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Abstract

Students are carefully provided with feedback on their learning to enable them to improve.
They gain the knowledge leading onto the skills that are necessary to enable them to become successful lifelong learners.

Curriculum – D&T

Intent, Curriculum Map & Curriculum



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# Whole School INTENT

**Southchurch students embrace learning opportunities.**

# INTENT, IMPLEMENTATION & IMPACT

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| **Intent*** Southchurch students are designers. They are inquisitive, creative and supportive. They iteratively reflect throughout the design process taking all learning opportunities available to them.
 |
| **Implementation*** Sequencing of the curriculum
* Adaptive teaching (to take into account of what the learners know and don't know)
* Extending opportunities for extracurricular
 |
| **Impact*** All students will achieve their potential with altered trajectories
 |

# KS2 Links

[KS2 National Curriculum](https://assets.publishing.service.gov.uk/media/5a7ca43640f0b6629523adc1/PRIMARY_national_curriculum_-_Design_and_technology.pdf)

# CURRICULUM MAP

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Autumn Term** |  | **Spring Term** |  | **Summer Term** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** | **27** | **28** | **29** | **30** | **31** | **32** | **33** | **34** | **35** | **36** | **37** | **38** | **39** |
| **Yr 7** | **Rotation 1.1 – Product Design**1. Coat Hook - (Resistant Materials, laser cutter, polymers)

**ASSESSMENT – Design Ideas** 1. 3D Modelling - On Shape – Cookie Cutter
 | **Rotation 1.2 - Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT – Practical sewing** | **Rotation 1.3**1. *Students in classes rotate between DT, Food Technology & Textiles/Graphics*
 | **Rotation 2.1 – Systems & Control**1. Brighter world: Torch (Electronics, Input, process, output, laser cutter, polymers)

**ASSESSMENT – Soldering** | **AP** | **Rotation 2.2 - Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT – practical** | **AP** | **Rotation 2.3***Students in classes rotate between DT, Food Technology & Textiles/Graphics* | **AP** |
| **Yr 8** | **Rotation 1.1 – Resistant Materials** 1. Relax: Candle holder (Resistant materials, aluminium

**ASSESSMENT – Practical Skill** | **Rotation 1.2 - Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT – Technical knowledge** | **Rotation 1.3**1. *Students in classes rotate between DT, Food Technology & Textiles/Graphics*
 | **Rotation 2.1 – Resistant Materials**1. Mechanical Toys: (Resistant materials)

**ASSESSMENT – Practical Skill** | **AP** | **Rotation 2.2 - Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT – Practical Skill** | **AP** | **Rotation 2.3***Students in classes rotate between DT, Food Technology & Textiles/Graphics* | **AP** |
| **Yr 9** | **Rotation 1.1 – Product Design**1. Fasttrack game (Resistant Materials, laser cutter, polymers, packaging)

**ASSESSMENT – Final Design** | **Rotation 1.2 - Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT –Dragons Den** | **Rotation 1.3**1. *Students in classes rotate between DT, Food Technology & Textiles/Graphics*
 | **Rotation 2.1 – Resistant Materials**1. Animal LED Light: Resistant materials

**ASSESSMENT – Design Ideas** | **AP** | **Rotation 2.2 – Technical Textiles**1. Understanding Fibers & Fabrics: Pencil Case (Textiles)

**ASSESSMENT – Design Ideas** | **AP** | **Rotation 2.3**1. *Students in classes rotate between DT, Food Technology & Textiles/Graphics*
 | **AP** |
| **Yr 10** | * **New and Emerging Technologies**

**ASSESSMENT –** End of Topic Assessment**Practical Skills** – Picture Frame**Practical Skills** - Band Saw Box **Practical Skills** – Coat Hook Aluminium**ASSESSMENT –** Practical Skills | * Systems Approach to Design
* Developments in New Materials

