

## Chapter- 8

# Geometry

## STUDY NOTES

**LEARNING OBJECTIVES:**

- 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.

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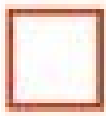


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## 2D Shapes in Real-Lif



• **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 Co
Square		4	
Triangle		3	
Circle		0	

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


• **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:-

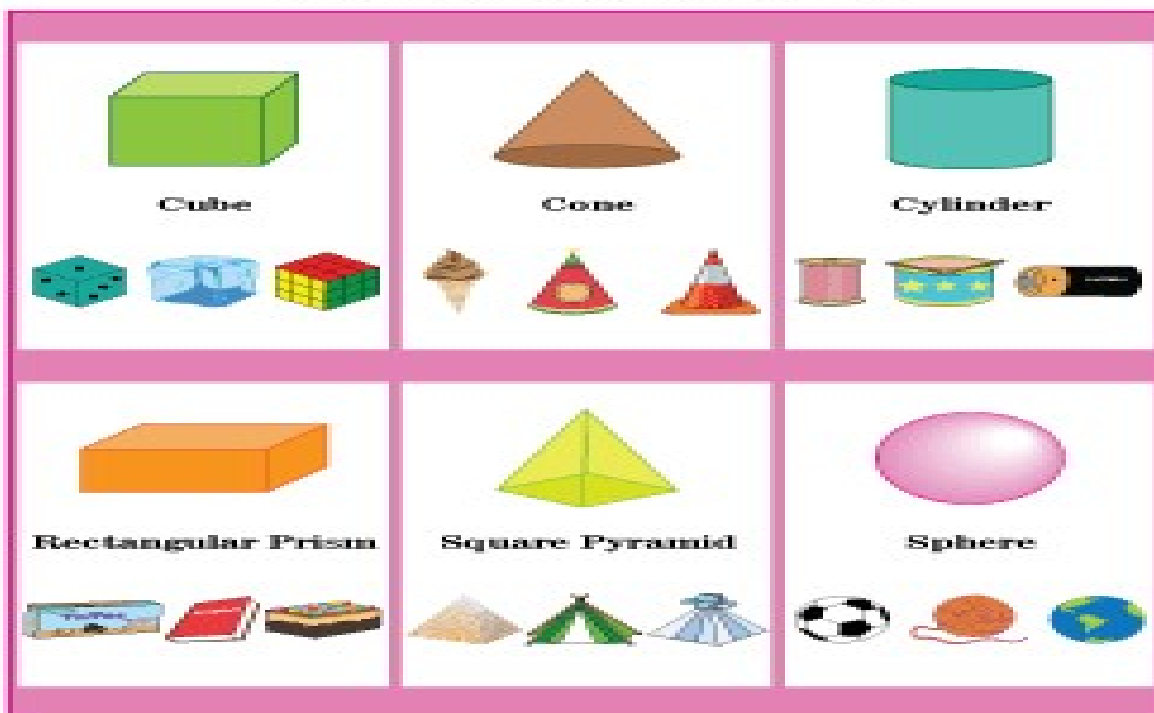
What are the properties of a cube, cuboid, sphere, cylinder, and cone?				
		Faces	Edges	Corners
Cube		6	12	8
Cuboid		6	12	8
Sphere		1	0	0
Cylinder		3	2	0

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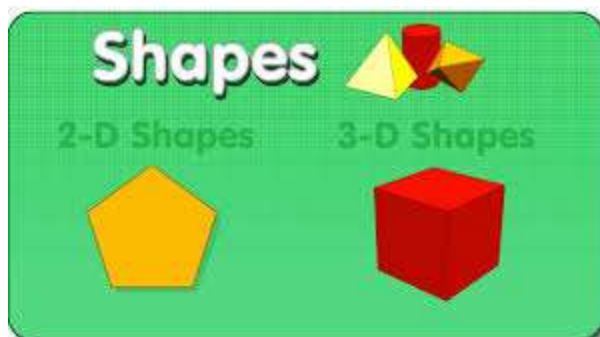
Let us look at some objects around us related to 3-D shapes.

**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



Some more examples related to 2-D shapes and 3-D shapes which will make us to understand the shapes.



