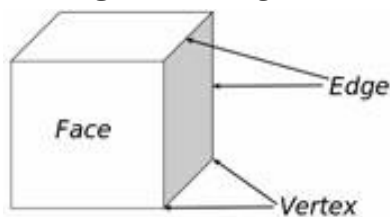


Chapter – 10

Visualising solid shapes

- There are three types of shapes:
 - (i) **One dimensional shapes:** Shapes having length only. Example: a line.
 - (ii) **Two dimensional Shapes:** Plane shapes having two measurements like length and breadth. Example: a polygon, a triangle, a rectangle, etc. generally, two dimensional figures are known as 2-D figures.
 - (iii) **Three dimensional Shapes:** Solid objects and shapes having length, breadth and height or depth. Example: Cubes, cylinders, cone, cuboid, spheres, etc.
 - (iv) **Face:** A flat surface of a three dimensional figure.
 - (v) **Edge:** Line segment where two faces of solid meet.



- **Polyhedron:** A three-dimensional figure whose faces are all polygons.
- **Prism:** A polyhedron whose bottom and top faces (known as bases) are congruent polygons and faces known as lateral faces are parallelograms. When the side faces are rectangles, the shape is known as right prism.



- **Pyramid:** A polyhedron whose base is a polygon and lateral faces are triangles.



- **Vertex:** A point where three or more edges meet.

- **Base:** The face that is used to name a polyhedron.
- Euler's formula for any polyhedron is $F + V - E = 2$, where F stands for number of faces, V for number of vertices and E for number of edges.
- Recognising 2D and 3D objects.
- Recognising different shapes in nested objects.
- 3D objects have different views from different positions.
- **Mapping:** A map depicts the location of a particular object/place in relation to other objects/ places.
- A map is different from a picture.
- Symbols are used to depict the different objects/places.
- There is no reference or perspective in a map.
- Maps involve a scale which is fixed for a particular map.
- **Convex:** The line segment joining any two points on the surface of a polyhedron entirely lies inside or on the polyhedron. Example: Cube, cuboid, tetrahedron, pyramid, prism, etc.