



Introduction (5 minutes)

Welcome to this worksheet on exploring the relationship between area and shape perimeter! In this activity, we will delve into the world of geometry and discover how area and perimeter are used in real-life scenarios.

Understanding Area and Perimeter (10 minutes)

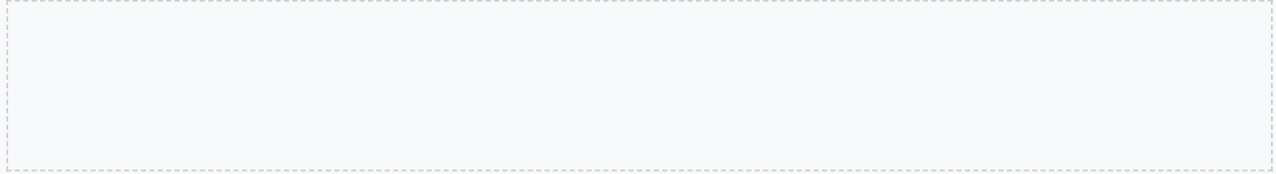
Before we begin, let's define what area and perimeter mean:

- **Area:** The amount of space inside a shape, measured in square units (e.g., square meters or square feet).
- **Perimeter:** The distance around a shape, measured in units (e.g., meters or feet).

Calculating Area and Perimeter (15 minutes)

Let's practice calculating the area and perimeter of different shapes:

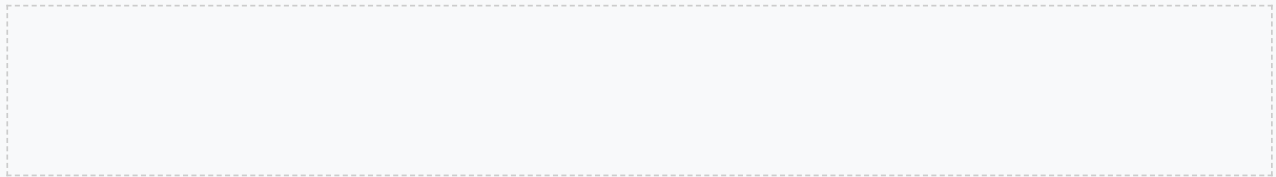
1. **Rectangle:** Area = length x width, Perimeter = $2 \times (\text{length} + \text{width})$
2. **Triangle:** Area = $(\text{base} \times \text{height}) / 2$, Perimeter = sum of all sides
3. **Circle:** Area = $\pi \times \text{radius}^2$, Perimeter = $2 \times \pi \times \text{radius}$



Real-World Applications (10 minutes)

Area and perimeter are used in various real-world scenarios, such as:

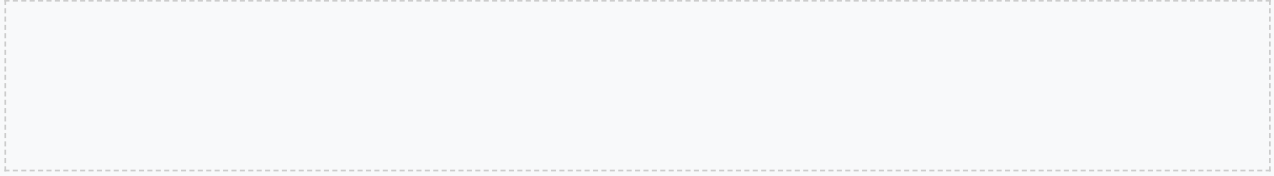
- **Architecture:** Calculating the area of rooms and buildings to determine the amount of materials needed.
- **Engineering:** Designing bridges and roads, taking into account the perimeter and area of the structures.
- **Gardening:** Measuring the area of a garden to determine the amount of fertilizer needed, and the perimeter to calculate the length of fencing required.



Activity 1: Shape Sorting (15 minutes)

Sort the following shapes into categories based on their area and perimeter:

- Rectangle (6 cm x 4 cm)
- Triangle (base 5 cm, height 6 cm)
- Circle (radius 3 cm)



Activity 2: Design a Room (20 minutes)

Design a room with a specific area and perimeter. Calculate the dimensions of the room and explain your reasoning.



Activity 3: Perimeter Puzzle (15 minutes)

Solve the following perimeter puzzle:

- A rectangle has a perimeter of 20 cm. What are its dimensions?

Questions (10 minutes)

Answer the following questions:

1. What is the formula for calculating the area of a rectangle?
2. A triangle has a base of 8 cm and a height of 10 cm. What is its area?
3. A circle has a diameter of 14 cm. What is its perimeter?

Conclusion (5 minutes)

Congratulations on completing this worksheet! You have explored the relationship between area and shape perimeter, and practiced calculating these measurements for different shapes.

Answer Key

Check your answers with the following solutions:

- Activity 1: Shape Sorting - Rectangle: Area = 24 cm^2 , Perimeter = 20 cm; Triangle: Area = 15 cm^2 , Perimeter = 18 cm; Circle: Area = 28.26 cm^2 , Perimeter = 18.84 cm
- Activity 2: Design a Room - Example solution: Room dimensions = 4 m x 5 m, Area = 20 m^2 , Perimeter = 18 m
- Activity 3: Perimeter Puzzle - Example solution: Rectangle dimensions = 4 cm x 6 cm
- Questions - 1. Area = length x width; 2. Area = $(\text{base} \times \text{height}) / 2 = 40 \text{ cm}^2$; 3. Perimeter = $2 \times \pi \times \text{radius} = 43.96 \text{ cm}$

