ODM EDUCATIONAL GROUP
Changing your Tomorrow

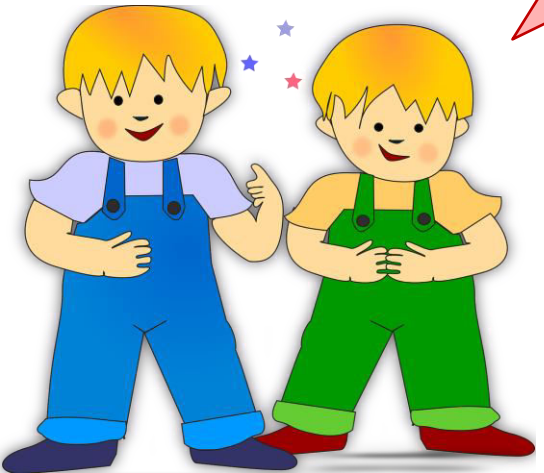
SESSION	**: 1**
CLASS	**: IV**
SUBJECT	**: MATHEMATICS**
CHAPTER NUMBER	**: 14**
CHAPTER NAME	**: PERIMETER AND AREA**
SUBTOPIC	**: CONCEPT OF PERIMETER AND PERIMETER OF DIFFERENT GEOMETRICAL SHAPES**

Website: www.odmegroup.org
Email: info@odmps.org
Toll Free: 1800 120 2316
Sishu Vihar, Infocity Road, Patia, Bhubaneswar- 751024

PERIMETER

Do you know what is perimeter?

Yes, the **length** of the **boundary** of a **closed figure** is call its **perimeter**. It will be equal to the sum of all the sides of a **closed figure**. See the bellow picture.



PERIMETER

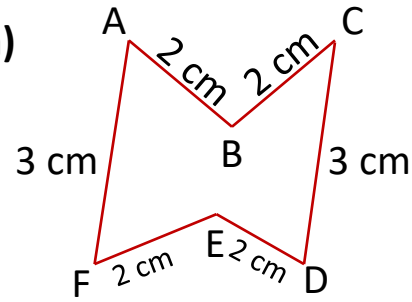
Example : Find the perimeter of the following.

a) Its perimeter will be the sum of all sides of the figure.

Perimeter = AB + BC + CD + DE + EF + FA =

= 2 + 2 + 3 + 2 + 2 + 3 = **14 cm**

(a)

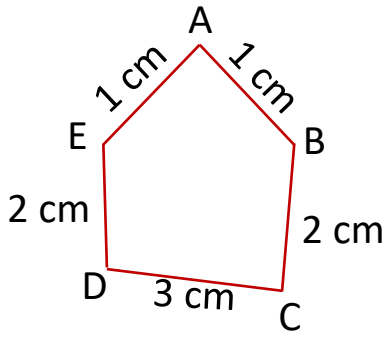


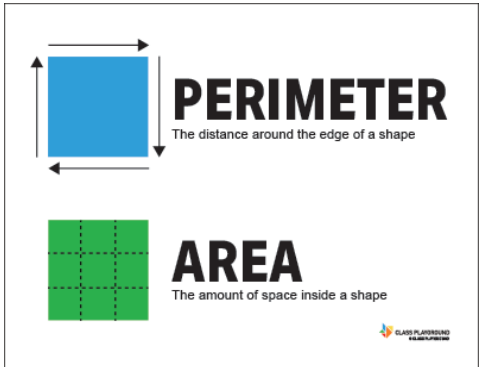
b) Its perimeter will be the sum of all sides of the figure.

Perimeter = AB + BC + CD + DE + EA =

= 1 + 2 + 3 + 2 + 1 = **9 cm**

(a)





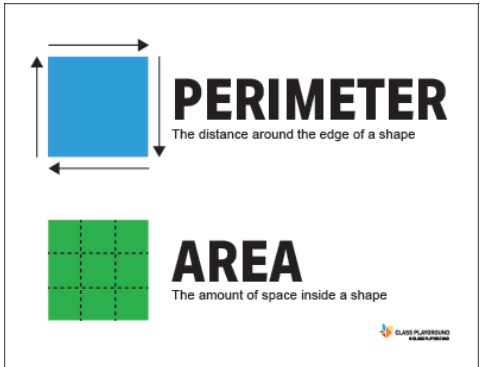
PERIMETER

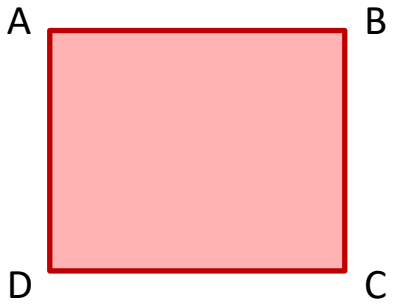
Perimeter of a square

A square is a figure in which all the sides are equal.

Perimeter of a square is the sum of all four equal sides.

∴ Perimeter of a square = **4 × length of one side.**

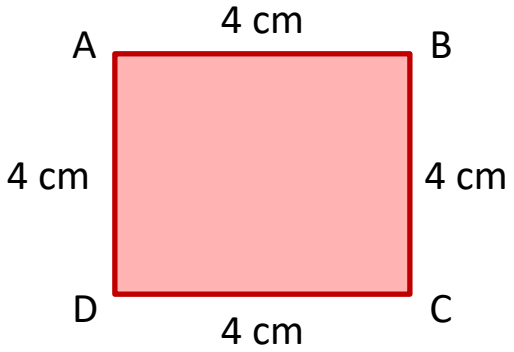




PERIMETER

Perimeter of a square

Example : 1 Find the perimeter of a square of side 4 cm.

