Curriculum Map: TECHNOLOGY

What do we do?
The Design Technology curriculum provides students with a comprehensive technological knowledge base, of which will be applied in a wide range of practical contexts, situations and scenarios.

How does Technology equip students with powerful knowledge?
Students will design and make products that solve real and relevant problems, within a variety of contexts, while considering their own needs and those of others, external influences, and the application of theoretical understanding of processes and techniques. Students will develop a deep understanding of the wider influences on Design and Technology, which include; historical, social, cultural, environmental and economic factors, new and emerging technologies, developments in new materials and materials and their working properties.

What skills and cultural capital do students gain in Technology?
The Technology curriculum exposes students to a wide and diverse range of contemporary and historical designers and influencers. Students will also develop a detailed understanding of ethics and sustainability in relation to sourcing and processing materials, labour law, fair trade and product miles.

How do we support literacy in Technology?
Within all aspects of Technology literacy is essential and in particular, the correct use of technical language. In order to equip all students with the correct and extensive range of technical vocabulary, tier two and tier three language is delivered through modelling tasks and skills and teachers will demonstrate how to apply key vocabulary in a variety of contexts. Frayer models will be used to deepen understanding of critical tier three vocabulary.

How is the Technology curriculum designed?
The Technology curriculum is highly ambitious, academically challenging and relevant to real world situations and scenarios. Students learn the key concepts, skills and processes identified in the national curriculum from year 7 and then engage with them at a deeper level of understanding as they progress into year 9. In year 7 and 8 breadth is delivered through a rotation across the Creative Technologies subject areas. In Years 9 to 11 the curriculum is focused specifically on developing technological knowledge and the application of it through a series of design and make projects.

How do you use spaced practice / retrieval practice?
Retrieval practice is a feature of every lesson. Our 'Do Now' tasks are designed to interleave retrieval from previous topics, as well as offer the 'hinge' point for understanding of the current lesson. The curriculum design is such that the core knowledge taught underpins the next cycle and body of work, meaning that all students are constantly building on prior knowledge in new and challenging contexts. Knowledge organisers provide the foundations for this on a weekly basis.

What content do you cover and how is this delivered over time?
In years 7 and 8 the creative technologies foundation curriculum introduces and develops the essential skills such as, researching, problem solving, planning, generating ideas, developing ideas and evaluating, all of which students will need to thrive and succeed in all areas of creative technologies, should they choose to study these at greater depth through years 9 -11. At greater depth students are introduced to all material areas, the working properties of these materials, manufacturing processes and their wider implications on the world around us. Over time the work of others is considered in terms of how this may influence design thinking. Building on this students are introduced to computer aided design and technical drawing requirements in order to bring their thinking through the development phase and into production.

How do you sequence the curriculum so that new knowledge and skills builds on what has been taught before?
The curriculum has been carefully and thoughtfully sequenced to ensure that firstly through years 7 and 8 all students development the essential practical skills they will need should they choose to study a creative technology subject at greater depth in years 9-11. The Technology curriculum delivers knowledge and builds on this through a series of design and make tasks, in order to allow students to develop an understanding of knowledge application in a wide range of contexts. The culmination of the 5 year journey will require all students to draw upon the extensive range of knowledge and skills to independently design and make a fully functioning product.

Potential Future careers in Technology

Architect
Product/furniture designer
Set designer
Surveyor
Structural engineer
Automotive designer

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CYCLE 2
NEA Making principles
Satisfying the requirements of the brief/specification, development of prototypes, manufacturing processes, QA/QC, evaluation.

CYCLE 3
Completion of NEA, revision and GCSE exam

CYCLE 1
NEA Design principles
The design context, market research, design influences, design brief and specification, design iteration

CYCLE 3
New and emerging technologies
Enterprise, innovation, market push/pull

CYCLE 2
Energy generation, storage and sustainability issues
Energy sources, oceanic atmospheric pollution and the 6 R's

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CYCLE 2
Natural & manufactured timbers
Hardwoods, softwoods and manufactured boards

CYCLE 3
Manufacturing processes
Volumes, automation & ecological implications

CYCLE 1
Mechanical devices
Functions, types of movement, forces, levers, linkages and rotary systems

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CYCLE 1
Materials
Physical, mechanical and working properties

CYCLE 3
iMedia:
An ePostcard from Devon

CYCLE 2
Design Technology:
Biomimicry; the use of structures and forms in nature to inspire design ideas

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CYCLE 2
Design Technology:
Design and make it; Morag Myerscough inspired picture frame

CYCLE 3
iMedia:
Creating a digital product; Animation.

CYCLE 1
Design Technology:
Glasses holder; research, design and make task

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CYCLE 1
Digital Literacy:
eSafety, cyber security, apps, cloud computing and file structures

Key concepts

- Sustainability
- Diversity in design
- Creative problem solving
- Retrieval and recall
- Materials and their working properties
- Designers, design movements and influences
- Time management

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