

# Session 30: Area - square, rectangle

Session Title	Area - square, rectangle
Objective	<div><div>1. By the end of the lesson, students will be able to:</div><div>2. Define what "area" means.</div><div>3. Identify the formulas for the area of a square and a rectangle.</div><div>4. Calculate the area of squares and rectangles using formulas.</div><div>5. Solve real-world problems involving area.</div></div>
Concept	<div><div>1. Chart with formulas:</div><div>2. Rectangle: <math>\text{Area} = \text{length} \times \text{width}</math></div><div>3. Square: <math>\text{Area} = \text{side} \times \text{side}</math></div></div>
Materials required	<div><div>1. Whiteboard and markers</div><div>2. Grid paper</div><div>3. Ruler</div><div>4. Scissors (optional)</div><div>5. Colored pencils</div><div>6. Area formula chart</div><div>7. Practice worksheets</div></div>
Methodology	Learning by measuring real objects and their area through group activity and guided practice.
Session plan	90 minutes

## Introduction activity(20 minutes)

### 1. Quick Review of Perimeter

Write on the board:

Perimeter = the total distance around the outside of a shape.

Say:

“If I walk all the way around the edge of a soccer field, what am I measuring?”

Let students respond:

“The perimeter!”

**Next example:**

“Imagine you’re putting a fence around your garden. You need to know how much fencing to buy. That’s the perimeter—the total length around it.”

Draw a rectangle on the board to represent a garden

Label: Length = 6 meters, Width = 4 meters

Ask:

“How much fencing would I need to go all the way around?”

Guide them:  $6 + 4 + 6 + 4 = 20$  meters

**2. Transition to Area**

Ask:

“What do we mean when we talk about the area of a shape?”

(Wait for responses. Guide as needed.)

Then explain:

“Area is the amount of surface inside the shape. It tells us how much space we’re covering.”

Real-life example:

“If I want to put carpet on the floor of a room, I’m not just measuring around it—I need to know how much space the carpet needs to cover. That’s the area.”

Use the same rectangle drawing:

Say:

“This could be the shape of a room. If I wanted to put tiles or carpet in here, I’d need to know how much flooring material to buy. That’s the area!”

- Engage: Ask students, “How can we measure how much space a shape takes up on a surface?”
- Introduce the word "Area" and explain that it is the amount of space inside a shape.
- Show a square and a rectangle on the board and ask students how they are different and similar.

**Define:**

- Square: A shape with 4 equal sides and 4 right angles.
- Rectangle: A shape with opposite sides equal and 4 right angles.
- Rectangle:  $\text{Area} = \text{length} \times \text{width}$
- Square:  $\text{Area} = \text{side} \times \text{side}$

## Main Activity (65 minutes)

**Word Problems: Area of Squares and Rectangles (20 minutes)**

**1. Rectangle - Carpet a Room:**

You are carpeting a rectangular bedroom that is 5 meters long and 4 meters wide. How much carpet do you need to cover the floor?

Shape: Rectangle

Formula:  $\text{Area} = \text{length} \times \text{width}$

Solution:  $5 \times 4 = 20$  square meters

## **2. Rectangle - Tiling a Kitchen:**

A rectangular kitchen floor is 6 meters long and 3 meters wide. How many square meters of tiles will cover the floor completely?

Shape: Rectangle

Formula: Area = length  $\times$  width

Solution:  $6 \times 3 = 18$  square meters

## **3. Square - Small Rug:**

You are placing a square rug in your reading corner. Each side of the rug is 2 meters long. What is the area of the rug?

Shape: Square

Formula: Area = side  $\times$  side

Solution:  $2 \times 2 = 4$  square meters

## **4. Square - Garden Plot:**

A square garden has sides that are 7 meters long. How much area will you cover if you plant flowers in the whole space?

Shape: Square

Formula: Area = side  $\times$  side

Solution:  $7 \times 7 = 49$  square meters

## **Team-Based Area Drawing Game (25 minutes)**

### **Objective:**

Each team will draw a layout of a real-life space (garden, bedroom, or classroom) using only squares and rectangles, then calculate the area of each object they include.

## **Step-by-Step Instructions:**

1. Divide the Class:

Team 1: Garden Designers

Team 2: Bedroom Planners

Team 3: Classroom Arrangers

### **Team Tasks: Each team must:**

- Design a top-down view of their space
- Include at least 5 real items (all squares or rectangles)
- Label each item with length, width, and area
- Add a title and decorate the drawing

### **Team Topics and Ideas:**

#### **Team 1 - Garden**

- Vegetable bed (2m × 1.5m)
- Flower patch (1m × 1m)
- Pathway (0.5m × 4m)
- Grass area (3m × 2m)
- Bench (1.2m × 0.5m)

#### **Team 2 - Bedroom**

- Bed (2m × 1.5m)
- Rug (1.5m × 1m)
- Desk (1m × 0.5m)
- Bookshelf (1.2m × 0.6m)
- Window (1m × 1m)

#### **Team 3 - Classroom**

- Teacher's desk (1.5m × 0.8m)

- Student desk (1m × 0.5m)
- Whiteboard (2m × 1m)
- Bookshelf (1m × 0.5m)
- Carpet area (2m × 3m)

### **Wrap-Up:**

- Have each team present their layout, explain their measurements, and compare total areas. You can even give awards for:
- Most creative layout
- Most accurate math
- Best teamwork

## Review Questions(5 minutes)

- How are the formulas for squares and rectangles similar or different?
- Can you explain what 'area' means in your own words

## Follow Up Task(20 minutes)

### **Activity: Measuring Areas in the Classroom**

#### **Instructions:**

- Form small groups (2–3 students each).
- Assign or let students choose 3–5 objects in the classroom that are square or rectangular in shape.

#### **Examples of objects:**

- Book cover
- Student desk
- Window
- Student desk
- Whiteboard
- Door

### 3. Measure:

Measure the length and breadth (for rectangles) or the side (for squares) of each object using a ruler or tape measure.

Record the measurements.

### 4. Calculate:

Use the correct formula:

Square:  $\text{Area} = \text{Side} \times \text{Side}$

Rectangle:  $\text{Area} = \text{Length} \times \text{Breadth}$

Work out the area for each item.

### 5. Record Findings:

Fill a table like this:

### 6. Discuss:

Which object had the largest area?

Which object had the smallest area?

Why is measuring area important in real life?

## Expected learning outcome

### Knowledge building

- Understand the meaning of area.
- Measure length and breadth accurately.
- Apply formulas for the area of a square and a rectangle.

### Skill building

- Calculate the area of classroom objects.

- Compare the areas of different objects.
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Revision #3

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