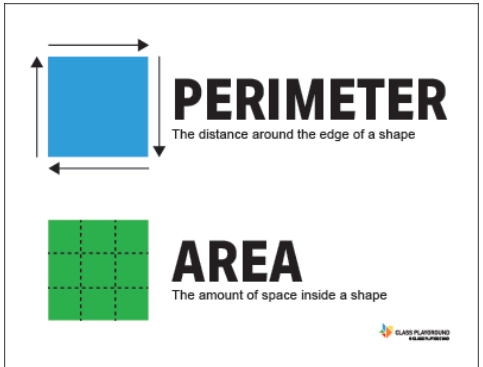


Solution : Length of one side = 4 cm

Perimeter = 4 × length of one side

= 4 × 4

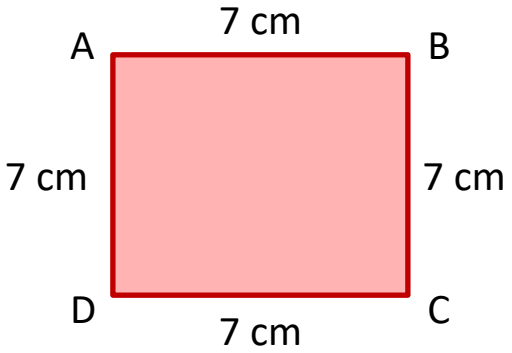
= **16 cm**



PERIMETER

Perimeter of a square

Example : 2 Find the perimeter of a square of side 7 cm.

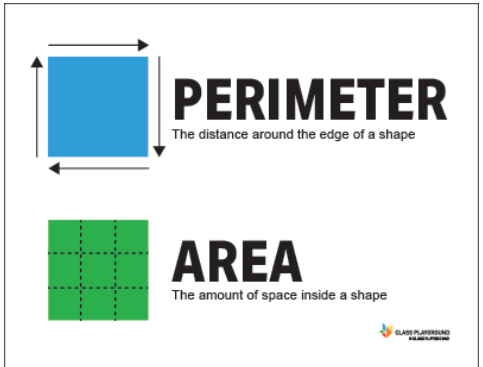


Solution : Length of one side = 7 cm

Perimeter = 4 × length of one side

= 4 × 7

= **28 cm**



PERIMETER

Perimeter of a rectangle

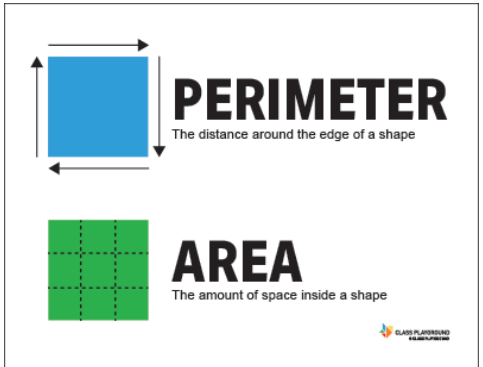
Rectangle is a closed figure having **equal opposite sides**. The longer side is known as **length** and the smaller side is known as **breadth**.

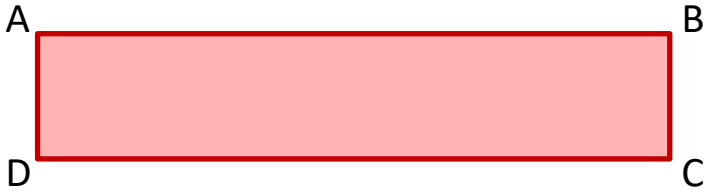
Perimeter of a rectangle = AB + BC + CD + DA

= AB + AB + BC + BC (as CD = AB and AD = BC)

= 2 AB + 2 BC = **2 (AB + BC)**

∴ Perimeter = **2 × (length + breadth)**



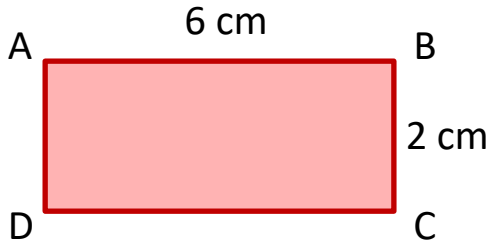


PERIMETER

Perimeter of a rectangle

Example : 1 Find the perimeter of a rectangle of length 6 cm and breadth 2 cm.

Solution : Length = 6 cm, breadth = 2 cm

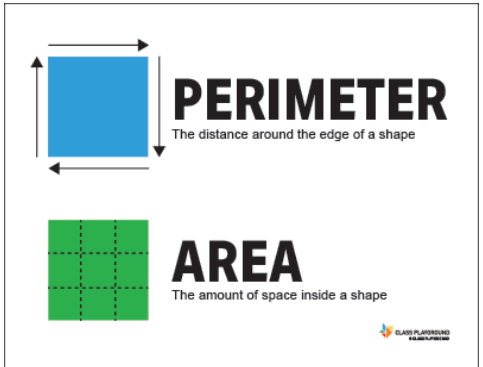


Perimeter = 2 × (length + breadth)

= 2 × (6 + 2)

= 2 × 8

= **16 cm**



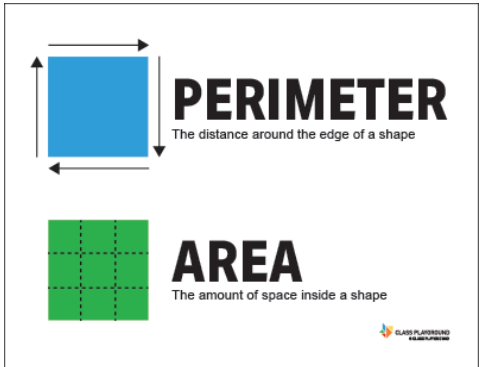
PERIMETER

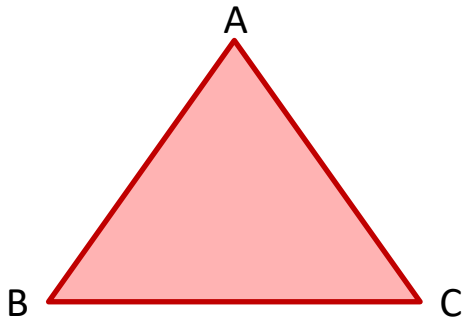
Perimeter of a triangle

Triangle is a three sided closed figure. Perimeter of triangle will be the sum of all its side.

