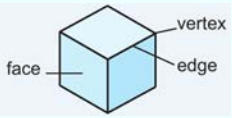
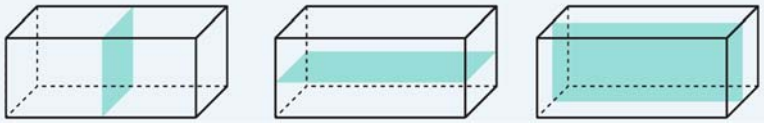
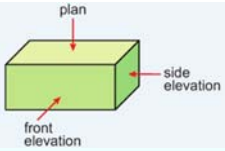
Topic: KS4 Foundation Unit 15 Constructions, Loci and Bearings

Mathswatch Clips: 11, 13, 43, 44, 51, 124, 145, 146, 147, 165, 166

Duration: 12 Lessons

Composite: Unit Test

Key vocabulary:	Powerful knowledge components crucial to commit to long term memory. Declarative knowledge.	Core knowledge components. Procedural and conditional knowledge.	Links to previous and future topics
Planes Symmetry Isometric Congruent Construct Locus, Loci Equidistant Regions Perpendicular Bearing Pythagoras Trigonometry Parallel	I know that: The flat surfaces of 3D shapes are called **faces**, the lines where two faces meet are called **edges** and the corners at which the edges meet are called **vertices** (the singular of vertices is **vertex**).  A **plane** is a flat (2D) surface. A solid shape has a **plane of symmetry** when a plane cuts the shape in half so that the part of the shape on one side of the plane is an identical reflection of the part on the other side of the plane. The planes of symmetry for this cuboid are shown in blue.  The **plan** is the view from above an object. The **front elevation** is the view of the front of an object. The **side elevation** is the view of the side of an object.  **Constructions** are accurate drawings made using a ruler and pair of compasses. **Bisect a line** means to cut a line exactly in half. A **perpendicular bisector** cuts a line in half at right angles.  A **bearing** is an angle measured in degrees clockwise from north. A bearing is always written using three digits. This bearing is 025°.  An **ASA** triangle has a given **A**ngle, a **S**ide length and another **A**ngle. An **SAS** triangle is one where you are given two **S**ide lengths and the **A**ngle in between. In an **SSS** triangle, you are given all three **S**ide lengths but none of the angles. Triangles with a right angle can be referred to as **RHS** triangles if you are given the **R**ight angle, the **H**ypotenuse length and another **S**ide length. The **hypotenuse** is the longest side of a right-angled triangle.	I know how to: • Describe 3D shapes using the correct mathematical words. • Identify and sketch planes of symmetry of 3D shapes. • Draw plans and elevations. • Sketch 3D shapes based from their plans and elevations. • Make accurate drawings of triangles using a ruler, protractor and compasses. • Identify SSS, ASA, SAS and RHS triangles as unique from a given description. • Identify congruent triangles. • Bisect angles and lines using rulers and compasses. • Draw loci for the path of points that follow a given rule. • Use three-figure bearings. I know when to: • Use scales on maps and diagrams to work out lengths and distances. • Use angles at parallel lines to work out bearings. • Solve problems involving bearings and scale diagrams.	This topic builds on prior knowledge: • Write a ratio in the form 1 : m and in its simplest form. • Know clockwise, anticlockwise. • Identify congruent shapes. This topic will be used in future learning: • Measure lines and angles and using compasses, ruler and protractor, and construct standard constructions, are skill practiced here and also used in congruence, similarity and vectors.