Session 29: Perimeter word problems

Session Title	Perimeter word problems
Objective	1. By the end of this lesson, students will be able to: 2. Define perimeter and understand its significance. 3. Calculate the perimeter of various shapes, including squares, re and irregular polygons. 4. Apply perimeter concepts to real-life situations.
Concepts	1. Whiteboard and markers 2. Ruler or measuring tape 3. Chart with formulas for perimeter 4. Worksheet with practice problems 5. Geometry tools (optionals)
Materials required	1. A measuring tape or ruler 2. Paper and pencil 3. Classroom objects (benches, desks, windows, doors, etc.)
Methodology	1. Direct Instruction: The Teacher introduces the concept of perim examples and uses diagrams. 2. Hands-on Practice: Students work on exercises individually or ir calculate the perimeter of different shapes.
Session Duration	90 minutes

Introduction activity (10 minutes):

1. Engage students: Ask, “What do you think ‘perimeter’ means?”

2. Hook Question: “If you walked all the way around your backyard, what are you measuring?” (Introduce the idea of perimeter.)
3. Define Perimeter: The distance around a 2D shape.
4. Show visuals of different shapes and identify their sides.

Main Activity (70 minutes):

Teach formulas: (10 minutes)

Rectangle: P = 2(l + w)

AD_4nXdWM51Kb5-tLP_7HzaNwanFdFKpceLeRcP_q6S6Yt7_W3D3CkjjIs5rpO_Kno9UemmJUK4dw7FGI

Square: P = 4 × side

AD_4nXfHlIACXSHMsbk__ys6BK-rihdvXBVe-j5OO9hY6Wjnsm4J7MemyGmcIPbN3Yq-urGJlEi_dctHnRxlJ

Triangle: P = a + b + c

AD_4nXexyIOTTmIIPl6SfjGWzRrFb6FAkUiC-XkaWgu1qCGVTZHFeSa8f0wxksK1yox2KKVn3IN2NET2vY

Use real-life examples: **(15 minutes)**

1. Fencing a garden Problem: Rectangle Garden

Sarah wants to put a fence around her rectangular garden. The length of the garden is 8 meters and the width is 5 meters.

Question: What is the total length of fencing Sarah needs?
Answer: Perimeter = 2 × (Length + Width) = 2 × (8 + 5) = 2 × 13 = 26 meters

2. Square Chalkboard Problem:

A chalkboard in the classroom is square and each side measures 5 feet.

Question: What is the total length of trim needed to go around the board?
Answer: Perimeter = 4 × 5 = 20 feet

3 Triangle

Question: A triangle has sides that measure 6 cm, 7 cm, and 5 cm. What is the perimeter?

Solution: Perimeter = 6 + 7 + 5 = 18 cm

Independent Practices (25 minutes)

Rectangle Problem

A rectangle has a length of 8 cm and a width of 5 cm. What is its perimeter?

Solution:

Perimeter = 2 × (length + width) = 2 × (8 + 5) = 2 × 13 = 26 cm

Square Problem

Each side of a square is 9 meters. What is the perimeter of the square?

Solution:

Perimeter = 4 × side = 4 × 9 = 36 meters

Square Tile

One square floor tile has sides that measure 30 cm.

Question: What is the perimeter of the tile?

Solution:

Perimeter = 4 × 30 = 120 cm

Triangle Problem

A triangle has sides that measure 6 cm, 7 cm, and 5 cm. What is the perimeter?

Solution:

Perimeter = 6 + 7 + 5 = 18 cm

Triangular Flower Bed

A triangular flower bed has three sides that measure 7 feet, 9 feet, and 6 feet.

Question: What is the total length of the fencing needed for the flower bed?

Solution:

Perimeter = 7 + 9 + 6 = 22 feet

Irregular Shape Problem

A shape has sides measuring 3 cm, 4 cm, 5 cm, 2 cm, and 6 cm. What is the total perimeter?