**ASSESSMENT –** End of Topic Assessment**Practical Skills** – 3D Printing**ASSESSMENT –** Practical Skills | * Materials and their working properties
* **Practical Skills** – LED Acrylic Light

**ASSESSMENT –** Practical Skills**AP1** | **AP** | **Practice Non-Exam Assessment 1****Specialist Technical Principles** * **ASSESSMENT -** Selection of materials or components / Using and working with materials
* **ASSESSMENT -** Communication of ideas
* **ASSESSMENT -** Material Management / Developing a prototype
 | **Practice Non-Exam Assessment 2****Designing Principals*** **ASSESSMENT -** The work of others
* **ASSESSMENT -** Design strategies
* **ASSESSMENT -** Investigation, primary and secondary data / Environment, social and economic challenges
 | **Revision** | **End of Year Examination Rehearsal** |
| **Yr 11** | **Non-Exam Assessment (NEA)****ASSESSMENT –** Deadline 1 (September)**ASSESSMENT –** Deadline 2 (October)**ASSESSMENT –** Deadline 3 (November)**ASSESSMENT –** Deadline 4 (December) **Final Deadline December** | **Revision**  | **Revision** | **Exams** |  |
| **Examination Rehearsal 1 - (December)**  |

# KS5 Links

[A-Level Design and Technology: Product Design (7552)](https://filestore.aqa.org.uk/resources/design-and-technology/specifications/AQA-7552-SP-2017.PDF)

# KS4 END OF COURSE EXPECTATIONS

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| **AQA Design and Technology GCSE** |
| **Aims and learning outcomes** | * demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcomes of design practice
* develop realistic design proposals as a result of the exploration of design opportunities and users’ needs, wants and values
* use imagination, experimentation and combine ideas when designing
* develop the skills to critique and refine their own ideas whilst designing and making
* communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing
* develop decision making skills, including the planning and organisation of time and resources when managing their own project work
* develop a broad knowledge of materials, components and technologies and practical skills to develop high quality, imaginative and functional prototypes
* be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding clichéd or stereotypical responses
* consider the costs, commercial viability and marketing of products
* demonstrate safe working practices in design and technology
* use key design and technology terminology including those related to: designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics.
 |
| **Assessment objectives** | * AO1: Identify, investigate and outline design possibilities to address needs and wants.
* AO2: Design and make prototypes that are fit for purpose.
* AO3: Analyse and evaluate:
	+ design decisions and outcomes, including for prototypes made by themselves and others
	+ wider issues in design and technology.
* AO4: Demonstrate and apply knowledge and understanding of:
	+ technical principles
	+ designing and making principles.
 |

# NATIONAL CURRICULUM LINKS

[Design and Technology National Curriculum](https://assets.publishing.service.gov.uk/media/5a7c99ebed915d6969f46087/SECONDARY_national_curriculum_-_Design_and_technology.pdf)

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| **Purpose of study** 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. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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. |
| **Aims*** The national curriculum for design and technology aims to ensure that all pupils:
* develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
* build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
* critique, evaluate and test their ideas and products and the work of others
 |
| **Skills****Design** * use research and exploration, such as the study of different cultures, to identify and understand user needs
* identify and solve their own design problems and understand how to reformulate problems given to them
* develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
* use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses
* develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

**Make** * select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
* select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

**Evaluate** * analyse the work of past and present professionals and others to develop and broaden their understanding
* investigate new and emerging technologies
* test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
* understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists
 |
| **Knowledge*** understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
* understand how more advanced mechanical systems used in their products enable changes in movement and force
* understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]
* apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].
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# PERSONAL DEVELOPMENT CURRICULUM