Perimeter of a triangle = AB + BC + CA

$\therefore$ Perimeter = **sum of length of all three sides.**

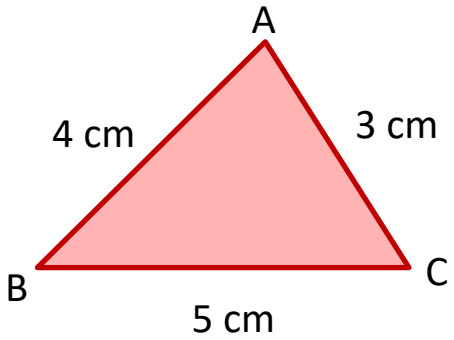




PERIMETER

Perimeter of a triangle

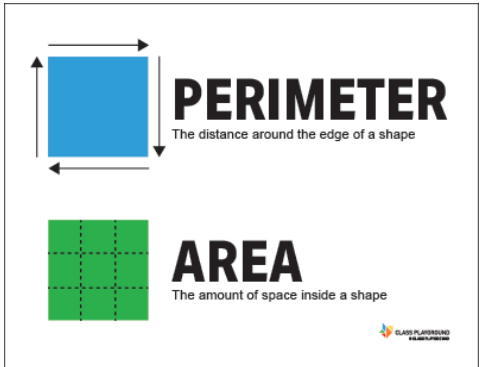
Example : 1 Find the perimeter of the given triangle.



Solution : Perimeter = AB + BC + CA

= 4 + 5 + 3

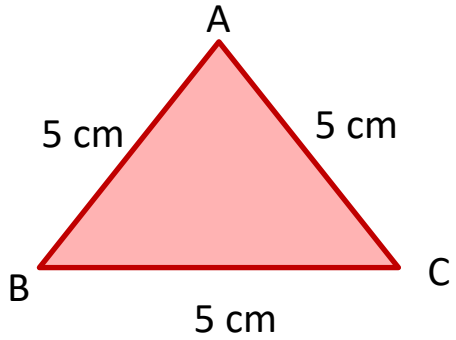
= **12 cm**



PERIMETER

Perimeter of a triangle

Example : 2 Find the perimeter of the given triangle.

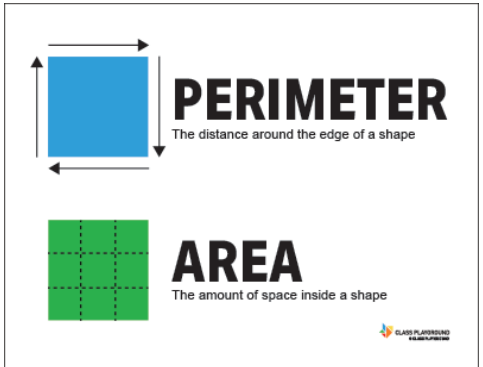


Solution : Side = 5 cm

Perimeter = AB + BC + CA

= 5 + 5 + 5

= **15 cm**

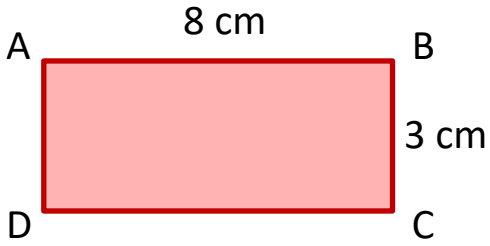


PERIMETER

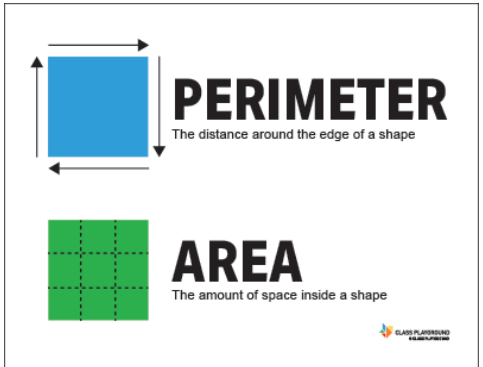
EXERCISE – 14 (A)

1. Find the perimeter of the figures given below.

(a)



Length = 8 cm, breadth = 3 cm



Perimeter = 2 × (length + breadth)

= 2 × (8 + 3)

