Topic: KS3 Year 8 Drawing		**Duration: 5 lessons. Spring Term 1**	**Composite: Unit Test**
Key vocabulary:	**Core knowledge Components**	**Powerful knowledge components crucial to commit to long term memory**	**Links to previous and future topics**
Isometric, Orthographic, Oblique. Isometric paper 2 dimensional (2D), 3 dimensional(3D) Crating, rendering. Ellipse. Orthographic drawing, drawing board, set square, circular stencil. Outside edges, hidden detail, centre lines, construction lines Dimension lines, standard conventions, scale. Isosketch.	• What are the 3 styles of drawing? • Is isometric 2D or 3D? • What angle is isometric drawn at? • What is crating? Why is it used? • Why are colours built up when shading? • What is rendering? Why is it used? • What is masking? Why is it used? • What shape does a circle appear to be when it is drawn in isometric? • How do a drawing board and set square help use to draw? • What is orthographic drawing? • What are the 4 types of lines used in orthographic drawing? • What does a dimension line show? How is it drawn? • Why is a scale shown on a drawing? • What is the difference between 1:2, 2:1 and 3:1 when scaling ? • What size angles are on the 2 types of set squares ? Extension What is the name of the helpful tool used to when drawing isometric?	• Be able to recognise/identify the 3 styles of drawing. • To know the advantages/disadvantages of each style of drawing (in order to choose the style to use). • To be able to draw simple 3D shapes in isometric using isometric paper. • To be able to use the crating technique to produce a realistic isometric drawing. • To be able to shade an object, showing the impact of light on its colour. • To be able to render to make materials look realistic (wood, plastic, metal, cement). • To be able to produce a circle in isometric. • To be able to set up a drawing board correctly. • To be able to produce an orthographic drawing that has: - The correct layout. - Accurate measurements. - The correct use of construction lines. - The correct use of standard conventions for lines. • To be able to add dimension lines to a drawing using standard conventions. • To be able to identify appropriate scales for a range of products. • To be able to use a drawing board and set square to produce simple isometric shapes. • To be able to use a drawing board and set square to produce more complex isometric shapes. Extension : To be able to use an Isosketch.	Will further develop knowledge drawings in year 9, when pupils will be required to read drawings, in order to manufacture an item. Will also be using a CAD package inventor, where they will be drawing in isometric and generating automatic orthographic drawings.

Topic: KS3 Year 8 Structures		**Duration: 6 lessons. Spring Term 1**	**Composite: Unit Test**
Key vocabulary:	**Core knowledge Components**	**Powerful knowledge components crucial to commit to long term memory**	**Links to previous and future topics**
Load, structure, natural, manmade, structural failure, shell structure, frame structure. **Forces. Bending , Tension, Compression, Torsion, Shear. Equilibrium** Parallelograms, Tetrahedron, Triangles, Bridges - Arch, Beam, Truss, Suspension. Annotation. Brief. Design Criteria. Aesthetics. Evaluation. Resonance Frequency.	• What is the difference between a man made and a natural load? • What does structural failure mean? • What is a shell structure? What is a frame structure? • What are the 5 types of forces? • If a structure is in equilibrium, what does this mean? • What shape can support, stabilise and stiffen a structure? • What does a key stone do in an arch bridge ? • Why do designer produce more than 1 design? • What information should be annotated on a sketch? • What is a brief? Extension: What is a resonance frequency ? How can cause a bridge to fail?	• **To be able to apply a knowledge of shell and frame structures, to construct a tower.** • **To be able to identify the different types of forces, in practical situations.** • **To be able to determine if forces are balanced.** • **To be able to describe the key structural elements of a range of bridges.** • **To be able to produce a series of realistic annotated designs for a bridge structure** • **To be able to produce an accurate model, that meets the brief.** • **To be able to minimise material use, and hence reduce costs.** • **To be able to critique and identify improvements to a design.** **Extension: Understand that dampers can be used to reduce the risk of resonance frequency in a structure.**	Stand alone module on structures. To be further developed in KS4. Pupils encouraged to use 3D drawing skills from Drawing module.