

GEOMETRY OF STRAIGHT LINES

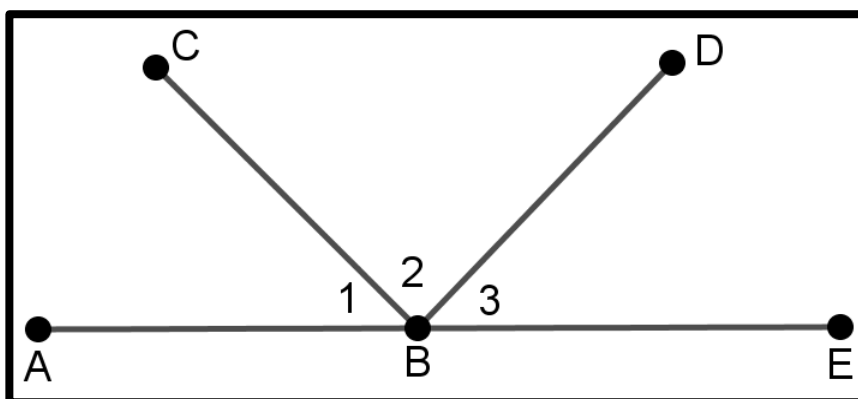
OUTCOMES:

- Name and classify angles.
- Recognise and describe angles formed by PERPENDICULAR LINES.
- Recognise and describe angles formed by INTERSECTING LINES.
- Identify and name alternate, corresponding co-interior and vertically opposite angles.
- Solve geometric problems using the relationship between straight lines(next week).

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GEOMETRY LANGUAGE

It is important to use the correct notation in geometry. The small numbers are not the size of the angles but are labels for the angles.



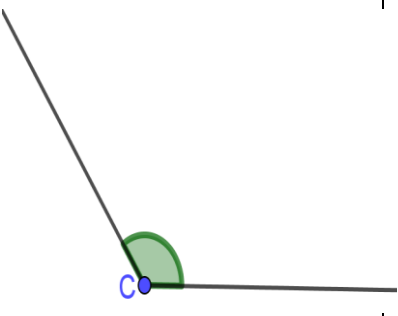
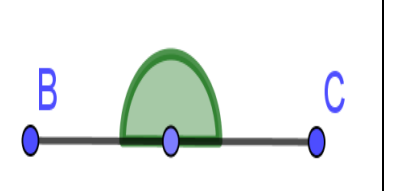
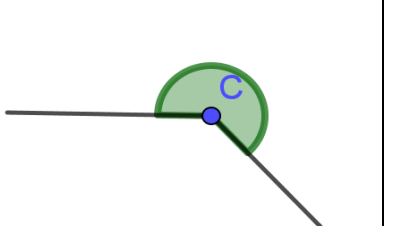
The abbreviated form an angle is $\angle$. There are different ways to describe an angle you are using.

- $\hat{B}_1$ can be describe as $\angle ABC$, $\hat{A}\hat{B}C$ or $\hat{C}\hat{B}A$
- $\hat{B}_2$ can be describe as $\angle CBD$, $\hat{C}\hat{B}D$ or $\hat{D}\hat{B}C$
- $\hat{B}_3$ can be describe as $\angle DBE$, $\hat{D}\hat{B}E$ or $\hat{E}\hat{B}D$

➤ CLASSIFY THE FOLLOWING ANGLES

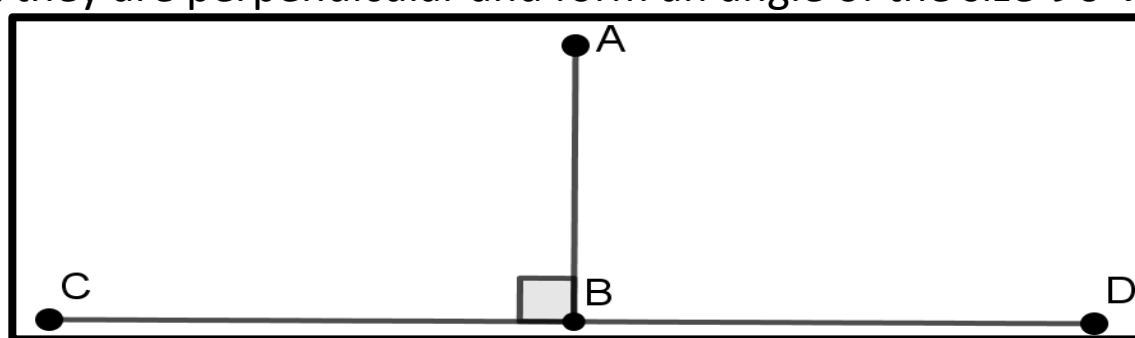
Drawing	Name	Angles
	ACUTE ANGLE	An acute angle is an angle that measures less than 90 degrees
	RIGHT ANGLE	A right angle is an angle of exactly 90° (degrees)