= 2 × 11

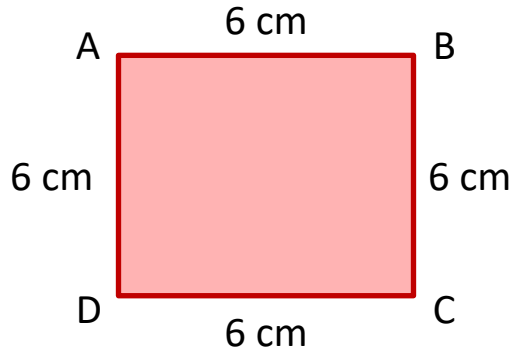
= **22 cm**

PERIMETER

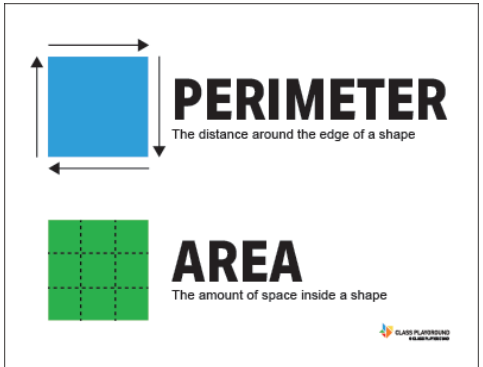
EXERCISE – 14 (A)

1. Find the perimeter of the figures given below.

(b)



Length of one side = 6 cm



Perimeter = 4 × length of one side

= 4 × 6

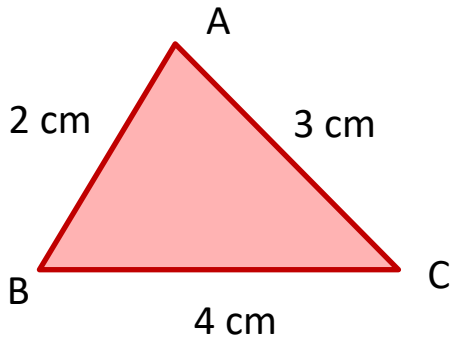
= **24 cm**

PERIMETER

EXERCISE – 14 (A)

1. Find the perimeter of the figures given below.

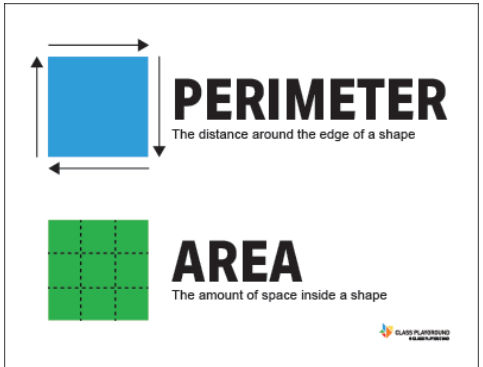
(c)



Perimeter = AB + BC + CA

= 2 + 4 + 3

= **9 cm**



HOME ASSIGNMENT:

- **Complete Exercise – 14 A Q. NO. 1 in your note book.**

LEARNING OUTCOME:

Students are able to understand the meaning of perimeter and perimeter of different geometrical shapes with rules.

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SESSION	**: 2**
CLASS	**: IV**
SUBJECT	**: MATHEMATICS**
CHAPTER NUMBER	**: 14**
CHAPTER NAME	**: PERIMETER AND AREA**
SUBTOPIC	**: PERIMETER, EX-14 A**

PERIMETER

EXERCISE – 14 (A)

2. Find the perimeter of the squares with the following sides:

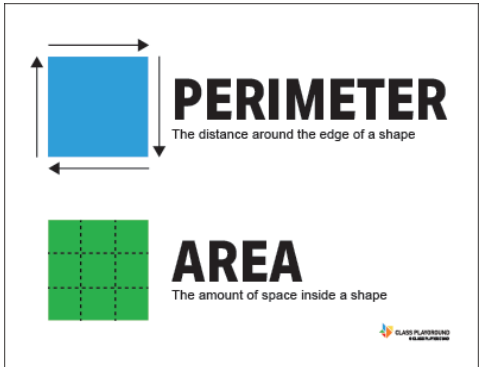
(a) 8 cm = **32 cm**

Length of one side = 8 cm

Perimeter = 4 × length of one side

= 4 × 8

= **32 cm**



PERIMETER

EXERCISE – 14 (A)

2. Find the perimeter of the squares with the following sides:

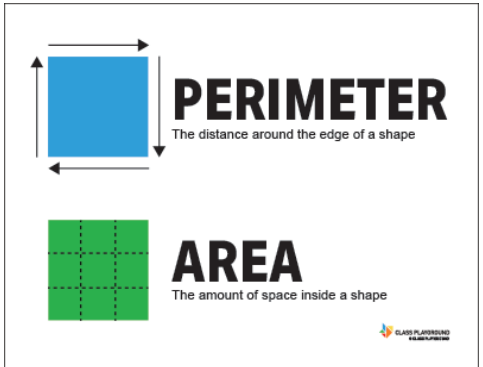
(b) 10 m = **40 m**

Length of one side = 10 cm

Perimeter = 4 × length of one side

= 4 × 10

= **40 m**



PERIMETER

EXERCISE – 14 (A)

3. Find the perimeter of the rectangles with the following dimensions :

(a) Length = 7 cm, breadth = 3 cm **20 cm**

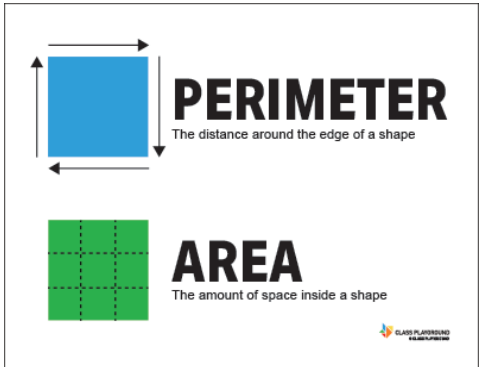
Length = 7 cm, breadth = 3 cm

Perimeter = 2 × (length + breadth)

= 2 × (7 + 3)

= 2 × 10

= **20 cm**



PERIMETER

EXERCISE – 14 (A)

