

Name: _____

Calculating Area and Perimeter

A quality specialist makes sure that products are made in the correct way. For example, they make sure that candy bars are safe to eat and don't have any hair or fingernails in them! No one would want to eat food that has something gross in it!

Quality specialists also make sure that the packaging for products is made in the correct way. The wrapper around a candy bar is an example of packaging. Quality specialists make sure that the wrapper on a candy bar isn't ripped. They also make sure that the wrapper is the correct size.

Today, you will think like a quality control specialist and check if the packaging is correct for a bag of chips, a candy bar, and a cereal box. Follow the steps below!

Step 1: Learn about calculating size of packages

To figure out if a package is the correct size, quality specialists find the area and perimeter of a package.

Area is the amount of space the inside of the shape takes up. To find the area of a rectangle, use the formula:

$$\text{width} \times \text{length} = \text{area.}$$

Perimeter is the distance around the outside of a shape. To find the perimeter, use the formula:

$$l + l + w + w = \text{perimeter or } 2l + 2w = \text{perimeter}$$

Here is an example:

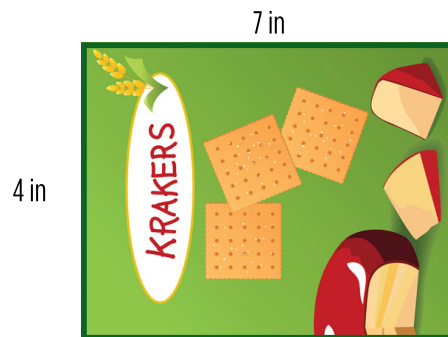
The box of crackers pictured here has a length of 7 inches and a width of 4 inches.

To find the area, we use the formula: (length x width = area)

$$7 \times 4 = 28 \text{ in.}^2$$

To find the perimeter, we use the formula: (l + l + w + w = perimeter)

$$7 + 7 + 4 + 4 = 22 \text{ in}$$

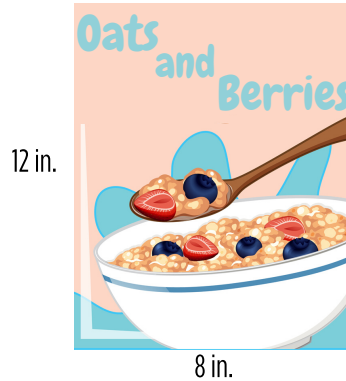


Step 2: Calculate size of packages

On the next page are the lengths and widths of 3 different packages. Find the area and perimeter of each package. Don't forget to show your work and write your answers at the bottom of each box.

Name: _____

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Area: _____

Perimeter: _____

Area: _____

Perimeter: _____

Area: _____

Perimeter: _____

Step 3: Decide if packages are ready to be sent out

After quality specialists find the area and perimeter of a package, they compare the numbers to a special checklist. The checklist says what the area and perimeter should be. If the numbers are the same, the package is ready to be sent out! If the numbers are not the same, the package is not ready to be sent out. This is because the package does not have the correct area and perimeter.

Below, you will see what the area and perimeter of each package should be. Compare these numbers to the numbers you calculated. Decide whether each package is ready to be sent out and circle your answer.

Chip bag:

Area: 21 inches²
Perimeter: 20 inches

Is this bag ready to be sent out? Yes No

Cereal Box:

Area: 96 inches²
Perimeter: 40 inches

Is this bag ready to be sent out? Yes No

Candy Bar:

Area: 18 inches²
Perimeter: 18 inches

Is this bag ready to be sent out? Yes No

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Extra Time? Design your own package for a chip bag

It is your turn to design a package for a chip bag. Draw your chip bag in the box below. Your chip bag must have a name and a design on the front. You must also label the width and height of your chip bag. Then, use the space below the box to find the area and perimeter.



Area:

Perimeter: