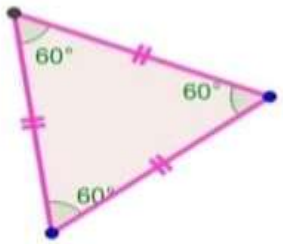
Ch.7 Shapes and Patterns

We see different types of shapes around us . Shapes are different because of their sides and angles.

1. **Triangle-** A triangle has 3 sides and 3 angles. There are 3 type of angles based of length of their sides.

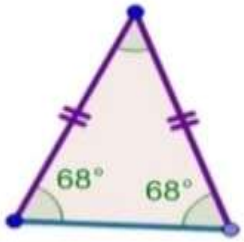
Equilateral Triangle

- All three sides are **equal**.
- All three angles are **the same** and are always **60°**.
- Example: A perfect triangle with all sides the same length.



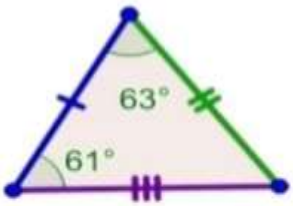
Isosceles Triangle

- **Two sides** are equal, and the third side is different.
- The **two angles** opposite the equal sides are also **equal**.
- Example: A triangle with two sides of the same length and one different.



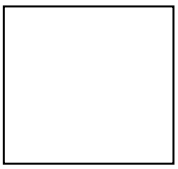
Scalene Triangle

- All three sides are **different** lengths.
- All three angles are also **different**.
- Example: A triangle with no equal sides or angles.



Quadrilateral- 4 sided figures are called quadrilateral

2. Square



A square has 4 equal sides

All 4 angles are 90° (right angles)

It looks like a perfect box

Examples: Floor tiles, a chessboard, a carrom board

3. Rectangle

A rectangle has 4 sides

Opposite sides are equal and all angles are 90°

Examples: A4 sheet, page of notebook, face of a door

4. Parallelogram

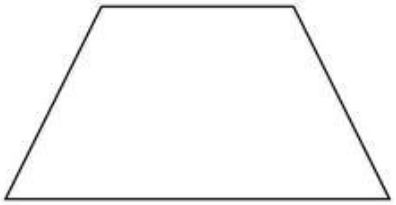
A parallelogram has 4 sides

Opposite sides are equal and parallel, but angles are not 90°

It looks like a slanted rectangle

Examples: Slanted roof designs, some windows

5. Trapezium

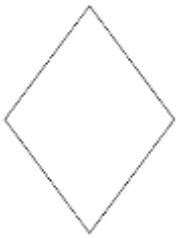


A trapezium has 4 sides

One pair of opposite sides is parallel and the other pair is not

Examples: Trapezoid table, roof edges

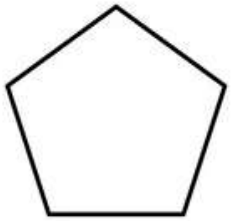
6. Rhombus



It has 4 equal sides

All the sides are equal but angles are not 90°

Examples: Kite, rhombus-shaped patterns



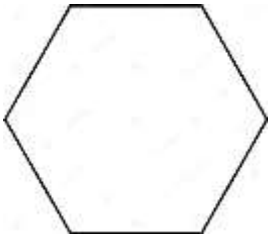
7. Pentagon

It has 5 sides and 5 angles

The sides may or may not be equal

Examples: House shape, some road signs

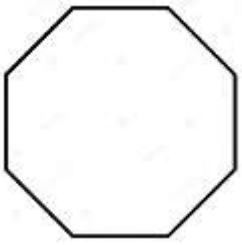
8. Hexagon



A hexagon has 6 sides and 6 angles

Often, all sides are equal

Examples: Honeycomb, hexagon tiles



9. Octagon

An octagon has 8 sides and 8 angles

They are often seen on roads

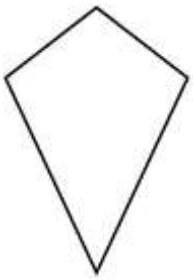
Examples: Stop sign, star patterns

10. Circle

It has no sides and no corners

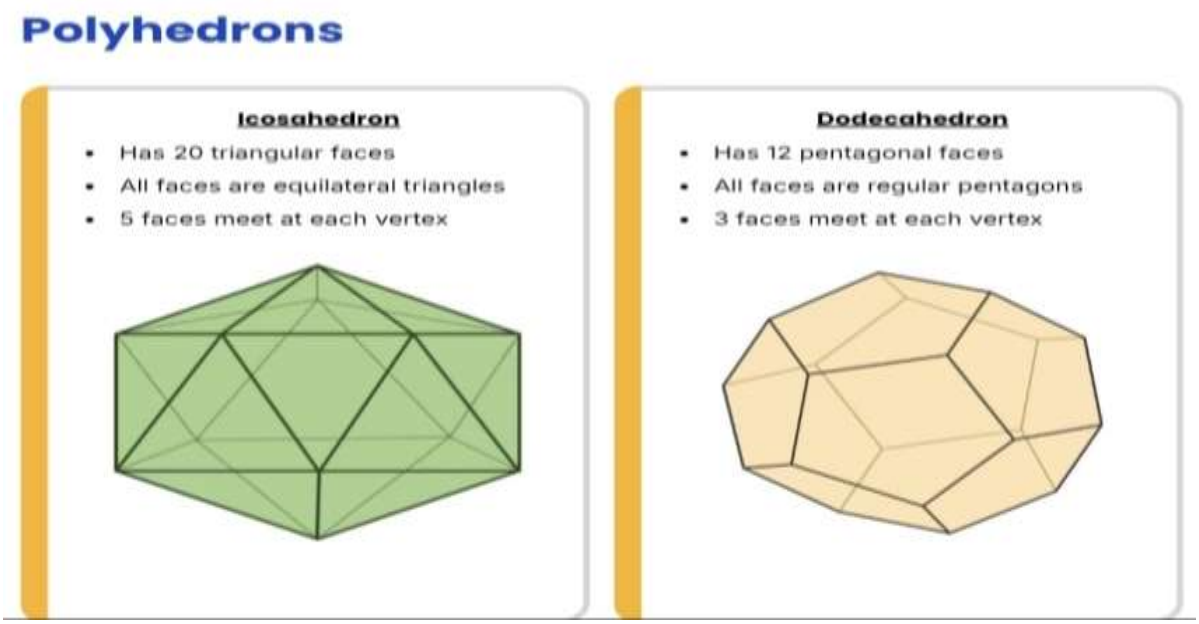
The angle around is 360°

Examples: Bangle, coin, wheel



11. Kite:

It is a four sided figure with two pair of adjacent sides equal.



Tiling and Tessellation

We often use tiles of the same shape or a combination of shapes to cover a region.

Example-

* Place 2 regular pentagons around a point -> a small empty space is left.

Shapes that have equal sides are called regular shapes.