3. Find the perimeter of the rectangles with the following dimensions :

(b) Length = 6 m, breadth = 4 cm **1208 cm**

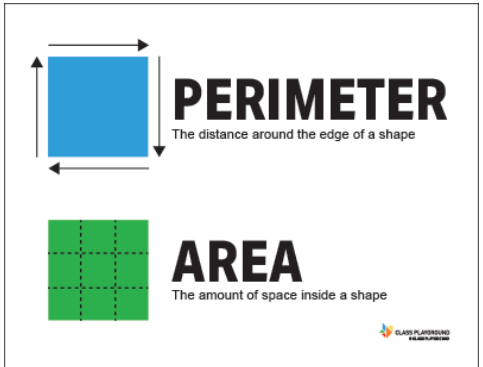
Length = 6 m = 6 X 100= 600 cm, breadth = 4 cm

Perimeter = 2 × (length + breadth)

= 2 × (600 + 4)

= 2 × 604

= **1208 cm**



PERIMETER

EXERCISE – 14 (A)

4. Find the perimeters of the following triangles if the length of each side of the triangle is :

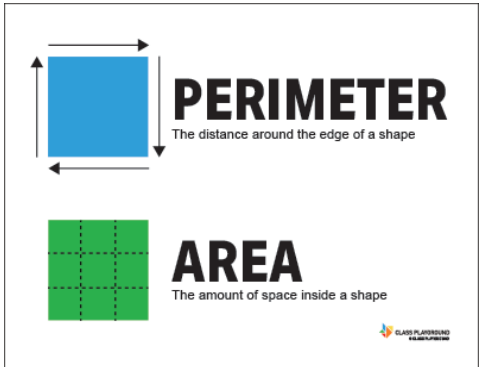
(a) 7 cm **21 cm**

Side = 7 cm

Perimeter = AB + BC + CA

= 7 + 7 + 7

= **21 cm**



PERIMETER

EXERCISE – 14 (A)

4. Find the perimeters of the following triangles if the length of each side of the triangle is :

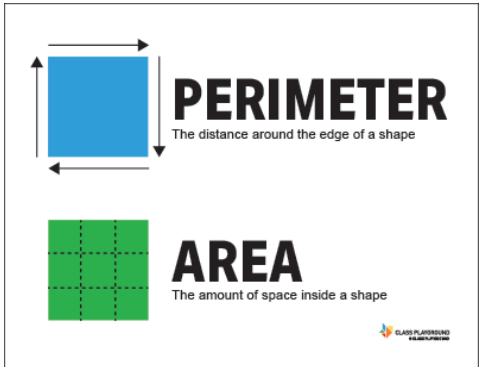
(b) 9 m — **27 m**

Side = 9 m

Perimeter = AB + BC + CA

= 9 + 9 + 9

= **27 m**



PERIMETER

EXERCISE – 14 (A)

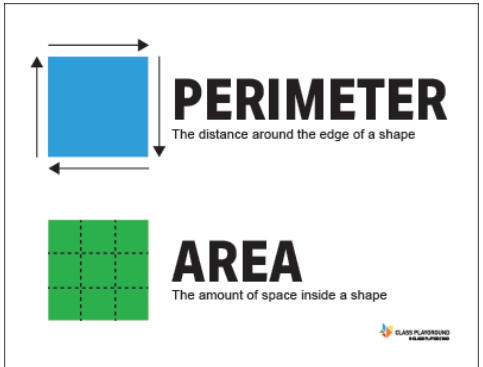
5. Find the perimeter of the triangles with the following dimensions :

(a) AB = 8 cm; BC = 6 cm; CA = 7 cm **21 cm**

Perimeter = AB + BC + CA

= 8 + 6 + 7

= **21 cm**



PERIMETER

EXERCISE – 14 (A)

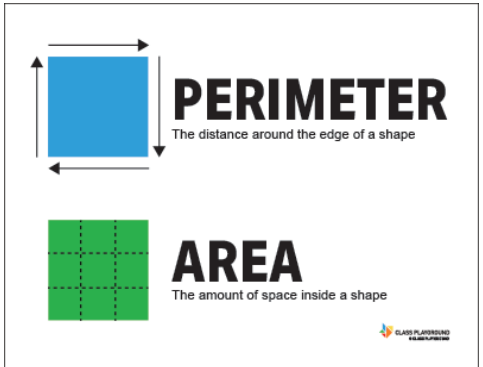
5. Find the perimeter of the triangles with the following dimensions.

(b) AB = 4 cm; BC = 8 cm; CA = 9 cm **21 cm**

Perimeter = AB + BC + CA

= 4 + 8 + 9

= **21 cm**



PERIMETER

EXERCISE – 14 (A)

6. The length of a floor is 60 m and its breadth is 50 m. Find the perimeter of the floor.

The length and breadth is given , so it is a rectangle floor.

Perimeter of rectangle floor = Length = 60 m, breadth = 50 m

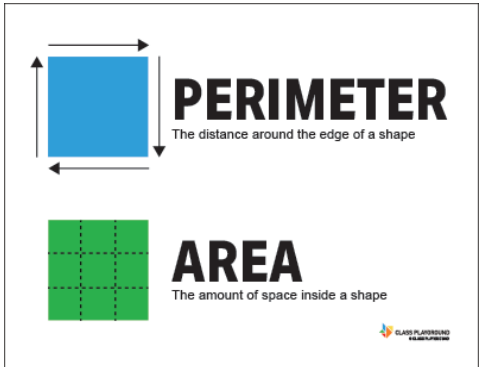
Perimeter = 2 × (length + breadth)

= 2 × (60 + 50)

= 2 × 110

= **220 m**

∴ Perimeter of the floor is **220m**.



