

# Engineering

**Subject Leader:** Mr J Fulson

**Email:** [jfulson@taptonschoool.co.uk](mailto:jfulson@taptonschoool.co.uk)

**Curriculum Intent:** Through a combination of traditional and technological approaches, the Engineering programme will enable students to solve problems by learning from their mistakes when creating electronic and mechanical products and systems.

	Core Knowledge	Procedural Knowledge
Autumn Term 1	<b>Topics</b> <ul style="list-style-type: none"> <li>• Material properties of metals.</li> <li>• Metalworking processes and tools.</li> <li>• Lathe and milling machine operation.</li> </ul>	<b>Students will:</b> <ul style="list-style-type: none"> <li>• Follow Engineering drawings to plan making a Device Holder.</li> <li>• Plan for making.</li> <li>• Take part in practical lessons on manufacturing the Device Holder.</li> </ul>
Autumn Term 2	<b>Topics</b> <ul style="list-style-type: none"> <li>• Computer Aided Design.</li> <li>• Quality control.</li> <li>• Selection of materials.</li> </ul>	<b>Students will:</b> <ul style="list-style-type: none"> <li>• Follow Engineering drawings to plan making a Device Holder.</li> <li>• Risk Assess.</li> <li>• Take part in practical lessons on manufacturing the Device Holder.</li> <li>• Explain why materials have been chosen.</li> </ul>
Spring Term 1	<b>Topics:</b> <ul style="list-style-type: none"> <li>• Extracting information from engineering drawings</li> <li>• Health and safety and risk assessment.</li> <li>• Sustainable design.</li> </ul>	<b>Students will:</b> <ul style="list-style-type: none"> <li>• Follow Engineering drawings to plan making a Device Holder.</li> <li>• Risk Assess.</li> <li>• Take part in practical lessons on manufacturing the Device Holder.</li> <li>• Evaluate the completed product including if it meets tolerances.</li> </ul>
	The second half of the year is a repeat of content of the first three half terms with a rotation of a different group of students.	

## Homework:

Homework is set on Class Charts for every six hours taught. Homework will comprise a presentation on the negative impact of Technology and revision for tests.

## Assessment:

Formative verbal and other feedback. Exploration grade (research). Create grade (making). Evaluation grade. Principles grade through a multiple-choice test. Presentation skills and content grade.

## Links to Personal Development:

Iterative design. Dexterity and soldering skills. Coding. Self-evaluation of work. Presentation skills.

## How is my knowledge further developed in Year 9?

In Year 9, students that opt to take Engineering will explore electronics and structures, create a can crusher and a torch/flashlight, evaluate their work and develop a good understanding of Computer Aided Design.