



NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

CLASS: V

SUBJECT: Maths

Prepared By: Poonam Waghela

LESSON- 4 Perimeter, Area and Volume

Pre activity: - let's get started from T.B of ch.4

Exercise 4A

1. Find the perimeter of the following figures.

Solution:

a. Perimeter of hexagon = Sum of all the sides  
 $= 4 + 4 + 6 + 4 + 4 + 6 = 28 \text{ cm}$

b. Perimeter of triangle = Sum of all the sides  
 $= 5 + 6 + 7 = 18 \text{ cm}$

2. Find the perimeter of the squares whose sides are given below.

Solution:

a. 7.2 cm

Perimeter of square =  $4 \times \text{sides} = 4 \times 7.2 = 28.8 \text{ cm}$

b. 4 cm

Perimeter of square =  $4 \times \text{sides} = 4 \times 4 = 16 \text{ cm}$

3. Find the side of the squares with perimeters as given below.

Solution:

a. 68 cm

$$\text{Side of square} = \frac{\text{Perimeter of square}}{4}$$

$$\text{Side of square} = \frac{68}{4} = 17$$

b. 84 cm

$$\text{Side of square} = \frac{\text{Perimeter of square}}{4}$$

$$\text{Side of square} = \frac{84}{4} = 21$$

4. Find the perimeter of rectangles with the following measurements.

Solution:

a. Length = 7 cm; Breadth = 3 cm

$$\begin{aligned} \text{Perimeter of rectangle} &= 2(L + B) = 2(7 + 3) \\ &= 2 \times 10 = 20 \text{ cm} \end{aligned}$$

b. Length = 5.5 cm; Breadth = 2.5 cm

$$\begin{aligned} \text{Perimeter of rectangle} &= 2(L + B) = 2(5.5 + 2.5) \\ &= 2 \times 8 = 16 \text{ cm} \end{aligned}$$

5. Find the length of the rectangles whose perimeters and breadths are given below.

Solution:

a. Perimeter = 14 cm; Breadth = 2 cm

$$\text{Length} = \frac{\text{Perimeter} - (\text{Sum of the breadths})}{2}$$

$$= \frac{14 - (2 + 2)}{2}$$

$$= \frac{14 - 4}{2}$$

$$= \frac{10}{2} = 5$$

Length = 5 cm

b. Perimeter = 26 cm; Breadth = 4 cm

$$\begin{aligned}\text{Length} &= \frac{\text{Perimeter} - (\text{Sum of the breadths})}{2} \\ &= \frac{26 - (4 + 4)}{2} \\ &= \frac{26 - 8}{2} \\ &= \frac{18}{2} = 9\end{aligned}$$

Length = 9 cm

6. Find the breadth of the rectangles whose perimeters and lengths are given below.

**Solution:**

a. Perimeter = 26 cm; Length = 8 cm

$$\begin{aligned}\text{Breadth} &= \frac{\text{Perimeter} - (\text{Sum of the length})}{2} \\ &= \frac{26 - (8 + 8)}{2}\end{aligned}$$

$$= \frac{26 - 16}{2} = \frac{10}{2} = 5$$

Length = 5 cm

b. Perimeter = 28 cm; Length = 10 cm

$$\begin{aligned}\text{Breadth} &= \frac{\text{Perimeter} - (\text{Sum of the length})}{2} \\ &= \frac{28 - (10 + 10)}{2} \\ &= \frac{28 - 20}{2} \\ &= \frac{8}{2} = 4\end{aligned}$$

Length = 4 cm

7. A rectangular garden has a perimeter of 88 m. If the length of the garden is 30 m, what is the breadth of the garden?

**Solution:**

Length of the garden = 30 m

Perimeter of the garden = 88 m

Breadth of the garden = ?

$$\begin{aligned}\text{Breadth} &= \frac{\text{Perimeter} - (\text{Sum of the length})}{2} \\ &= \frac{88 - (30 + 30)}{2} \\ &= \frac{88 - 60}{2} \\ &= \frac{28}{2} = 14\end{aligned}$$

The breadth of the garden is 14 m

8. The boundary of a square garden measures 96 cm. Find each side of the garden.

**Solution:**

Perimeter of the square garden = 96 cm

$$\text{Side of square} = \frac{\text{Perimeter of square}}{4}$$

$$\text{Side of square} = \frac{96}{4} = 24$$

The side if the garden is 24 cm

**Exercise 4B**

1. Find the area of the squares whose sides measure the following.

**Solution:**

a. 5 cm

$$\text{Area of square} = \text{side} \times \text{side} = 5 \times 5 = 25 \text{ sq.cm}$$

b. 8.2 cm

$$\begin{aligned}\text{Area of square} &= \text{side} \times \text{side} = 8.2 \times 8.2 \\ &= 67.24 \text{ sq.cm}\end{aligned}$$

c. 4.7 cm

$$\begin{aligned}\text{Area of square} &= \text{side} \times \text{side} = 4.7 \times 4.7 \\ &= 22.09 \text{ sq.cm}\end{aligned}$$

d. 9.3 cm

$$\begin{aligned}\text{Area of square} &= \text{side} \times \text{side} = 9.3 \times 9.3 \\ &= 86.49 \text{ sq.cm}\end{aligned}$$

