



R039 TA1

R039 : Communicating Designs

- To be able to:
- create simple freehand sketches in 2D
 - use the crating method to produce developed thumbnail sketches in 2D
 - create simple freehand sketches in 2D using the compound method
 - produce 3D freehand sketches using the oblique and isometric method of drawing
 - produce a 3D sketch using the two-point perspective method
 - add a limited amount of detail to their drawing
 - render their sketches using colour
 - take into account how light affects the tone of the image
 - label their design sketches
 - annotate design drawings
 - produce accurate isometric 3D sketches
 - use annotation and rendering on their drawing



R039 TA2

- To be able to:
- produce a third angle orthographic drawing
 - understand the layout and detail required for an orthographic drawing

- understand why assembly instructions are important for a drawing
- produce a set of assembly instructions
- produce an exploded view drawing, including parts labelling and annotation
- produce an isometric drawing that can be used to show the layout to assemble the product
- understand the centre line detail, how it is drawn and where it is positioned on an engineering drawing
- identify the layout and format for this type of drawing
- produce an isometric drawing, including dimensions, tolerances and other significant information
- understand the difference between first and third angle projection drawing
- produce a third angle orthographic drawing, including dimensions, tolerances and other significant information
- understand why assembly instructions are important for a drawing
- produce a sectional drawing, including the page layout with title block
- understand the principles of a sectional view drawing
- understand the difference between first and third angle projection drawing

R039 TA3

- To be able to:
- understand the use of CAD and the design layout for producing drawings
 - identify and use simple drawing commands
 - understand the use of specific CAD drafting commands to produce 3D drawings
 - identify and use CAD drawing commands to produce more developed drawings
 - use more detailed CAD commands to carry out rendering to their design work
 - identify and use CAD to simulate a drawing
 - develop their use of CAD further to include the addition of detail
 - join CAD parts together using additional CAD commands

All skills are taught and assessed through mock assignments and focal practical tasks throughout Yr10.

After May/June half term pupils will start the live assignment set from the exam board (R039). This will go in to Yr11. Then pupils will start R040 after October half term of Yr11.

R040: Design, evaluation and modelling

R040 TA1

- Topic Area 1: Product evaluation
- I can:
- carry out a product analysis using ACCESS FM.

R040 TA2

- suggest improvements to the model
 - test the model against the specification
 - produce a physical model
 - produce a testing simulation of the CAD model
- Topic Area 2: Modelling design ideas
- I can:
- produce a virtual 3D CAD model
 - carry out a product disassembly and analysis
 - compare products using Ranking Matrices and Quality Function Deployment (QFD)