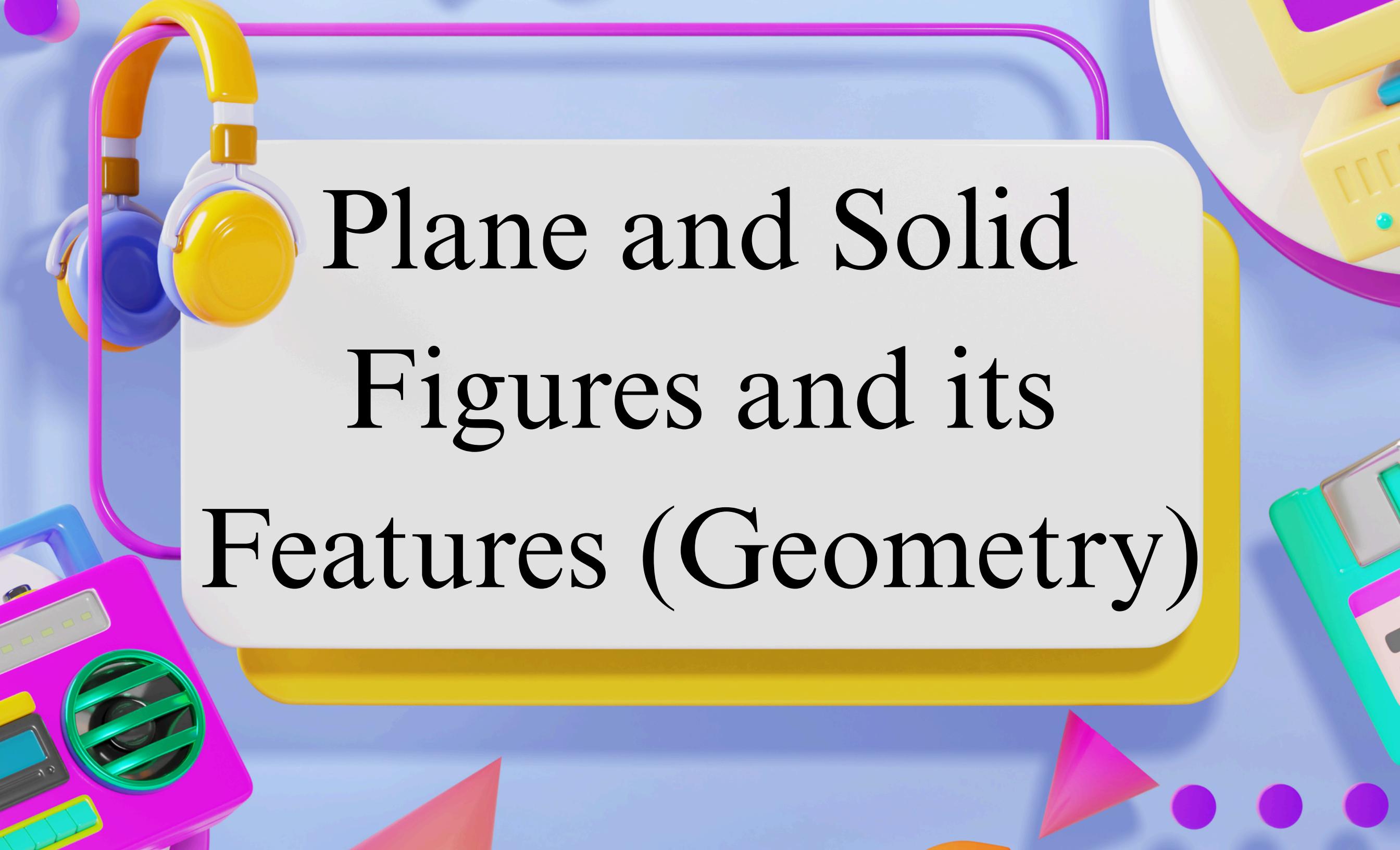
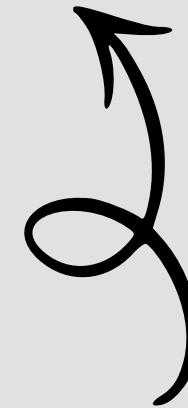
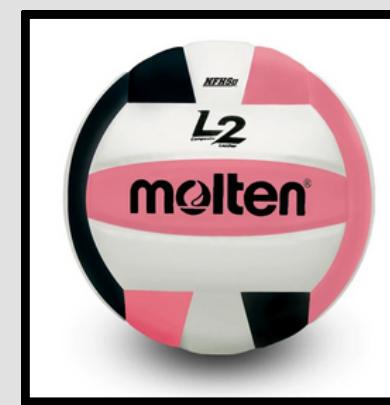


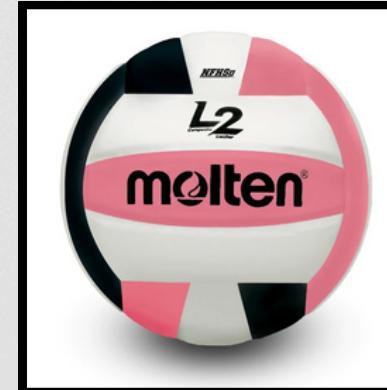
Plane and Solid Figures and its Features (Geometry)



A girl was asked to clean her room and found some items. The girl found a bed, a toy traffic cone, dice, a soccer ball, and a coin bank.



