

Chapter- 8

Geometry

STUDY NOTES

This lesson will help you to know :

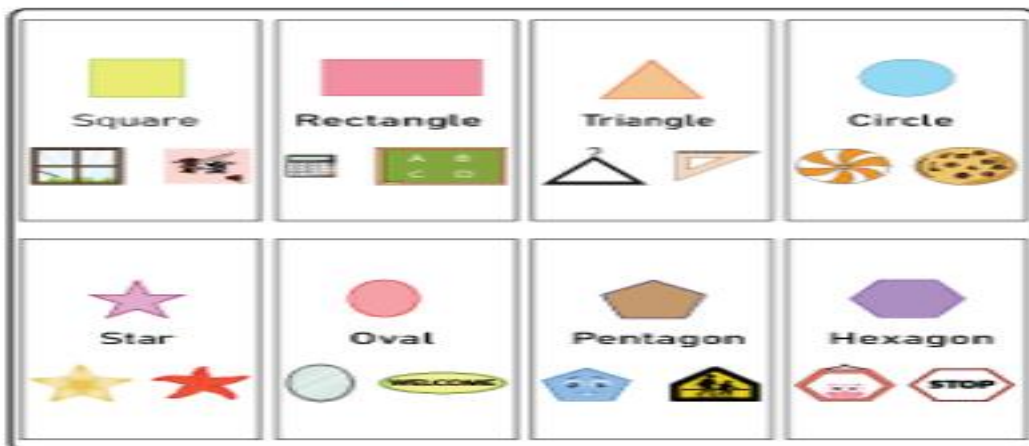
- About the 2-D shapes.
- About their sides and vertices.
- About the 3-D shapes
- About the face, edge and vertex of 3-D shapes.
- Study of different 3-D shapes.
- About Straight lines and curved lines.
- How we can make 2-D shapes by paper folding method.

- **About 2-D shapes**

A flat surface which extends in all directions is called a **plane** . Figures that lie completely in a plane surface are said to be 2-D figures or two dimensional figure as they have only length and width. "Let us Revise"

Name : _____





2D Shapes in Real-Life



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• About their sides and vertices

2-D shapes only have a flat surface and have area. They have both sides and vertices, except for a circle. Its vertex is the point at which its two sides meet.

2D Shapes	Drawing	Number of Sides	Number of Corners (vertices)
Square		4	4
Triangle		3	3
Circle		0	0
Rectangle		4	4

• Exercise

Answer the following questions:-

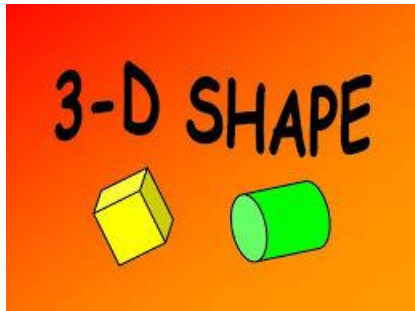
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|--|----------------------|
| 1. Which Shape has 3 vertices? | Triangle |
| 2. Which shape has all 4 sides equal? | Square |
| 3. Which shape has its opposite sides equal? | Rectangle |
| 4. How many sides does a hexagon have? | Six |
| 5. Which shape has unequal diagonals? | Rhombus |
| 6. How many vertices does a Rhombus have? | four |
| 7. Name 2 shapes having no sides. | Circle and Oval |
| 8. Name 2 shapes having equal diagonals. | Rectangle and Square |








- Let's learn about 3-d shapes.

Shapes that have length, width and height are called 3-D shapes. 3-D shapes do not lie in a single plane. 3-D shapes or three dimensional occupy space and can either have flat faces, curved faces or both.

e.g. cube, cuboid, cylinder, sphere and cone.



Properties of 3-D shapes:-

What are the properties of a cube, cuboid, sphere, cylinder, and cone ?				
	Faces	Edges	Corners	
Cube 	6	12	8	All square flat faces Can slide
Cuboid 	6	12	8	Rectangular faces Can have square faces can slide
Sphere 	1	0	0	One curved face Can roll
Cylinder 	3	2	0	Two flat faces One curved face can roll and slide
Cone 	2	1	1	One curved face One flat face Can roll and slide

Exercise:-

Exercise

A. Circle the correct shape of the following objects.

1.



Sphere Cuboid Rectangle

2.



Cube Cuboid Square

3.



Sphere Circle Cylinder

4.



Triangle Cone Cylinder

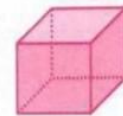
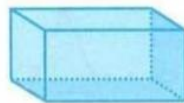
5.



