

# Engineering

## Intent

HEBBURN  
Comprehensive School



WORK HARD | BE KIND | ASPIRE

The study of engineering is the application of maths and science to solve real world problems. This involves an understanding of the different disciplines of engineering and how they have shaped the products and projects of the modern world. Learners will be able to read technical drawings, select appropriate materials along with tools and machinery, and know how to carry out a practical task, working in a safe manner in line with current health and safety legislation.

The qualification focuses on an applied study of the engineering sector and learners will gain a broad understanding and knowledge of working in the sector. This qualification shows learners how to understand engineering disciplines, understand how science and maths are applied in engineering, understand how to read engineering drawings · understand properties and characteristics of engineering materials and know why specific materials are selected for engineering applications, understand engineering tools, equipment and machines, produce hand-drawn engineering drawings, produce Computer Aided Design (CAD) engineering drawings · demonstrate production planning techniques, demonstrate processing skills and techniques applied to materials for a manufacturing task, understand how to create, present and review design work.

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## Topics

### NCFE BTEC

Practical elements: working with wood, metal, polymers

Theory: health and safety, BSI standards, materials, properties of materials, PPE, engineering sectors, engineering drawings

Workshop practical projects: metal bottle opener, phone amplifier, adjustable mirror

Use of engineering equipment and tools: marking gauges, engineer squares, scribes, centre punches

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NCFE NEA (with use of workshop equipment)