

Curriculum Implementation – Engineering

Key Stage 4

Key Concepts Taught



- Principles of engineering manufacture.
- Manufacturing processes.
- Engineering materials.
- Manufacturing requirements.
- Developments in engineering manufacture.
- Manufacturing a one-off product.
- Manufacturing in quantity.
- Develop programmes to operate CNC equipment.

How You Receive Feedback



- Self-Assessment
- Peer-Assessment
- Classroom discussions and debates
- Formative and Summative assessments





How do Lessons Link to Key Concepts



- Understand and apply the fundamental principles and concepts of Engineering Manufacture, including manufacturing processes, engineering materials, manufacturing requirements and developments in engineering manufacture.
- Develop learning and practical skills that can be applied to real-life contexts and work situations.
- Think creatively, innovatively, analytically, logically, and critically.
- Develop independence and confidence in using skills that would be relevant to the engineering, manufacturing, process, and control sector and
- more widely.
- Plan manufacturing production through practical experience of manufacturing for one-off products and manufacturing in quantity.
- Determine the sequence of operations required, recognising hazards and risks so that these can be controlled.

How we get Support with our Lessons



- Scaffolding
- Structured notes
- Design starters
- Blooms cognitive questioning





**Retrieval Practice
Opportunities /
Supporting Ways
to Help us
Remember**



- Create individual organisers.
- Assertive questioning.
- Documenting lesson key words and conclusions.
- Open book assessments.

**Opportunities for
Literacy**



- Students will develop their vocabulary through the introduction and usage of technical phrases.
- Students will make use of annotations to aid in the communication of ideas and sketches.

**Opportunities for
Numeracy**



- Using decimal numbers, fractions and percentages helps give precision and increasing degrees of accuracy in calculations.
- Understanding ratios is crucial from drawing scale to gear ratios.
- Engineering notation; being able to express large and small units of value easily.
- Measuring and calculating areas and volumes.





Opportunities for Oracy



- Present and communicate Engineering drawings through verbal and graphical communication lessons.
- Develop confidence in speaking through group presentations and group work.
- Interviewing clients.

Opportunities for Character Education



- Working with groups and with people in the wider community to solve specific problems, demonstrating, teamwork and ability to display empathy.

Opportunities for SMSC



- Students will tackle ethical questions surrounding the development of technology and its impact on people, culture and society as well as recognising the impact modern industry has on individuals economic and social footprints.

Opportunities for Assessing Learning



- Linking learning – what we did last lesson, this lesson and next lesson.
- Plenaries to reflect on learning.
- Quizzes
- End of unit assessments.