PERIMETER

EXERCISE – 14 (A)

7. A cloth is 7 m long and 2 m wide. If Sheena wants to lace it around, how much lace is required?

The length and breadth is given , so it is a rectangle cloth.

Perimeter of rectangle cloth = Length = 7 m, breadth = 2 m

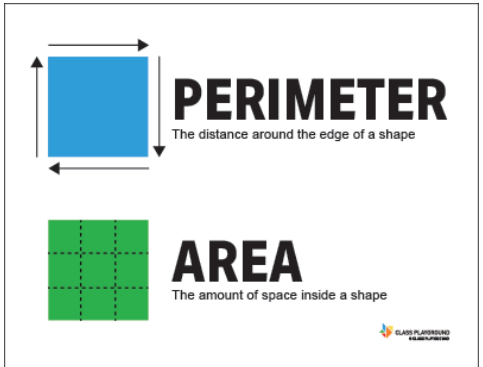
Perimeter = 2 × (length + breadth)

= 2 × (7 + 2)

= 2 × 9

= **18 m**

∴ **18m** cloth is required for lace it around.



PERIMETER

EXERCISE – 14 (A)

8. A table top of wood is of length 150m and breadth 120m. What is its perimeter?

The length and breadth is given , so it is a rectangle table.

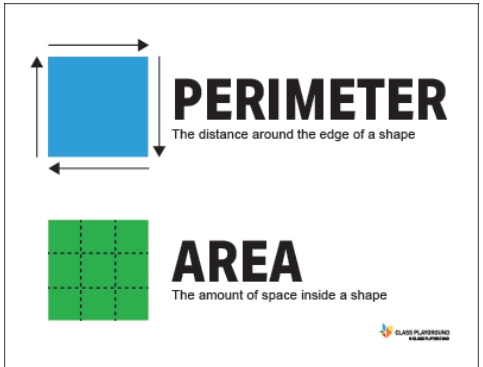
Perimeter of rectangle top wood = Length = 150 m, breadth = 120 m

Perimeter = 2 × (length + breadth)

= 2 × (150 + 120)

= 2 × 270

= **540 m**



∴ **540m** is its perimeter.

PERIMETER

EXERCISE – 14 (A)

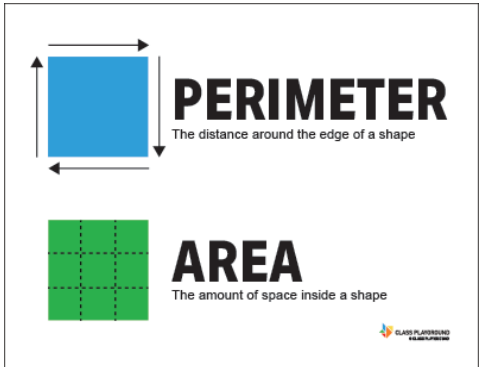
9. A triangle park has its sides of length 200m, 180m, 120m respectively. Calculate the distance travelled by a man if he goes around the park twice.

It is a triangle park.

So perimeter of triangle park = 200m + 180m + 120m

= **500 m**

If a man have to cover twice = **500 m × 2** = **1000 m**



∴ If a man goes around the park twice then he have to cover **1000m**.

PERIMETER

EXERCISE – 14 (A)

10. A square shaped garden is of length 100m. How much wire will be required for fencing around it?

It is a square shape garden.

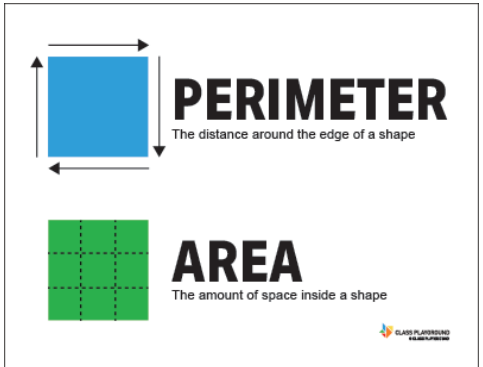
So perimeter of square garden = Length of one side = 100m

Perimeter = 4 × length of one side

= 4 × 100

= **400 m**

∴ **400 m** wire will be required for fencing around it.



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HOME ASSIGNMENT:

- **Complete Exercise – 14 A in your note book.**

LEARNING OUTCOME:

Students are able to understand how to calculate the perimeter of different geometrical shapes by using the rules.

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SESSION	**: 3**
CLASS	**: IV**
SUBJECT	**: MATHEMATICS**
CHAPTER NUMBER	**: 14**
CHAPTER NAME	**: PERIMETER AND AREA**
SUBTOPIC	**: AREA AND UNIT OF AREA, EX-14 B**

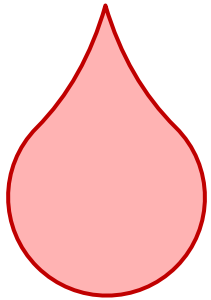
AREA

The surface enclosed by a 2-D or plane figure is known as its **area**.

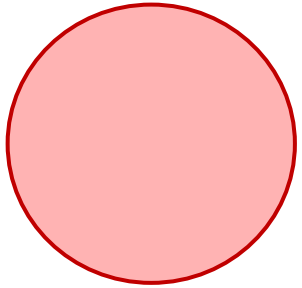
The **shaded regions** in the given figures are their respective **areas**.