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	OBTUSE ANGLE	An angle that is larger than 90° , but smaller than 180° is called an obtuse angle .
	STRAIGHT ANGLE	A straight angle is 180° degrees.
	REFLEX ANGLE	Reflex angles are angles measuring greater than 180° degrees and less than 360° degrees.

PERPENDICULAR LINES

When two lines form an angle of 90° , we say that the two lines are perpendicular. The diagrams below show perpendicular lines. In geometry, we use the symbol $\perp$ to show that two lines are perpendicular. So in the diagram, $AB \perp CD$ and the symbol $\perp$ shows that they are perpendicular and form an angle of the size 90° .

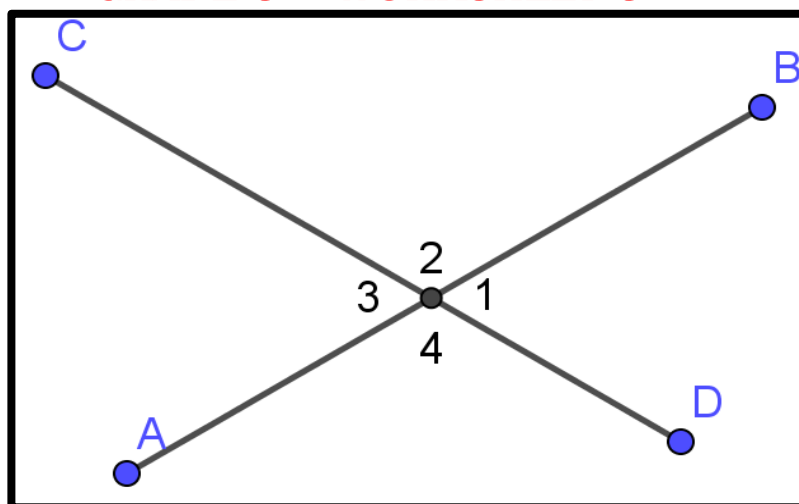


$$\hat{ABC} = 90^\circ (AB \perp CD)$$

INTERSECTING LINES

The point of intersection is the point at which two or more straight lines meet/cross. When two or more lines intersect they form **VERTICALLY OPPOSITE ANGLES**. Vertically opposite angles are **EQUAL** in size.

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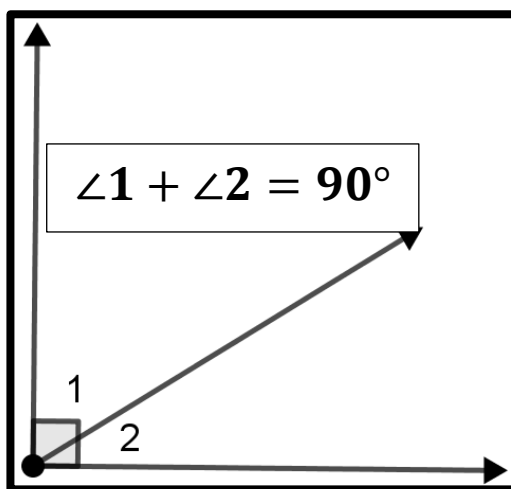


We can show this mathematically by writing:

