

WHAT ARE THE BIG AIMS OF YEAR 8 RESISTANT MATERIALS?

Pupils will investigate design contexts to develop ideas through modelling. Ideas will be generated and developed using computer aided design, then made using a range of workshop tools, equipment and computer aided manufacturing.

WHAT WILL EXCELLENCE LOOK LIKE IN YEAR 8?

A completed H&S workshop passport for a variety of processes.

Have a range of detailed plans which could allow a third party to make a product.

Used CAD/CAM to modify an existing mechanism to make an appropriate and original automata.

Demonstrated a range of hand tool and machine processes in the correct order to achieve a working passive speaker with a quality finish.

WHAT KNOWLEDGE DO THE PUPILS NEED TO ACQUIRE?

- Develop specifications that include wider range of requirements such as environmental, aesthetic, cost, maintenance, quality and safety.
- Create production schedules that inform their own and others roles in the manufacturing of products including GANT and flowcharts.
- Understand how CAM can improve accuracy and efficiency in the marking out / cutting of components.
- Implement and uphold safe working practises for individual processes based on their workshop passport.

WHAT SKILLS DO THE PUPILS NEED TO DEVELOP?

- Be able to adapt their methods of manufacture to changing circumstances.
- Make adjustments to settings (speed, power, depth, angles and tension) of equipment and machinery to ensure safe / accurate usage.
- How to construct simple mechanical system that considers gearing ratios and their effects.
- Be able to select from a range of permanent and temporary fixing methods to assemble components into a product that can be tested.

WHAT MISCONCEPTIONS MAY THEY HAVE FROM PREVIOUS LEARNING?

All adhesives are called glue and stick to anything plus screws are hammered in. Mistakes are irreversible and starting again is the only option.

Planning does not improve quality or timekeeping.

WHAT ASSESSMENTS WILL BE USED ACROSS THE YEAR TO DEMONSTRATE HOW THE PUPILS HAVE ACQUIRED THE KNOWLEDGE AND DEVELOPED THE SKILLS?

- Knowledge checker at start of unit of work – multiple choice questions.
- Ongoing teacher assessment of design and practical skills in order to inform planning.
- Peer and self-assessment of mechanisms / manufacturing plans / design specification.
- Ongoing formative assessment of level 2 words and subject specific terminology.
- Summative assessments of design and practical tasks for practical projects – mechanical toy and passive speaker.
- End of unit knowledge checker – multiple choice questions.