

CLASS	VI
SUBJECT	MATHS
TOPIC	UNDERSTANDING ELEMENTARY SHAPES
SUBTOPIC	POLYGONS
NO. OF SESSIONS	1

Introduction:

Let's start with a quick recapitulation-

Planar Curve:

Paper (Or surface of blackboard) is an example of Planar surface. A Planar curve results if you join a number of points without lifting your pencil and retracing any portion of drawing.

Type of Planar curves:

- Closed Curve - The starting and ending points are the same
- Simple Curve - A curve without cross over

The four combinations possible with above types are:

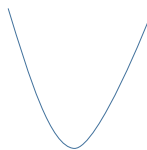
1. **Closed and Simple Curve** - A curve formed with same starting and ending point without crossing over.

Example:



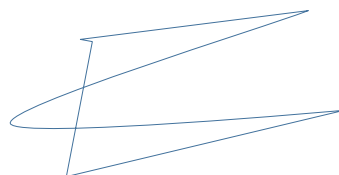
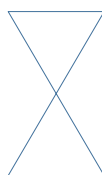
2. **Non-Closed and Simple Curve** - A curve formed with different starting and ending points without crossing over.

Example:



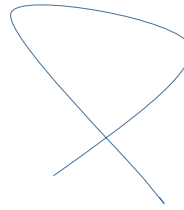
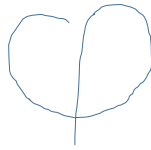
3. **Closed and Non-Simple curve** - A curve formed with same starting and ending points and is crossing over.

Example:



4. **Non-Closed and Non-Simple curve** - A curve formed with different starting and ending points and is crossing over.

Example:



Polygons - Let us now discuss the topic of the day, POLYGONS, with the help of above.

A Polygon is a simple planar closed curve made up of only line segments.

The word Polygon derives from the Greek word: *Polus* means Many and *Gonia* means Angle

Parts of a Polygon: Polygon consists of three parts

- Edges/Sides
- Vertices
- Angles

Types of a Polygons:

Note - Minimum three line-segments are required to form a polygon

1. Triangle - Smallest Polygon
 - a. Tri means three
 - b. It consists of 3- sides, 3- vertices, 3-angles.
2. Quadrilateral
 - a. Quadri means four and Lateral means edges
 - b. It consists of 4- sides, 4- vertices, 4-angles.
3. Pentagon
 - a. Penta means five and Gon means angles
 - b. It consists of 5- sides, 5- vertices, 5-angles
4. Hexagon
 - a. Hexa means six and Gon means angles
 - b. It consists of 6- sides, 6- vertices, 6-angles
5. Heptagon
 - a. Hepta means seven and Gon means angles
 - b. It consists of 7- sides, 7- vertices, 7-angles
6. Octagon
 - a. Octa means eight and Gon means angles
 - b. It consists of 8- sides, 8- vertices, 8-angles

7. Nonagon
 - a. Nona means nine and Gon means angles
 - b. It consists of 9- sides, 9- vertices, 9-angles
8. Decagon
 - a. Deca means ten and Gon means angles
 - b. It consists of 10- sides, 10- vertices, 10-angles

And so on.....


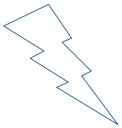
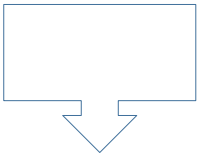
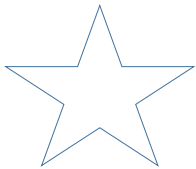

Polygon with 'n' number of sides is known as 'n-gon'.

Regular Polygon

- A regular polygon is the one which is both equi-angular and equi-lateral.
- Equi-angular means, all the interior angles measures are equal.
- Equi-lateral means, all the line segments are of equal length.

Assignment:

Question 1: In the following table, observe the given shapes and confirm whether they are Polygon or not by stating Yes or No

Shape	Polygon? Yes/No
	
	
	
	
	

Question 2: Answer the following

- a) Polygon with nine sides
- b) Polygon with six sides
- c) Polygon with four vertices
- d) How many vertices are present in smallest Polygon?
- e) What is the smallest polygon known as?
- f) Is it possible to have a polygon having two sides?
- g) Name the smallest regular polygon.

Homework: Exercise 5.8

Video Link: [Link - Open and Closed Curves and Polygons](#)

[Link - Explanation of Polygons](#)