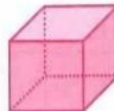
Cylinder Cone Rectangle

B. Circle the object having :

1. A curved surface.



2. 12 edges and 8 vertices.



3. 1 vertex.



4. Only flat faces.



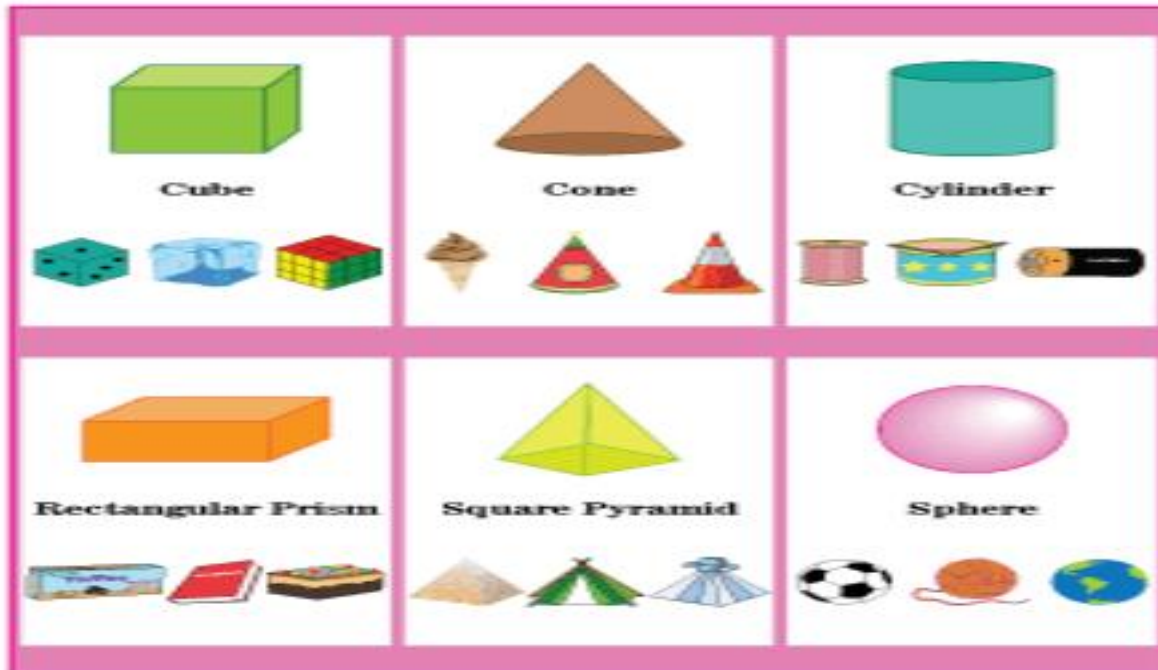
5. No vertex.



Let us look at some objects around us related to 3-D shapes.

Maths is all around us, everything is related to some shapes, let's see some examples related to 3-D shapes around us.

3D Shapes in Real-Life



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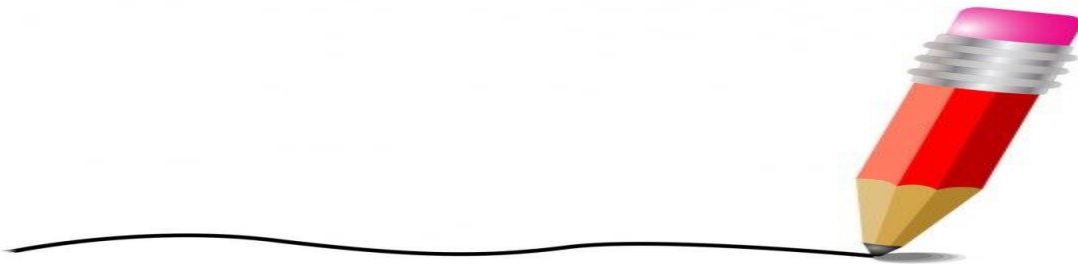
- **About Straight lines and curved lines:**

If we hold a string tightly between our two hands , we get a straight line,we can draw straight line using a ruler or any straight edge like the edge of notebook, pencil box etc.



Curved lines-

When we hold a string loosely between two hands, we get a curved line.



We can also draw :-

A vertical line



A horizontal line



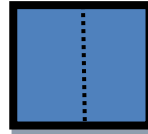
A slanting line



- Making 2-D shapes using paper cutting:-

Procedure:-

- 1) Take a square paper, then fold it at the middle. What shape do you get?



You will get a rectangle.



- 2) Now, fold the rectangle again at the middle as shown.



You will get a square again.



- 3) Next, fold the square through opposite corners.



You will get a triangle.

