Year 9 Maths Learning Journey

Autumn Term 5

Constructing in 2 and 3 dimensions: Constructions and Congruency

Core knowledge	Reference
Draw and measure angles (R) "How do you know which scale to use on a protractor?"	Worksheet
Construct and interpret scale drawings (R) "How do the angles in a scale drawing relate to the angles in the real-life object?"	Worksheet
Locus of distance from a point "What do all the radii of a circle have in common?"	Worksheet
Locus of distance from a straight line "What's the difference between the locus of the points 2m away from a line and the locus of the points 2m away from a point? How does this affect the point at the end of a line?"	Worksheet
Locus equidistant from two points "What does equidistant mean?"	Worksheet
Construct a perpendicular bisector "What does perpendicular mean? How can we check whether a line is a perpendicular bisector?"	Worksheet
Construct a perpendicular from a point "Does it make a difference if the line segment is horizontal or vertical or neither?"	Worksheet
Construct a perpendicular to a point "When do you need to keep the radii of the arcs equal and when can they change?"	Worksheet
Locus of distance from two lines "What doe the locus do to the angle between the lines?"	Worksheet
Construct an angle bisector "What's the difference between an angle bisector and a perpendicular bisector?"	Worksheet
Construct triangles from given information (R) "What information do you need in order to complete the construction of a triangle?"	Worksheet
Identify congruent figures "Does a pair of shapes need to be in the same orientation in order to be congruent?"	Worksheet
Explore congruent triangles "What does "included angle" mean?"	Worksheet
Identify congruent triangles "If you know two angles in a triangle, what else do you know?"	Worksheet

Learning Checkpoints

LC Title	Completed	Dirt
Constructions and Congruency		

Key Vocabulary:

Acute: An angle between 0 o and 90 o .

Arc: A portion of a curve. Often used for a portion of a circle.

Bisector: A point, line or plane that divides a line, an angle or a solid shape into two equal parts. A perpendicular bisector is a line at right angles to a line-segment that divides it into two equal parts.

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

Conversion: the act or process of changing something into a different state or form.

Discorectangle/Sausage Body/Stadium/Obround: a geometric figure consisting of a rectangle with top and bottom lengths whose ends are capped off with semicircles of radius.

Equidistant: The same distance (from each other, or in relation to other things). Example: parallel lines are always equidistant.

Estimate: Estimating in maths is a way of approximately calculating an answer (getting a 'rough answer') to check its accuracy (the 'right answer').

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

Locus: The set of all points that share a property. This usually results in a curve or surface.

Multiplier: A factor that amplifies or increases the base value of something else.

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

Path: In graph theory, a path in a graph is a finite or infinite sequence of edges which joins a sequence of vertices which, by most definitions, are all distinct (and since the vertices are distinct, so are the edges).

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

Point: An element, in geometry, that has position but no magnitude

Protractor: An instrument for measuring angles.

Ratio: A part to part comparison. The ratio of a to b is usually written a : b

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

Right angle: One quarter of a complete turn. An angle of 90 degrees.

Scale: A measuring device usually consisting of points on a line with equal intervals.

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