Let's classify these objects based on their geometrical shapes.



What shapes can you see from these objects?

We can see rectangles from the picture of the bed, triangles from the toy traffic cone. The ball is shaped like a circle while the coin bank has 2 circles for its bases. The dice is represented by a square.

The pictures above are examples of real solid figures.

Take note: Rectangles, squares, circles and triangles are plane figures.



Let us differentiate between
plane figures and solid figures.

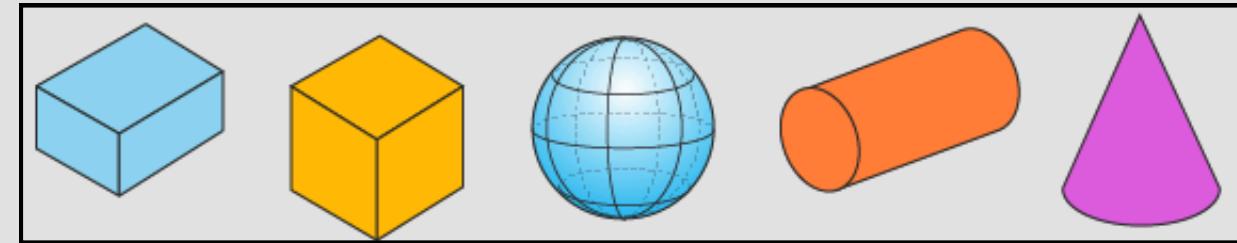
Observe these examples below:

