

Name: \_\_\_\_\_

# Introduction to Volume of Rectangular Prisms

Entrepreneurs are people who start businesses and sell products and services. A product is an item you can buy, like a computer or headphones. A service is an action that someone does for someone else, like cutting someone's hair.

Two examples of entrepreneurs are Erin Hopmann and Jess Lybec. They started a company called Dabble. Dabble is a website where people can sign up for classes to learn new skills. Each class costs money. For example, people can pay \$30 to learn how to cook a new type of food, mix music, or build a robot.

Today, you will imagine you are an entrepreneur who sells snacks. You have a website that people can use to purchase snacks for different events and holidays. The snacks are shipped to customers in a shipping box. Follow the steps below to figure out what size shipping box you need to ship your snacks to customers.

## Step 1: Review Volume of Rectangular Prisms

Shipping boxes are an example of a rectangular prism. To figure out how many items you can put in a shipping box, you must find the shipping box's volume. Volume refers to how much space an object takes up.

The formula for the volume of a rectangular prism is:

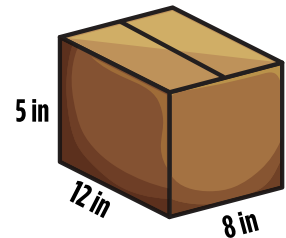
$$\text{Base Area} \times \text{Height} = \text{Volume of Rectangular Prism}$$

$$\text{Length} \times \text{Width} = \text{Base Area}$$

Take a look at this shipping box on the right. It has a height of 5, a length of 12, and a width of 8.

To find the volume, you multiply:

$$12 \times 8 \times 5 = 480 \text{ inches}^3$$



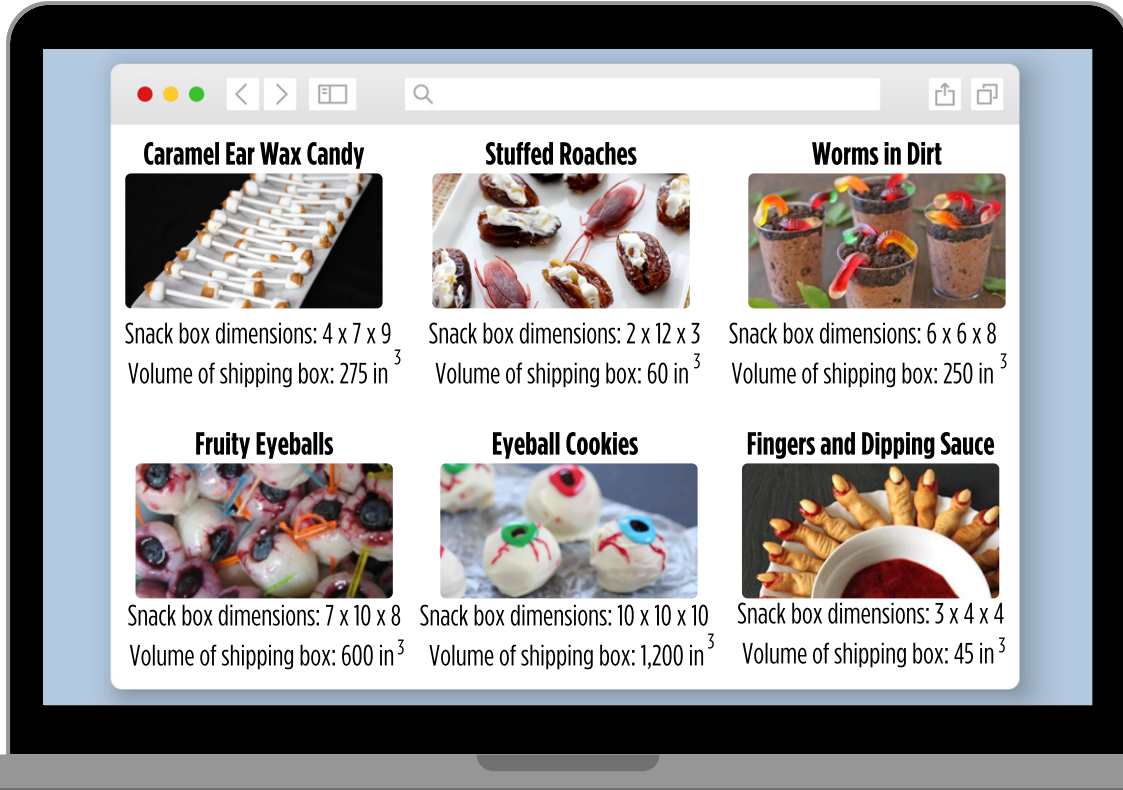
## Step 2: Figure out if Snacks Fit in Shipping Boxes

On the next page, you will see an image that shows 6 snacks that are available for sale on the website. For each snack, you will see information on the dimensions (length, width, and height) of a smaller box that the snack is packaged in. You will also see the volume of the shipping box that was selected to ship the box. All dimensions are in inches.

Calculate the volume of the small snack box and see if that box will fit inside the shipping box. Then, calculate how much empty space is in the box so that you can fit packing materials, like bubble wrap.

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## Caramel Ear Wax Candy

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?

## Stuffed Roaches

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?

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## **Worms in Dirt**

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?

## **Fruity Eyeballs**

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?

## **Eyeball Cookies**

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?

## **Fingers and Dipping Sauce**

Will the item fit in the box? Why or why not?

How much empty space is in the box or how much more room does the box need to fit the snack?