



Year 8 Maths Learning Journey

Spring half term 1 – Geometry of Angle and Shape

Content – Including ‘Big Questions’

Core knowledge; Constructions and angles	Complete
Using a compass - How does the distance between the point and the pencil tip affect the circle?	
Constructing a triangle from SSS - Is it possible to make a triangle from any three sides?	
Measuring and classifying angles - Do lines have to meet to form an angle?	
Core knowledge; Angles – Positional knowledge of angles	Complete
Adjacent angles on a straight line - Can I add any pair of angles on a straight line?	
Vertically opposite angles - To be vertically opposite, must one angle be above the other?	
Corresponding angles on parallel lines - What is the positional relationship?	
Alternate angles on parallel lines - What is the positional relationship?	
Co-interior angles on parallel lines - What is the positional relationship?	
Core knowledge; Properties of triangles and quadrilaterals	Complete
Deriving and using the sum of the interior angles of a triangle - where are corresponding or alternate angles?	
Constructing triangles using ASA - How can I construct a triangle with only 2 sides?	
Calculating angles in a quadrilateral - Does knowing interior angles of a triangle help?	
Core knowledge; Interior and exterior angles of polygons	Complete
Deriving the sum of the interior angles of a pentagon -	
Investigating the sum of the interior angles of a polygon -	
Regular and Irregular polygons -	
Using the formula for the sum of the interior angles in a polygon -	
The sum of exterior angles in a polygon -	

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Learning Checkpoints

Learning Check Title	Score	Dirt
Constructions and angles		
Angles – Positional knowledge of angles		
Properties of Triangles and Quadrilaterals		
Interior and exterior angles of polygons		

Key Vocabulary

Circle; The set of all points in a plane which are at a fixed distance (the radius) from a fixed point (the centre) also in the plane Alternatively, the path traced by a single point travelling in a plane at a fixed distance (the radius) from a fixed point (the centre) in the same plane

An angle is a measure of rotation and is often shown as the amount of rotation required to turn one line segment onto another where
the two line segments meet at a point

Construct: in Geometry means to draw shapes, angles or lines accurately.

Radius: The distance from the center to the circumference of a circle

Triangle; a three sided polygon

Degree; The most common unit of measurement for angle. One whole turn is equal to 360 degrees, written 360°

Protractor: An instrument for measuring angles.

Acute: An angle between 0° and 90° .

Obtuse: An angle greater than 90° but less than 180° .

Reflex: An angle that is greater than 180° but less than 360°.

Adjacent: two angles are adjacent if they have a common side and a common vertex.

Vertex: The point at which two or more lines intersect. Plural: vertices

Vertically opposite: angles that are opposite one another at a specific vertex and are created by two straight intersecting lines. Vertically opposite angles are equal to each other.

Parallel: In Euclidean geometry, always equidistant. Parallel lines, curves and planes never meet however far they are produced or extended.

Corresponding angles; the angles which occupy the same relative position at each intersection where a straight line crosses two others. If the two lines are parallel, the corresponding angles are equal.

Alternate angles; Where two straight lines are cut by a third, as in the diagrams, the angles d and f (also c and e) are alternate. Where the two straight lines are parallel, alternate angles are equal.

Equal: the same amount

Co-interior: see diagram

Regular (polygon): Describing a polygon, having all sides equal and all internal angles equal.

Irregular: When the sides of a polygon are not all of equal length and the angles are not all of equal size.

Interior angle; At a vertex of a polygon, the angle that lies within the polygon.

Exterior angle; Of a polygon, the angle formed outside between one side and the adjacent side produced. This is the angle that has to be turned at the vertex if you are travelling around a shape