Cube		
Rectangular Prism		
Sphere		
Cone		
Cylinder		



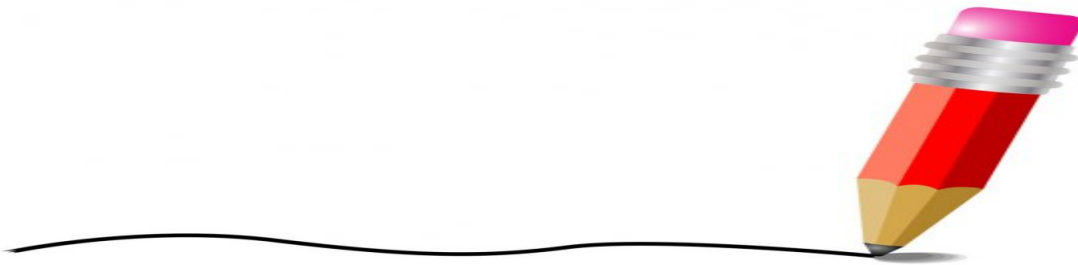
## \*About Straight lines and curved lines:

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

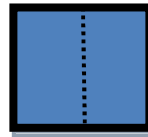


## Making of different shapes using paper ,by cut and fold method :

- 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.



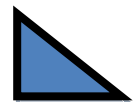
You will get a square again.

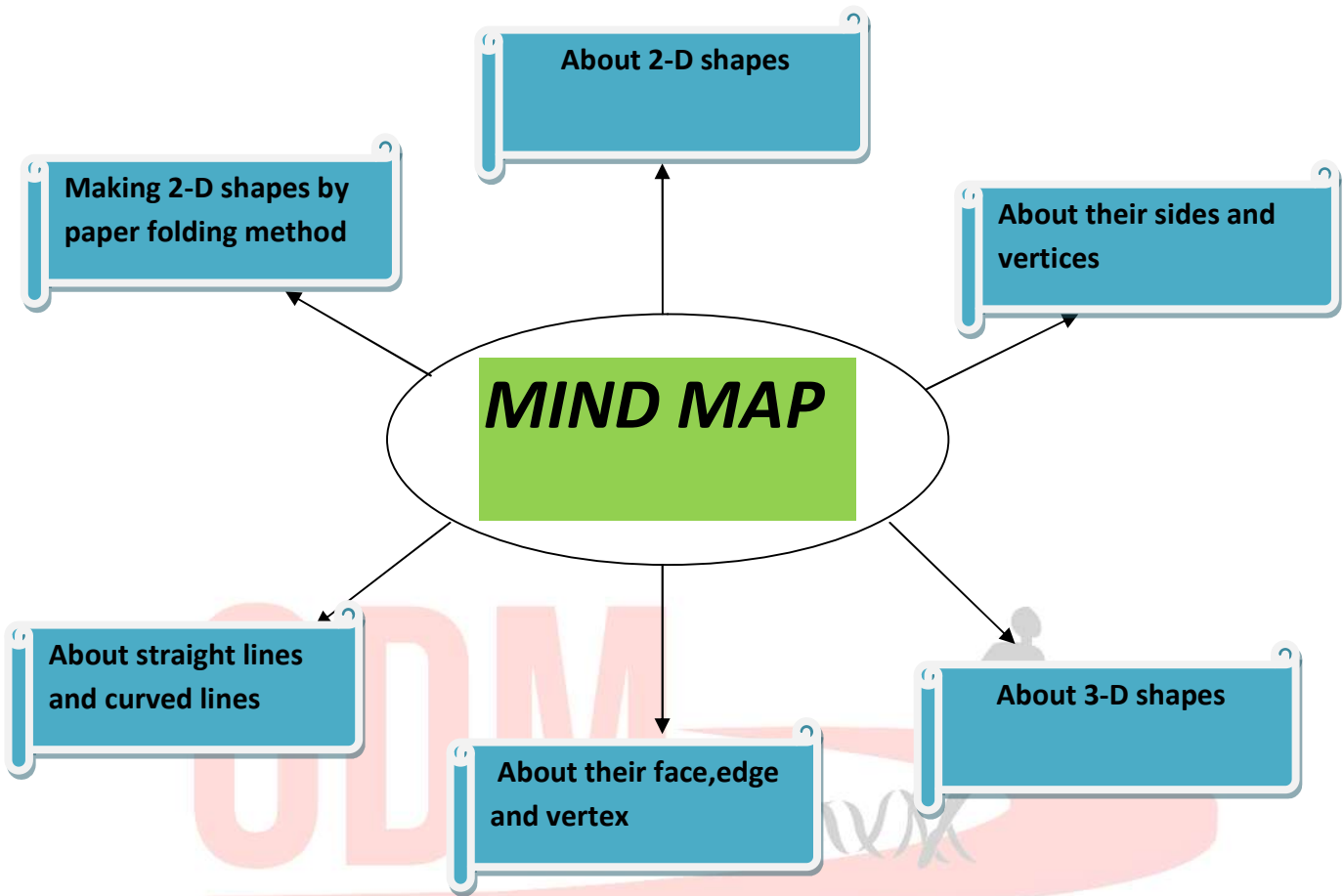


- 3) Next, fold the square through opposite corners.



You will get a triangle.





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