

3rd Grade Math: Perimeter of a Figure

What Is Perimeter?

The **perimeter** is the total distance around the outside of a shape. To find the perimeter, you add up the lengths of all the sides of the figure.

Key Points About Perimeter:

1. **Perimeter is measured in units:**

The units used depend on what you're measuring. For example, you might use centimeters (cm), inches (in), meters (m), or feet (ft).

2. **Add all sides:**

The perimeter of a shape is found by adding the lengths of all its sides together.

Formula for Finding Perimeter

- For a rectangle:

$$\text{Perimeter} = 2 \times (\text{Length} + \text{Width})$$

- For a square:

$$\text{Perimeter} = 4 \times \text{Side}$$

For any other polygon (shapes with more than 4 sides), just add up the lengths of all the sides.

Example 1: Perimeter of a Rectangle

Problem:

A rectangle has a length of 8 cm and a width of 4 cm. What is the perimeter?

Solution:

Use the formula for the perimeter of a rectangle:

$$\text{Perimeter} = 2 \times (\text{Length} + \text{Width})$$

Substitute the values:

$$\text{Perimeter} = 2 \times (8 \text{ cm} + 4 \text{ cm}) = 2 \times 12 \text{ cm} = 24 \text{ cm}$$

So, the perimeter is **24 cm**.

Example 2: Perimeter of a Square

Problem:

A square has sides that are 5 inches long. What is the perimeter?

Solution:

Since all sides of a square are equal, you can multiply the length of one side by 4:

$$\text{Perimeter} = 4 \times \text{Side} = 4 \times 5 \text{ in} = 20 \text{ in}$$

So, the perimeter is **20 inches**.

Example 3: Perimeter of a Triangle

Problem:

A triangle has sides that are 3 cm, 4 cm, and 5 cm long. What is the perimeter?

Solution:

Add up the lengths of all the sides:

$$\text{Perimeter} = 3 \text{ cm} + 4 \text{ cm} + 5 \text{ cm} = 12 \text{ cm}$$

So, the perimeter is 12 cm.

Steps to Find the Perimeter of Any Polygon:

1. **Identify the shape:** Is it a square, rectangle, or another type of polygon (like a triangle or pentagon)?
2. **Measure each side:** Write down the length of each side.
3. **Add the lengths together:** Add all the sides to get the total distance around the figure.
4. **Label your answer with the correct unit:** If you're working in centimeters, the answer will be in **cm**; if you're working in inches, the answer will be in **inches**.

Practice Problems

1. A rectangle has a length of 9 meters and a width of 4 meters. What is the perimeter?
2. A square has sides of 7 inches. What is the perimeter?
3. A triangle has sides of 6 cm, 7 cm, and 8 cm. What is the perimeter?
4. A pentagon (5-sided figure) has sides that are 2 cm, 3 cm, 4 cm, 5 cm, and 6 cm. What is the perimeter?

Conclusion:

- **Perimeter** is the total distance around the outside of a figure.
- To find the perimeter, add up the lengths of all the sides.
- Knowing how to calculate perimeter helps in real-life situations like determining how much fencing you need to go around a yard or how much ribbon you need to decorate the edge of a picture frame.