**Engineering Key Information**

**“As engineers, we were going to be in a position to change the world – not just study it.”
—Henry Petroski, American engineer and author specializing in failure analysis**

**Introduction**

Engineering provides us with the world we live in today everything you use has been engineered to work and achieve a purpose. Engineering supports students learning across the board and they can apply the knowledge and skills in all other subjects to their engineering projects and apply them to real world problems.

The staff within the department include:

Gemma Davies, Head of Department.

Emma Williams, Teacher of Engineering. Emma has worked within several areas of engineering over the years and has a degree in combined STEM.

Steve Kurzyk. Engineering Technician.

**Course followed/Exam board**

At key stage 3 students will cover all requirements of the national curriculum of design and technology through a different engaging project each term. This project is delivered as an engineering brief would be delivered and from year 7 students are taught how to behave and expectations of the workplace.

At key stage 4 students can take the option of GCSE Engineering. This is with the AQA exam board. Students have a heavy focus on metal work, electrical and mechanical engineering but will also learn aspects of pneumatics, hydraulics, and aerodynamics.

**Skills the students will develop**

Students will develop their logical thinking, objectivity and decision making skills during their engineering lessons. Students will also be taught practical engineering skills and the theory part often compliments and reinforces their learning from other subjects including maths, science, geography, English and art.

**Future careers and vocations**

Future careers include hundreds of areas within engineering, project management, graphic design and management currently engineering is the most held undergraduate degree held by fortune 500 CEOS. ([5 benefits of studying engineering (kingstonisc.com)](https://www.kingstonisc.com/blog/5-benefits-of-studying-engineering))

Contacts

Gemma Davies: gemma.davies@sjchs.uk

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**Enrichment**

**Competitions**

The V and A design competition ran annually and performed by year 8.

**Extra-Curricular Clubs**

* Year 7 Mission X club. A chance for students to train like an astronaut and see what it involves. This includes science, engineering, food, nutrition, and fitness.
* All years Warhammer club.
* Year 8 Lego robotic club.
* Year 9 CREST silver award
* Year 10 CREST silver award
* Year 11 CREST gold award

**Reading**

**Reading for pleasure**

Students are provided with engineering book recommendations for pleasurable reading these include biographies and humorous books about engineering fails.

Academic Reading Students are encouraged to read and borrow books from the STEM library within the department. The texts we provide are varied and range from engineering and science magazines to DIY and how to books to reference books and biographies.

**Reading for parents**

* Engineering made simple by Michael McRae
* The engineering SharePoint all PowerPoints and class workbooks are there, and parents can access through their child
* Engineering for teens by Pauline McCauley

**Resources**

**Websites**

* [Home (jamesdysonfoundation.co.uk)](https://www.jamesdysonfoundation.co.uk/)
* [Neon - Brilliant inspiration for STEM teachers (neonfutures.org.uk)](https://neonfutures.org.uk/)
* [Sharepoint Resources for Engineering](https://stjosephscatholichigh.sharepoint.com/%3Af%3A/s/Engineering/Eq10DYzvd1FKu7nExeCHATEBOgZ2NiHYIUjj3sdt7RANag?e=fJl48Y)

**Multimedia**

* Engineering matters podcast.
* Autodesk education

Please Click the following links to view the Learning Journey Roadmaps:

[Engineering\_Learning Journey](https://sjchs.uk/wp-content/uploads/Engineering_Learning-Journey.pdf)