Star

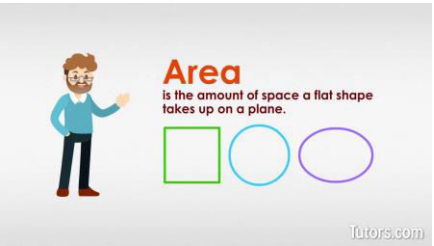
Square



Leaf

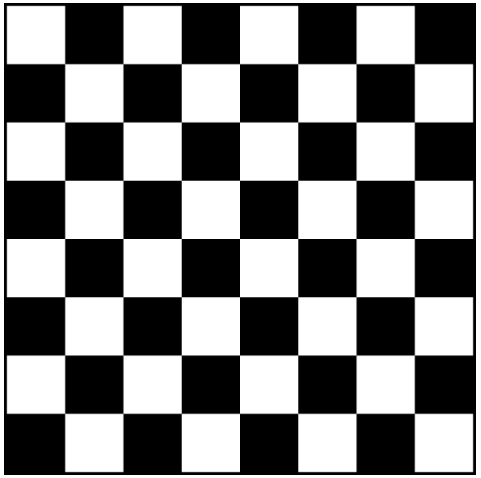


Circle



UNIT OF AREA

We can use any plane figure as a unit to find the area of the required plane region. For example, let us consider a chessboard. It is made up of 64 squares. If we consider 1 square be 64 squares.



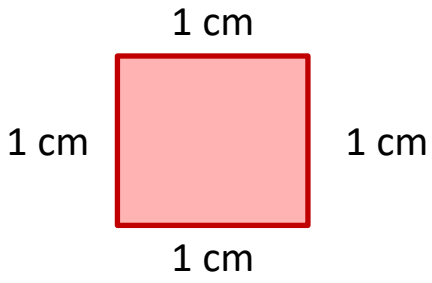
But for purpose of exact measurements, we use standard units of area having fixed dimensions.

The standard units for measuring areas which we generally use are square centimetre and square metre.

UNIT OF AREA

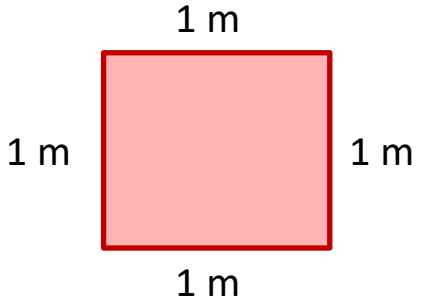
- The area of a square whose side is 1 cm long is one square centimetre.

  It is written as cm^2 or sq. cm.



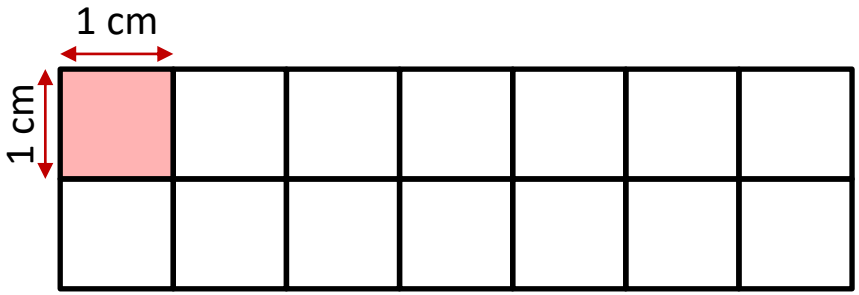
- The area of a square whose side is 1 m long is one square metre.

  It is written as m^2 or sq. m.



UNIT OF AREA

Example : 1 Calculate the area of the figure given below if the area of each square is 1 cm².



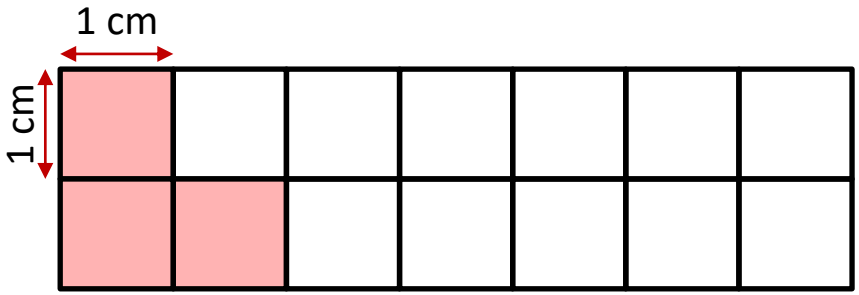
Area of one square = 1 cm × 1 cm = 1 cm².

Number of squares in the figure = 14

∴ Area figure = 1 × 14 = 14 **cm²**.

UNIT OF AREA

Example : 2 Calculate the area of the shaded squares if the dimensions of each square are as given in the figure.



Area of one square = 1 cm × 1 cm = 1 cm².

∴ Area of 3 squares = 3 × 1 cm² = **3 cm²**

UNIT OF AREA

Example : 1 A floor of a room is covered with square tiles of side 1 m. the floor consists of 30 square tiles. Find the area of the floor.

Area of 1 tile = 1 m × 1 m = 1 m²

∴ Area of the floor = area of 1 × number of tiles

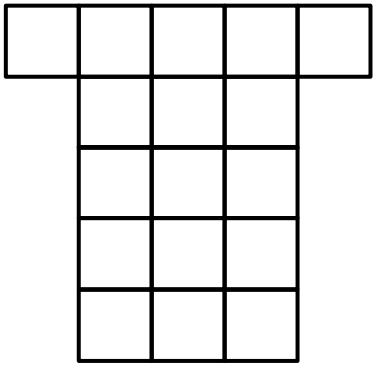
= 1 m² × 30 = **30 m²**

PERIMETER

EXERCISE – 14 (B)

1. Find the area of the following figures if each square has an area of 1 cm².

(a)



Area : **17 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

Number of squares in the figure = 17

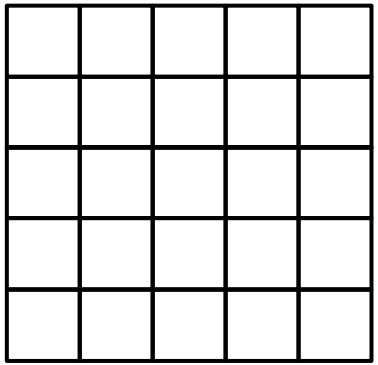
∴ Area figure = 1 × 17 = **17 cm²**.

