) mc

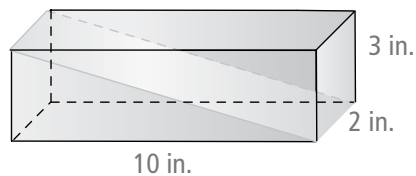
- What are the dimensions of the cross section formed by slicing the prism as shown?



4 cm × 6 cm

## PART 1 Got It (2 of 2)

- What is one dimension of the cross section formed by slicing the prism as shown?



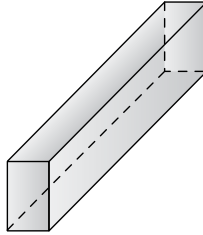
This cross section includes the right edge of the base.  
The length of that side of the base is 2 in.

# Got It?

## PART 2 Got It (1 of 2)



Draw and describe a cross section formed by a vertical plane that slices the front and back faces of the prism.

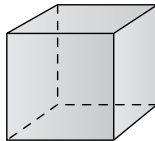


The cross section is a rectangle. One dimension is the height of the prism. The other dimension is the length from the front of the prism to the back.

## PART 2 Got It (2 of 2)



Describe a cross section formed by a plane that cuts off a corner of a cube.



A corner is the intersection of 3 faces of the cube. To cut off a corner, the slice will need to go through each face. This tilted slice will make a cross section that is a triangle.

# Close and Check

## Focus Question

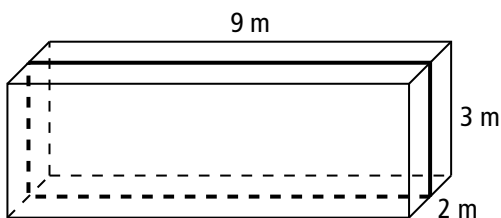
© MP5, MP7

How can the faces of a rectangular prism determine the shape and dimensions of a slice of the prism?

*Sample: Slices made parallel to a prism face will be identical in size and shape to that face.*

## Do you know HOW?

1. What are the dimensions of the cross section formed by slicing the rectangular prism vertically as shown?

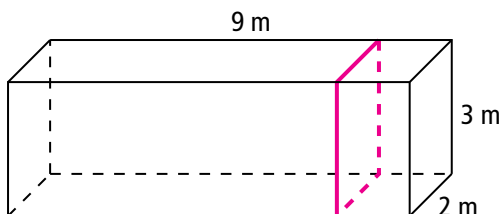


**9 m × 3 m**

2. What are the dimensions of the cross section formed by slicing the same rectangular prism horizontally?

**9 m × 2 m**

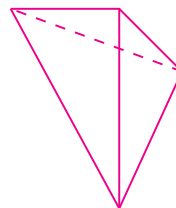
3. Draw the cross section that is formed by the vertical plane that intersects the front and back faces of the rectangular prism.



SAMPLE SOLUTIONS ARE SHOWN BELOW.

## Do you UNDERSTAND?

4. **Reasoning** Draw the 3-D figure that would result from slicing a corner from the prism in Exercise 1. Describe the faces of the new figure and tell its name.



*The base is a triangle and it has 3 triangular lateral faces. It is a triangular pyramid.*

5. **Writing** Explain how could you change one of the dimensions of the rectangular prism in Exercise 3 without changing the size and shape of the cross section you drew.

*You could change 9 m to another length because a vertical plane forms the cross section drawn.*