2. Find the area of the rectangles with the following measurements.

**Solution:**

a. Length = 5.5 cm; Breadth = 3 cm

$$\text{Area of rectangle} = L \times B = 5.5 \times 3 = 16.5 \text{ sq.cm}$$

b. Length = 8.1 cm; Breadth = 2.5 cm

$$\begin{aligned}\text{Area of rectangle} &= L \times B = 8.1 \times 2.5 \\ &= 20.25 \text{ sq.cm}\end{aligned}$$

3. Find the length of rectangles whose areas and breadths are as follows.

**Solution:**

a. Area = 60 sq. cm; Breadth = 5 cm

$$\begin{aligned}\text{Length} &= \frac{\text{Area}}{\text{Breadth}} \\ &= \frac{60}{5} = 12 \text{ cm}\end{aligned}$$

b. Area = 94.3 sq. cm; Breadth = 8.2 cm

$$\begin{aligned}\text{Length} &= \frac{\text{Area}}{\text{Breadth}} \\ &= \frac{94.3}{8.2} = 11.5 \text{ cm}\end{aligned}$$

4. Find the breadth of rectangles whose areas and lengths are as follows.

**Solution:**

- a. Area = 40 sq. cm; Length = 8 cm

$$\begin{aligned} \text{Breadth} &= \frac{\text{Area}}{\text{Length}} \\ &= \frac{40}{8} = 5 \text{ cm} \end{aligned}$$

- b. Area = 112.5 sq. cm; Length = 12.5 cm

$$\begin{aligned} \text{Breadth} &= \frac{\text{Area}}{\text{Length}} \\ &= \frac{112.5}{12.5} = 9 \text{ cm} \end{aligned}$$

5. What is the area of a piece of land with length 250 m and breadth 200 m?

**Solution:**

Length of the land = 250 m

Breadth of the land = 200 m

Area of the land =  $L \times B = 250 \times 200 = 50000$  sq. m

The area of the land is 50,000 sq. m

6. Find the difference between the area of a square with side 12 cm and area of rectangle with length 9 cm and breadth 5 cm.

**Solution:**

Area of the square = side  $\times$  side =  $12 \times 12 = 144$  sq. cm

Area of the rectangle =  $L \times B = 9 \times 5 = 45$  sq. cm

The difference between the area of square and rectangle =  $144 - 45 = 99$  sq. cm

7. What is the area of a square tabletop with side 8 m?

**Solution:**

The area of square tabletop = side  $\times$  side =  $8 \times 8 = 64$  sq. m

The area of square tabletop is 64 sq. m

8. Find the area of the given triangles. The side of each small square is 1 unit.

**Solution:**

a. Area of the triangle =  $\frac{1}{2} \times \text{length} \times \text{breadth}$   
 $= \frac{1}{2} \times 5 \times 5 = \frac{25}{2} = 12.5$  sq. unit

b. Area of the triangle =  $\frac{1}{2} \times \text{length} \times \text{breadth}$   
 $= \frac{1}{2} \times 6 \times 3 = \frac{18}{2} = 9$  sq. unit

c. Area of the triangle =  $\frac{1}{2} \times \text{length} \times \text{breadth}$   
 $= \frac{1}{2} \times 7 \times 5 = \frac{35}{2} = 17.5$  sq. unit

9. Find the area of a triangle with the following lengths and breadths.

**Solution:**

- a. Length, 8 cm; Breadth 6 cm

Area of the triangle =  $\frac{1}{2} \times \text{length} \times \text{breadth}$   
 $= \frac{1}{2} \times 8 \times 6 = \frac{48}{2} = 24$  sq. cm

- b. Length 11 cm; Breadth 8 cm

Area of the triangle =  $\frac{1}{2} \times \text{length} \times \text{breadth} =$   
 $\frac{1}{2} \times 11 \times 8 = \frac{88}{2} = 44$  sq. cm

#### Exercise 4C

1. Given that the volume of each small cube is 1 cu. cm. Find the volume of the solids by counting the number of cubes.

**Solution:**

- a. Volume of 1 cube = 1 cu. cm

Number of cubes = 6

Total volume =  $6 \times 1 = 6$  cu. cm

- b. Volume of 1 cube = 1 cu. cm

Number of cubes = 11

Total volume =  $11 \times 1 = 11$  cu. cm

2. Find the volume of the following solids.

**Solution:**

- a. Volume of the cube = side  $\times$  side  $\times$  side  
 $= 5 \times 5 \times 5 = 125$  cu. cm

- b. Volume of the cuboid =  $l \times b \times h$   
 $= 12 \times 2 \times 6 = 144$  cu. cm

3. Find the volume of a cuboid with the following measurements.

**Solution:**

Length = 4.5 cm, Breadth = 2 m / 200 cm, Height = 50 cm

Volume of the cuboid =  $l \times b \times h = 4.5 \times 200 \times 50 = 45,000$  cu. cm

