



AVANTI HOUSE

Excellence · Virtue · Devotion

2019-2020

Programmes of Study

Key Stage 3

Design Technology

DESIGN TECHNOLOGY

OVERVIEW OF COURSE

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing, and art.

PROGRAMME OF STUDY

Term	Year 7	Year 8	Year 9
Autumn	<p><u>Electronic Torch Project</u></p> <p>This project begins a pupils journey into the understanding of how to design electronic circuits. Whilst making their first circuit board which is a torch. Pupils will learn how to design a circuit for a breadboard and how to then advance it to a stripboard. This project will teach pupils about different electronic components and how to select the correct ones when designing a circuit.</p>	<p><u>CAD Project</u></p> <p>Pupils will begin using a range of software in the school computer suite. Being versatile and understanding how to use different software on the computer is a vital skill needed for designing and 3d visualization. Learning how to use packages like Google sketch up and Corel Draw will increase their understanding and skills to use their imagination to complete tasks.</p>	<p><u>Seagull Project</u></p> <p>This exciting project focuses on using the basic elements of a design and technology workshop and its tools and machinery. Pupils will make a wooden toy that can be played with. The have the chance to modify the design to suit their own personality.</p>
Spring	<p><u>CAD Project</u></p> <p>Animation forms the basis of this project. Pupils will learn about the origins of animation and through Computer Aided Design will design their own animation card that will fascinate every viewer. Pupils will also look into the work of Pixar Animation.</p>	<p><u>Praxinoscope Project</u></p> <p>Following on from the last project learning about animation. Pupils will make their own praxinoscope using laser cutting techniques and graphic design techniques. They will design their own animation for the device. The design possibilities are endless with this project.</p>	<p><u>Alarm project</u></p> <p>Students will build upon their existing knowledge of practical electronics and learn how to build an alarm circuit onto a breadboard, and then transfer the design onto stripboard. They will have a laser cut box that they will draw up the plans for and then laser cut.</p>

Summer	<u>Pewter Jewellery Project</u>	<u>Automata Project</u>	<u>Electronic Lamp Project</u>
	<p>Pupils learn how to design and make a pendant for a necklace. The jewellery piece will initially be designed by hand drawings and then advanced to a laser cut design in medium density fibreboard (MDF), using top of the range computers and software. The design is then cast between two slabs of aluminium plate. The pewter metal is then cleaned up with needle files and wet and dry paper for a polish finish.</p>	<p>This project is all about how to make things move. Pupils will make a simple automata of a wave with boats on. They will use different woods and use different processes to achieve their goals. Pupils have the chance to turn their work electronic and use skills in how to design for electronic component, as well as learn about there use</p>	<p>Pupils build upon their electronics experience and advance their knowledge through a more complicated circuit than the previous year. They will design and laser cut their own lamp for their home. Pupils will line bend and Solder their lamp together as well as complete many other industrial processes, whilst learning about different polymers and their uses. They will use jigs to maintain a degree of quality in their work.</p>

*all projects are subject to change or be moved at the discretion of the DT department

SKILLS / KNOWLEDGE / UNDERSTANDING

Pupils learn how to take risks with their designs, becoming resourceful, innovative, enterprising and capable designers. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

METHODS OF ASSESSMENT

We will use a range of assessments:

- Formal tests / examinations
- Tracking of quality of class and homework through books/folders
- Speaking and oral presentations
- Projects

We will also use a range of different styles of feedback to students:

- Extensive (deep) marking in which the teacher provides formative comments for future improvement which the student is expect to act on in the following lesson.
- Acknowledgment marking, where the teacher concisely marks the piece of work, highlighting positive work and addressing major misconceptions.
- Non-written feedback which can take the form of verbal, peer and self assessment.

RECOMMENDED READING / OTHER RESOURCES

<http://www.technologystudent.com>

<http://www.bbc.co.uk/bitesize>

<http://www.gojimo.com>

[GCSE Edexcel reading book](#)