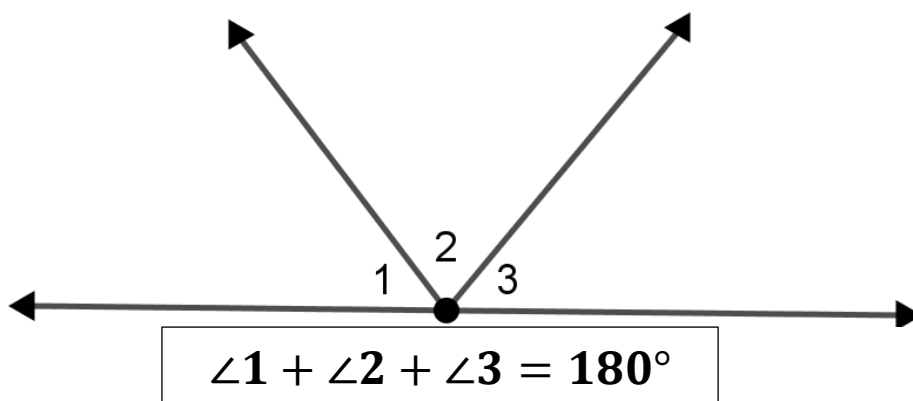
- $\angle 1 = \angle 3$
- $\angle 2 = \angle 4$

LINES THAT MEET AT A POINT

- 1) Complementary angles – two angles in which the sum add up to 90° .



- 2) Supplementary angle – two or more angles in which the sum add up to 180° .

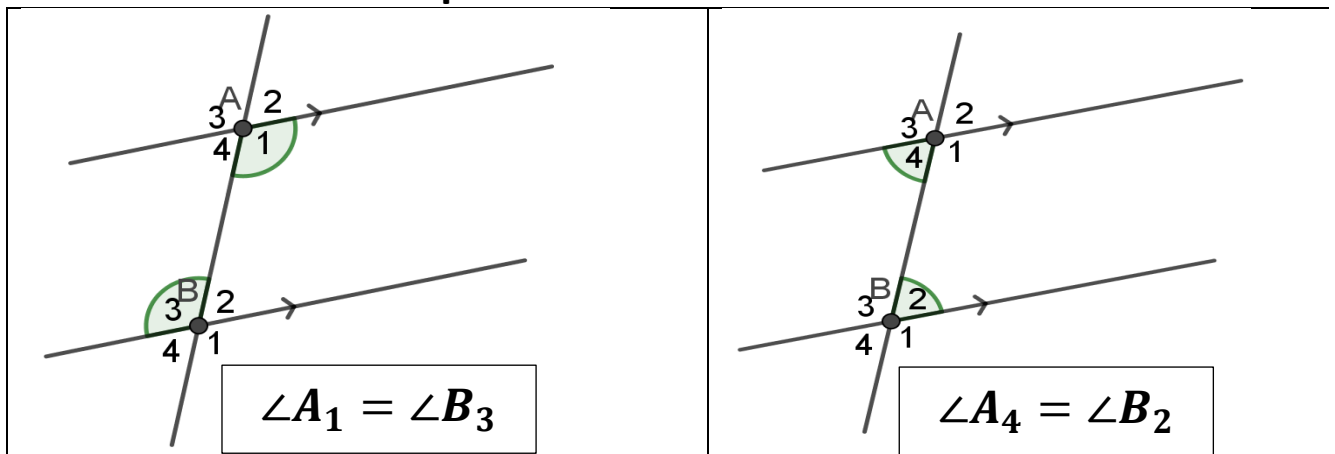


PARALLEL LINES CUT BY A TRANSVERSAL

A transversal is a line that intersects with two parallel lines. Parallel lines are straight lines that are the same distance from each other along the whole of their length. Parallel lines are indicated by using small arrows on the respective lines. When a transversal intersects parallel lines, the angles are divided into three groups called alternate angles, corresponding angles and co-interior angles.