Plain Figures



- two-dimensional shape
- flat
- has length and width

Solid Figures

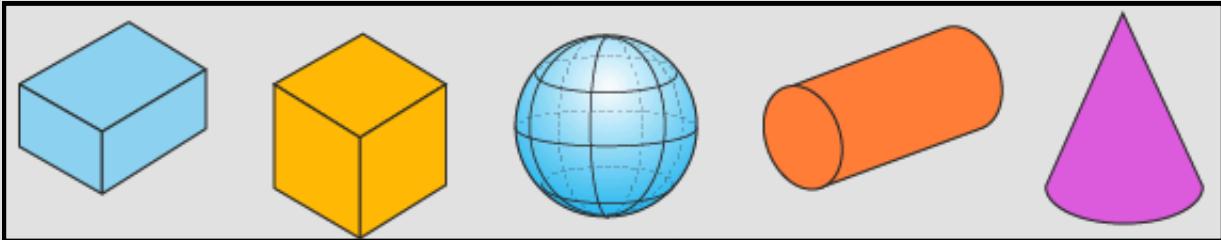


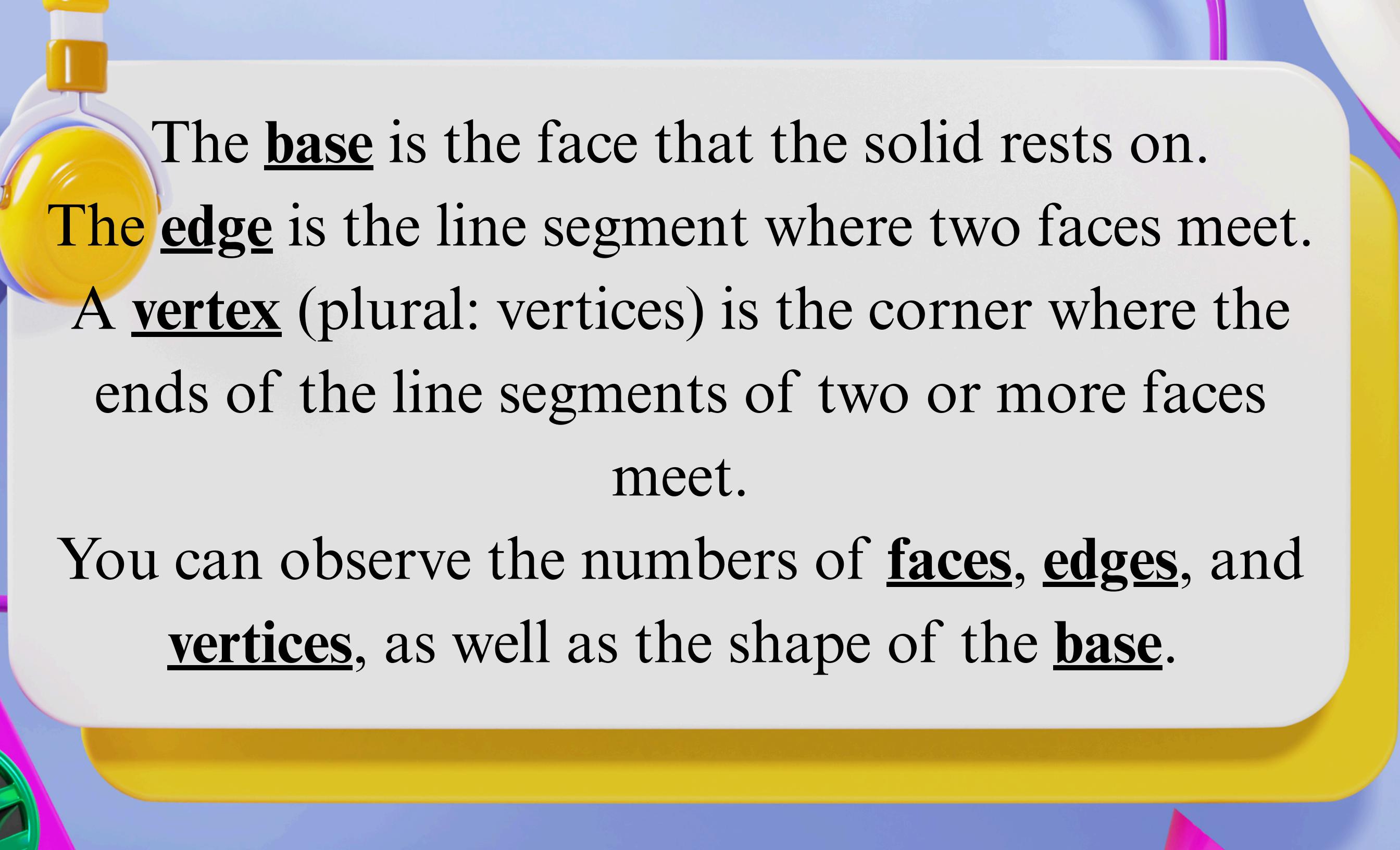
- three-dimensional shape
- thickness and depth
- has length, width and height

The pictures on the left show flat shapes. These shapes don't have thickness and are called two-dimensional shapes, or plane figures, because they only have length and width. They can be made up of straight lines, curved lines, or a combination of both.



The pictures on the right show shapes that don't lie flat on a plane. These are called space figures, or solids. Solids have three dimensions: length, width, and height (or thickness). The flat surfaces of a solid are called faces, and these faces are usually polygons.



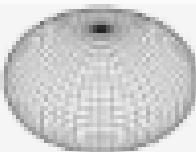
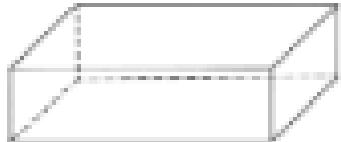
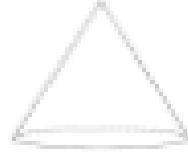
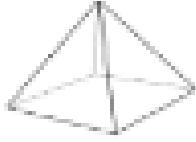
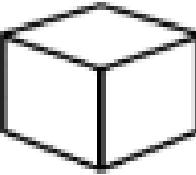


The **base** is the face that the solid rests on.

The **edge** is the line segment where two faces meet.

A **vertex** (plural: vertices) is the corner where the ends of the line segments of two or more faces meet.

You can observe the numbers of **faces**, **edges**, and **vertices**, as well as the shape of the **base**.

SOLID FIGURE	NUMBER OF FACES & BASES	NUMBER OF EDGES	NUMBER OF VERTICES
 SPHERE	0	0	0
 RECTANGULAR PRISM	6 FACES	12	8
 CONE	1 CURVED SURFACE 1 CIRCULAR BASE	0	1
 CYLINDER	2 CIRCULAR BASES AND ONE LATERAL CURVED SURFACE	0	0
 SQUARE PYRAMID	FOUR TRIANGULAR FACES 1 SQUARE BASE	8	5
 CUBE	6 FACES	12	8
 TRIANGULAR PRISM	5 FACES	9	6

- A sphere has a smooth, curved surface where every point is the same distance from the center.
- A rectangular prism has six rectangular faces. Each pair of faces intersects outside in an edge.
- A cone has a round base and a curved surface that comes up to a point.
- A cylinder has 2 equal and parallel circles as bases and a lateral curved surface.

- A pyramid has a base that can be any shape and triangular sides that meet at a single point.
- A square pyramid has a square base.
- A cube (or square prism) has six square faces. All the edges are the same length. It has 8 corners (vertices) and 12 edges.
- A triangular prism has 3 rectangular faces and 2 triangular faces.