PERIMETER

EXERCISE – 14 (B)

1. Find the area of the following figures if each square has an area of 1 cm².

(b)



Area : **25 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

Number of squares in the figure = 25

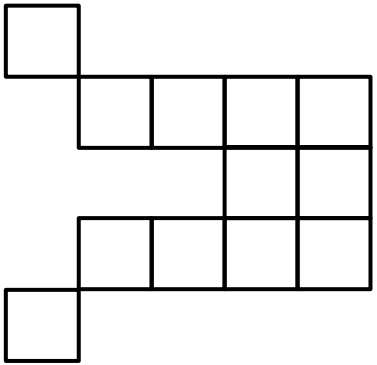
∴ Area figure = 1 × 25 = **25 cm²**.

PERIMETER

EXERCISE – 14 (B)

1. Find the area of the following figures if each square has an area of 1 cm².

(c)



Area : **12 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

Number of squares in the figure = 12

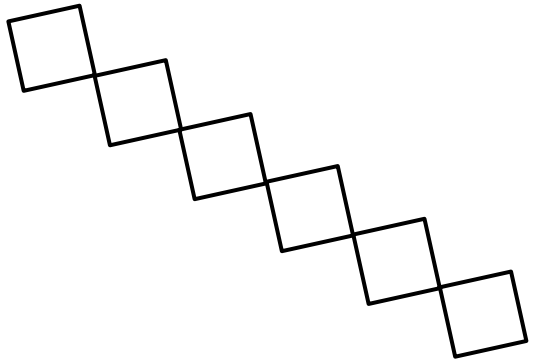
∴ Area figure = 1 × 12 = **12 cm²**.

PERIMETER

EXERCISE – 14 (B)

1. Find the area of the following figures if each square has an area of 1 cm².

(d)



Area : **6 cm²**

Area of one square = 1 cm × 1 cm = 6 cm².

Number of squares in the figure = 6

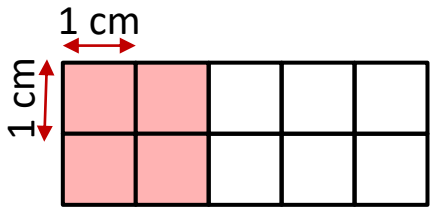
∴ Area figure = 1 × 6 = **6 cm²**.

PERIMETER

EXERCISE – 14 (B)

2. Find the area of the shaded region.

(a)



Area : **4 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

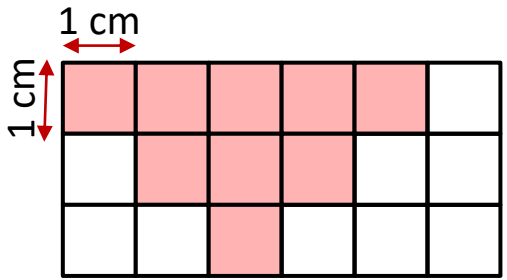
∴ Area of 4 squares = 4 × 1 cm² = **4 cm²**

PERIMETER

EXERCISE – 14 (B)

2. Find the area of the shaded region.

(b)



Area : **9 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

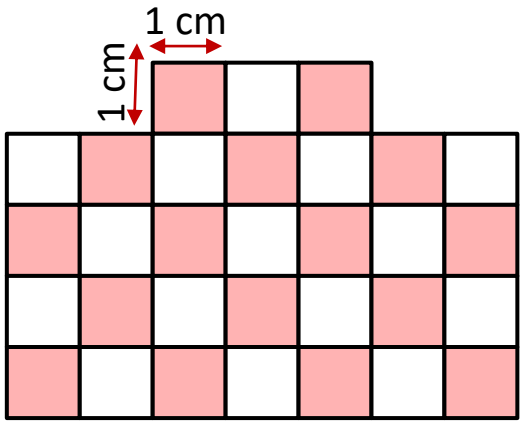
∴ Area of 9 squares = 9 × 1 cm² = **9 cm²**

PERIMETER

EXERCISE – 14 (B)

2. Find the area of the shaded region.

(c)



Area : **16 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

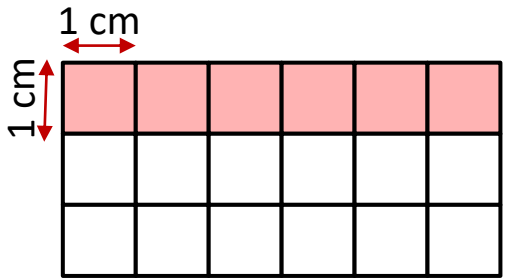
∴ Area of 16 squares = 16 × 1 cm² = **16 cm²**

PERIMETER

EXERCISE – 14 (B)

2. Find the area of the shaded region.

(d)



Area : **6 cm²**

Area of one square = 1 cm × 1 cm = 1 cm².

∴ Area of 6 squares = 6 × 1 cm² = **6 cm²**

LEARNING OUTCOME:

Students are able to understand the meaning of area, unit of area and how to find the area of different shapes.

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