Solution:

Perimeter = 3 + 4 + 5 + 2 + 6 = 20 cm

Missing Side Problem

A rectangle has a length of 14 m. The perimeter is 46 m. What is the width?

Solution:

Perimeter = 2 × (length + width)

46 = 2 × (14 + width)

46 = 28 + 2 × width

46 - 28 = 18

2 × width = 18 → width = 9 meters

Game Time (20 minutes)

Instruction:

- Ask the children what they see in the farmhouse.
- Give them only the questions you have given them, and explain the questions in a way that will lead them to the answer.
- These problems should be divided into 4 papers and given to each group.
- Divide them into four groups and give the same topics to two groups..

1. Group 1 - farm house
2. Group 2 - classroom
3. Group 3- farm house
4. Group 4- classroom

Farmhouse related problems

1. Fencing or Walls

Problem: You want to fence the entire perimeter of your farmhouse which is 100m long and 60m wide.
Question: How much fencing is needed?
Solution: Perimeter = 2 × (100 + 60) = 320 □□□□□□□□

2. Gates

Problem: You plan to install a gate on each side of a square farmhouse (each side 75 meters).
Question: What is the distance between each gate if equally spaced?
Solution: Perimeter = 4 × 75 = 300 meters
Distance between gates = 300 ÷ 4 = 75 meters

3. Paths or Roads

Problem: A walking path is to be laid around the edge of the farmhouse (perimeter = 280 meters).
Question: If it costs ₹50 per meter to build the path, what is the total cost?
Solution: 280 × 50 = ₹14,000

4. Animal Pens or Shelters

Problem: You plan to build 3 animal pens along one 90-meter side of the perimeter, spaced equally.
Question: How long is each pen (if no space between)?
Solution: 90 ÷ 3 = 30 meters per pen

5. Hedges or Trees

Problem: You are planting trees every 10 meters along a 240-meter perimeter.
Question: How many trees do you need?
Solution: 240 ÷ 10 = 24 trees

6. Water Channels or Ditches

Problem: You want to dig a drainage ditch along the full perimeter (300 meters).
Question: How much digging is required?

Solution: 300 meters of ditch

Classroom related problems

1. Walls

Problem: The classroom is rectangular, with a length of 8 meters and a width of 6 meters.
Question: What is the perimeter of the classroom?
Solution: Perimeter = 2 × (8 + 6) = 2 × 14 = 28 meters

2. Doors

Problem: There are 2 doors in the classroom, each measuring 1.5 meters wide. If the total perimeter of the classroom is 28 meters.
Question: What is the total width of the doors compared to the perimeter?
Solution: Total width of doors = 2 × 1.5 = 3 meters. The doors take up 3 meters of the perimeter.

3. Windows

Problem: There are 4 windows, each 2 meters wide, placed along the perimeter of the classroom.
Question: What is the total width of all the windows?
Solution: Total width of windows = 4 × 2 = 8 meters

4. Blackboard/Whiteboard

Problem: The classroom has a whiteboard that is 3 meters wide. If you want to place a frame around the whiteboard,
Question: What is the perimeter of the frame?
Solution: Perimeter = 2 × (3 + 1) = 2 × 4 = 8 meters (assuming a 1-meter height for the whiteboard).

5. Decorations or Charts

Problem: You plan to hang charts along 3 walls, with each wall being 5 meters long.
Question: What is the total length of the walls where charts will be hung?
Solution: Total length = 3 × 5 = 15 meter

The team that completes the problems first will win

Review Questions (5 minutes):

Follow up Task (5 minutes):

Home Work

Rectangle Garden:

Lena is planting a rectangular garden that is 9 meters long and 6 meters wide.

Question: How much fencing will she need to go around the garden?

Answer: Perimeter = 2 × (9 + 6) = 2 × 15 = 30 meters

Expected Learning Outcome

Knowledge building

- Formulas for Perimeter
- Definition of Perimeter
- Properties of Shapes

Skill building

- Reading and Understanding Word Problems
- Calculation Accuracy
- Choosing the Right Formula

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