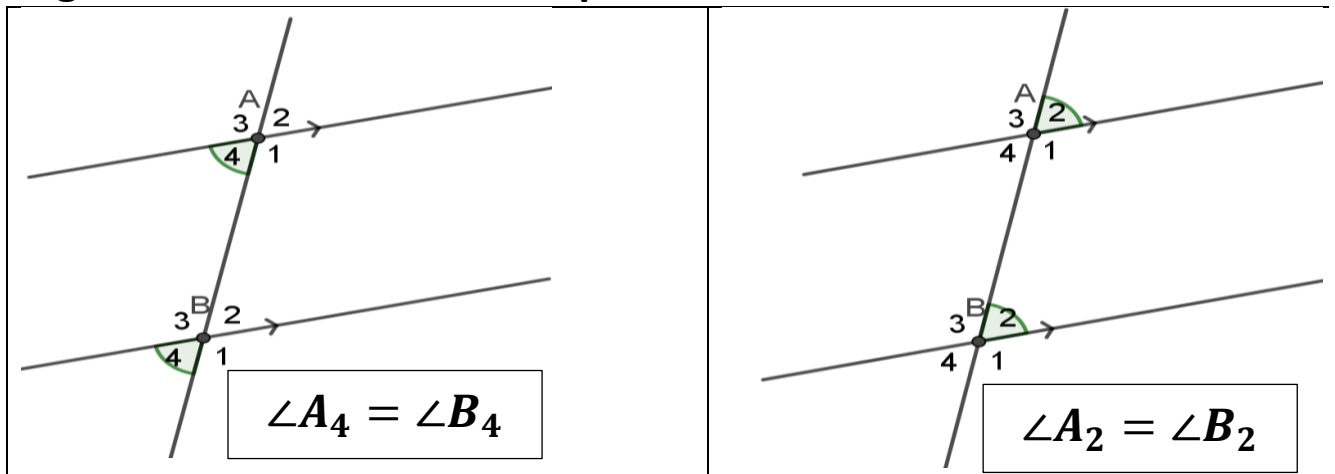
- ALTERNATE ANGLES**

When two parallel lines are cut by a transversal, alternate angles are formed and are equal in size.

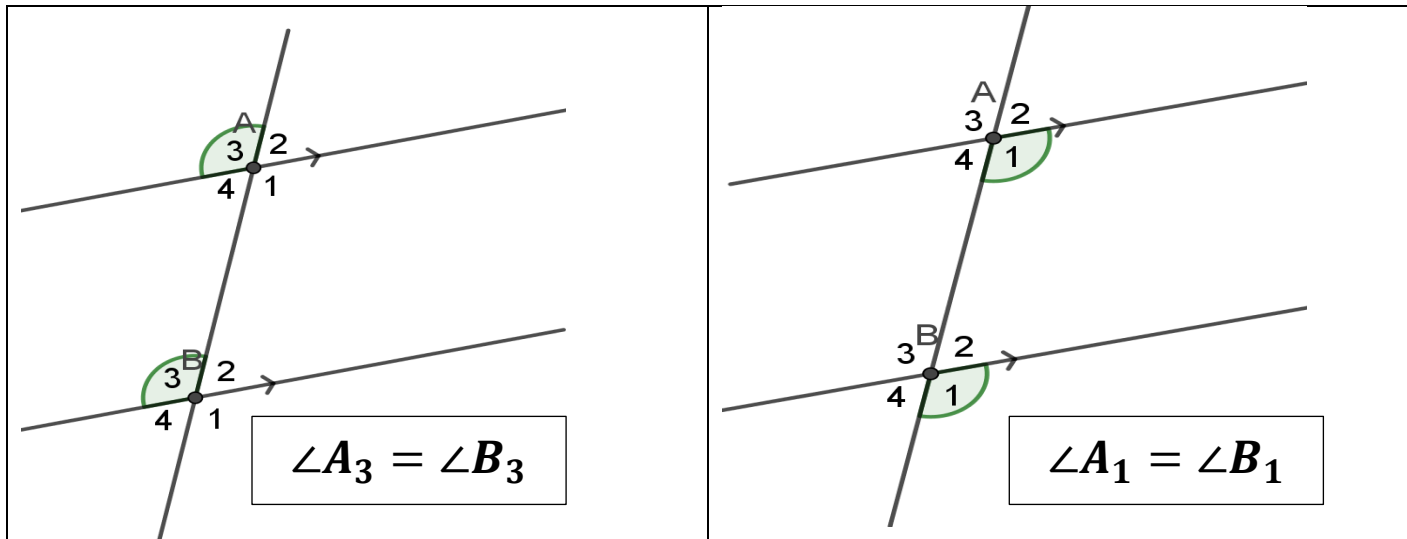


- CORRESPONDING ANGLES**

When two parallel lines are cut by a transversal, corresponding angles are formed and are equal in size.



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- **CO-INTERIOR ANGLES**

When two parallel lines are cut by a transversal, co-interior angles are formed and are supplementary (add up to 180°)

