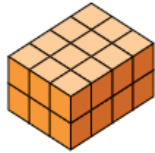


# Activity 4 Assessment

## Determining the Volume of Right Rectangular Prisms

### Determining the Volume of Right Rectangular Prisms

Understands that volume is a measure of how much space an object fills.



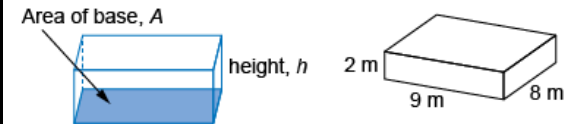
“The rectangular prism has a base that is a rectangle. It is made of 24 cubes, so its volume is 24 cubic units.”

Uses benchmarks to estimate volume using metric units.



“I would use a large dog crate as a benchmark for 1 m<sup>2</sup> to measure the volume of storage room.”

Use a formula to calculate the volume of a rectangular prism.



“I determined the area of the base:  
 $9\text{ m} \times 8\text{ m} = 72\text{ m}^2$ . Then I multiplied the area of the base by the height:  $72\text{ m}^2 \times 2\text{ m} = 144\text{ m}^3$ .  
 The volume of the box is  $144\text{ m}^3$ .”

### Observations/Documentation

# Activity 4 Assessment

## Determining the Volume of Right Rectangular Prisms

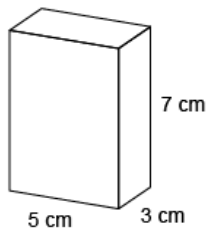
### Determining the Volume of Right Rectangular Prisms (cont'd)

Constructs different rectangular prisms for a given volume.

Make as many different rectangular prisms as you can with a volume of  $30 \text{ cm}^3$ .

"I made 5 different prisms. The dimensions are: 1 cm by 1 cm by 30 cm; 1 cm by 2 cm by 15 cm; 1 cm by 3 cm by 10 cm; 1 cm by 5 cm by 6 cm; 2 cm by 3 cm by 5 cm."

Sketches rectangular prisms and calculates volume using formula  $V = \text{base area} \times \text{height}$ .



"The base area is:  $3 \text{ cm} \times 5 \text{ cm} = 15 \text{ cm}^2$ .  
The height is 7 cm.  
Volume =  $15 \text{ cm}^2 \times 7 \text{ cm} = 105 \text{ cm}^3$ ."

Flexibly solves problems in various contexts that involve the volume of rectangular prisms.

A box has volume  $4500 \text{ cm}^3$ .  
The box has length 30 cm and width 15 cm.  
What is the height of the box?

"The area of the base of the box is  
 $30 \text{ cm} \times 15 \text{ cm} = 450 \text{ cm}^2$ .  
 $V = \text{base area} \times h$   
 $4500 \text{ cm}^3 = 450 \text{ cm}^2 \times h$   
 $h = 10 \text{ cm}$   
The box has height 10 cm."

### Observations/Documentation