4. Find the volume of the cubes whose sides are of the following lengths.

**Solution:**

- a. 3.5 cm

Volume of the cube = side  $\times$  side  $\times$  side =  $3.5 \times 3.5 \times 3.5 = 42.875$  cu. cm

b. Volume of 1 cube = 1 cu. cm

Number of cubes = 11

Total volume =  $11 \times 1 = 11$  cu. cm

2. Find the volume of the following solids.

**Solution:**

a. Volume of the cube = side  $\times$  side  $\times$  side  
 $= 5 \times 5 \times 5 = 125$  cu.cm

b. Volume of the cuboid =  $l \times b \times h$   
 $= 12 \times 2 \times 6 = 144$  cu. cm

3. Find the volume of a cuboid with the following measurements.

**Solution:**

Length = 4.5 cm, Breadth = 2 m / 200 cm, Height = 50 cm

Volume of the cuboid =  $l \times b \times h = 4.5 \times 200 \times 50$   
 $= 45,000$  cu.cm

4. Find the volume of the cubes whose sides are of the following lengths.

**Solution:**

a. 3.5 cm

Volume of the cube = side  $\times$  side  $\times$  side =  $3.5 \times 3.5 \times 3.5 = 42.875$  cu.cm

b. 5 cm

Volume of the cube = side  $\times$  side  $\times$  side  
 $= 5 \times 5 \times 5 = 125$  cu.cm

5. Find the volume (in cubic metres) of a cuboid whose length is 150 cm, breadth is 100 cm and height is 180 cm.

**Solution:**

Length = 150 cm = 1.5 m

Breadth = 100 cm = 1 m

Height = 180 cm = 1.8 m

Volume of cuboid =  $L \times B \times H = 1.5 \times 1 \times 1.8$   
 $= 2.7$  cu.m

6. Find the volume (in cubic centimetres) of a cube whose each side is 2.5 m.

**Solution:**

Side = 2.5 m = 250 cm

Volume = side  $\times$  side  $\times$  side  
 $= 250 \times 250 \times 250$   
 $= 1,56,25,000$  cu. cm

**Exercise 4D**

1. A piece of land is 600 m long and 400 m wide. How much wire will be needed to put around this land?

**Solution:**

Length of the land = 600 m

Breadth of the land = 400 m

Perimeter of the land =  $2(L + B) = 2(600 + 400)$   
 $= 2 \times 1000 = 2000$  m

2000 m wire need to put around the land.

2. Raghav walks around a square park every evening. He covers 600 m in one complete round of the park. What is the measure of each side of the park? How much distance will he cover in 3 rounds?

**Solution:**

If Raghav covers 600 m in one round of park

Hence, perimeter of the square park = 600 m

Perimeter of square =  $4 \times$  side

Side of the square

$$= \frac{\text{Perimeter of square}}{4} = \frac{600}{4} = 150 \text{ m}$$

Distance covered by Raghav in one round of park = 600 m

Distance covered by Raghav in 3 rounds of park =  $600 \text{ m} \times 3 = 1800$  m.

3. The side of a square-shaped bed is 200 cm. Meg wants to place a carpet along boundary of the bed. What will be the length of the carpet needed?

**Solution:**

Perimeter of square-shaped bed =  $4 \times 200 \text{ cm} = 800$  cm

Hence, 800 cm of carpet is required to place along the boundary of the bed.

4. A floor 40 m by 15 m is to be covered with tiles. What is the area of the tiles required?

**Solution:**

Area of the tiles = Length  $\times$  Breadth  
 $= 40 \times 15 = 600$  sq.m

The area of the tiles required is 600 sq.m

5. A tabletop, 5.5 m by 2 m should be painted. What is the area that must be painted?

**Solution:**

$$\begin{aligned}\text{Area of the tabletop} &= \text{Length} \times \text{Breadth} \\ &= 5.5 \times 2 = 11 \text{ sq.m}\end{aligned}$$

Hence, the area must be painted is 11 sq.m

6. A tank has a length of 8 m, breadth of 6 m and depth of 7 m. What is the volume of water that can be stored in it?

**Solution:**

$$\begin{aligned}\text{The volume of the cuboid} &= \text{Length} \times \text{Breadth} \times \text{Height} \\ &= 8 \times 6 \times 7 = 336 \text{ cu.m}\end{aligned}$$

336 cu.m of water can be stored in the tank.

7. Which one has a larger volume - a cuboid with length 1.5 m, breadth 0.8 m and height 0.2 m or a cube of length 0.5 m?

**Solution:**

$$\begin{aligned}\text{The volume of the cuboid} &= \text{Length} \times \text{Breadth} \times \text{Height} \\ &= 1.5 \times 0.8 \times 0.2 = 0.24 \text{ cu.m}\end{aligned}$$

$$\begin{aligned}\text{The volume of the cube} &= \text{side} \times \text{side} \times \text{side} \\ &= 0.5 \times 0.5 \times 0.5 = 0.125 \text{ cu.m}\end{aligned}$$

Volume of cuboid is larger than cube.

Post Activity: - write key concept from T.B of ch.4

Subject Teacher

HOD

Coordinator

principal