



Year 8 Maths Learning Journey

Summer term 1

Developing geometry: Angles in parallel lines & polygons

Core knowledge	Reference
Understand and use basic angle rules and notation “What’s the difference between an acute angle and an obtuse angle?”	WORKSHEET
Investigate angles between parallel lines and the transversal “How do you know when two or more lines are parallel?”	WORKSHEET
Identify and calculate with alternate and corresponding angles “Which angle(s) can you work out directly from the information given on the diagram? What other angle(s) can you then work out?”	WORKSHEET
Identify and calculate with co-interior, alternate and corresponding angles “Why are co-interior angles different to corresponding and alternate angles?”	WORKSHEET
Solve complex problems with parallel line angles “What tells us if the lines are parallel?”	WORKSHEET
Constructions triangles and special quadrilaterals “How is a rhombus different from a parallelogram?”	WORKSHEET
Investigate the properties of special quadrilaterals “I am a four-sided shape with two pairs of parallel lines, what might I be?”	WORKSHEET
Identify and calculate with sides and angles in special quadrilaterals “What makes a trapezium an isosceles trapezium?”	WORKSHEET
Understand and use the properties of diagonals of quadrilaterals “Is it possible for the diagonals of a quadrilateral to be horizontal or vertical?”	WORKSHEET
Understand and use the sum of exterior angles of any polygon “What are the two conditions that make a polygon regular?”	WORKSHEET
Understand and use the sum of the interior angles in any polygon “If a polygon is regular, what do we know about its angles?”	WORKSHEET
Calculate missing interior angles in regular polygons “Explain why neither a rectangle nor a rhombus are regular.”	WORKSHEET
Prove simple geometric facts (H) “What’s the difference between a proof and a demonstration?”	WORKSHEET
Construct an angle bisector (H) “What does bisect mean? What does the stem “bi” tell us?”	WORKSHEET
Construct a perpendicular bisector of a line segment (H) “Tell me what perpendicular means”	WORKSHEET

Learning Checkpoints

LC Title	Completed	Dirt
Angles in parallel lines & polygons		

Key Vocabulary:

Acute: An angle between 0° and 90° .

Adjacent (angles): Any two angles that share a common ray or side, a common vertex, and whose interiors do not overlap

Alternate: see diagram

Angles at a point: describes the sum of angles that can be arranged together so that they form a full turn. Angles around a point add to 360°

Bisect: In geometry, to divide into two equal parts

Construction lines: Construction lines (also known as x lines) are temporary linework entities that can be used as references when creating and positioning other objects or linework.

Co-interior: see diagram

Corresponding: see diagram

Equilateral: a polygon with all of its sides of the same length.

Exterior: Of a polygon, the angle formed outside between one side and the adjacent side produced.

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

Isosceles: A triangle in which two sides have the same length and consequently two angles are equal.

Line segment: The part of a line that connects two points. It is the shortest distance between the two points.

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

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

Parallelogram: A quadrilateral whose opposite sides are parallel and consequently equal in length.

Perpendicular: A line or plane that is at right angles to another line or plane.

Perpendicular bisector: passes through the midpoint of a line segment. It can be constructed using a ruler and a compass.

Polygon: A closed plane figure bounded by straight lines. The name derives from many angles.

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

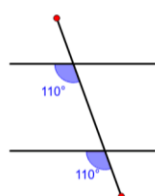
Regular: To formulate a chain of reasoning that establishes in conclusion the truth of a proposition.

Scalene: (of a triangle) having sides unequal in length.

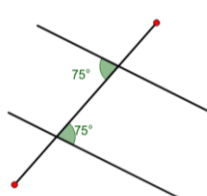
Transversal: A line that crosses at least two other lines.

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.

Corresponding Angles



Alternate Angles



Interior Angles

