

Year 12 T5

Maths Overview

Geometry and Measure

Learning Outcomes	Elaboration	Textbook
Students should be able to: • recognise reflection and rotation symmetry of 2D shapes;	Find the orders, centres and axes of symmetry. Reflect shapes in a mirror line. Turn shapes using tracing paper. Reflection to include rectilinear figures only. Know and use symmetry properties of triangles, quadrilaterals and other polygons.	26
• describe and transform 2D shapes using single or combined rotations, reflections, translations, or enlargements by a positive scale factor	Rotations will be limited to $\pm 90^\circ$ and 180° about a point. Reflections will be limited to reflections in lines parallel to the co-ordinate axes.	30
• distinguish properties that are preserved under particular 2D transformations;	Vector notation will be used for translations. Use transformations to create and analyse spatial patterns. Recognise that enlargements preserve angle but not length.	33
• understand the effect of enlargement for perimeter, area and volume of shapes and solids;		
• understand and use compound measures;	• Work out average speed (distance/time) or density (mass/volume).	32
• know and use imperial measures still in common use and their approximate metric equivalents;	Includes foot, yard, mile, pound and pint. Recall that 1 kg is about 2.2 lb, 8 km is approximately 5 miles, 1 litre is about 1.75 pints.	27
• use a ruler and a pair of compasses to do constructions;	Including an equilateral triangle with a given side, the mid-point and perpendicular bisector of a line segment, the perpendicular from a point to a line, the perpendicular from a point on a line and the bisector of an angle.	24, 36
• construct loci;	Region bounded by a circle and an intersecting line.	36
• calculate perimeters and areas of shapes made from triangles and rectangles; and	Calculate the area of a trapezium, parallelogram, rhombus and kite.	28
• solve problems (which may be set in context) that require calculations including a range of measures, for example, length, area, volume, weight, time and temperature.	Calculate the surface areas and volume of cubes, cuboids and simple right prisms.	28, 23