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| **Aims**The design and technology curriculum is designed to support and promote the vision of Southchurch High School, “A community of Opportunity, Learning and Aspiration”. The curriculum recognises not only the importance of allowing students to flourish academically but also our wider role in preparing our students for their adult life beyond school. Our Personal Development programme is underpinned by five core pillars; * **Equality and Diversity**
* **Cultural Capital**
* **Community and Wellbeing**
* **Careers and Employability**
* **Character Development.**
 |
| **Character Development:** All members of the school community (regardless of background or ability) understand, develop and demonstrate the values that underpin our student mission of a Community of Opportunity, Learning and Aspiration. * **Community of Opportunity** – All students are supported and encouraged to perform Infront of their peers and watched with mutual respect. Students are provided with various, collaborative group tasks each lesson in which all learners are supported o engage equally and freely share their ideas and opinions.
* **Learning** – All students have equal opportunity to access the curriculum. Students are taught and placed into mixed ability classes, ensuring all students are supported with adapted practice, where necessary, to ensure curriculum access. All students are invited to an array of enrichment opportunities including; clubs, trips and visits and workshops.
* **Aspiration** – Students are encouraged to develop their love of design through careers talks, trips and external speakers. They take every opportunity within lesson to learn and take control over their own personal development.
 |
| **Equality & Diversity:** The design and technology curriculum aims to develop an understanding through the design process of showing how people of different faiths, convictions, ability, gender, heritage and ethnicity can form a successful, cohesive and happy community that draws from the best in each of us.* Students will explore how the designing of products needs to consider the needs of different users and taking a consideration of cultural, ethical, and religious factors within the designing of new products.
 |
| **Wellbeing & Community** – The design and technology curriculum recognises the importance of our students knowing how to care for themselves both mentally and physically, whilst they also develop personal traits and virtues that will motivate and guide students with confidence and resilience. |
| **Cultural Capital** – The design and technology curriculum supports the school’s vision in ensuring that all students gain the knowledge and cultural capital they need to succeed in life through a wealth of experiences both in and outside the taught curriculum.* **Trips & Visits:**
	+ **New Designers**
	+ **IPECO Careers**
	+ **National Trust Heritage design**
* **Extra-Curricular:**
	+ Stem Go Cart Building
	+ Lego Club
* **British Values:**
	+ **Individual Liberty**: Students have choice over how they learn within certain aspects of the course and are encourages to discuss democratically where there are disagreements.
	+ **Mutual Respect**: Students are respectful when listening to the opinions and views of other students.
	+ **The Rule of Law:** The classroom rules enable all students to develop their skills in an environment where equipment and each other’s feelings are respected.The classroom rules ensure students are all responsible for the learning environment.
	+ **Tolerance:** Students are tolerant of the opinions and creative ideas of each other. Students value the wide variety of cultures that we explore from all over the world and are tolerant of different faiths and beliefs in the styles we study.
	+ **Democracy:** Students are all part of the learning experience and are listened to. Students assess each other’s work and celebrate each other’s successes. All students are granted autonomy and have the opportunity to make choices on how to develop their own creativity.
 |
| **Careers & Employability –** The design and technology curriculum is designed to ensure students have a breadth of opportunities and experiences that our pupils can start to build their own future pathways on. Through the design and technology curriculum, our students are supported to develop the following skills; * Communication
* Confidence
* Teamwork and Leadership
* Listening and Responding
* Creativity
* Critical thinking and problem solving
* Time management
* Research

**Events** * Small piece trust project days
* Webinars on careers within design and technology
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# SMSC CURRICULUM LINKS

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| **Spiritual development** Through the projects we offer and the curriculum we deliver at both key stages, the pupils are taught how to investigate products. This includes aesthetics, functionality, product evolution and the analysis of how products affect the quality of our daily lives. Pupils are encouraged to develop their thinking skills and explore the wider natural world around them. They are taught to reflect upon what they see and develop ideas and solutions to problems which are both workable and innovative. |
| **Moral development**Pupils are faced with moral decisions throughout the design process. This includes selecting materials and ways of manufacturing, identifying and meeting the needs of others, sustainability & environmental impact. They must also begin to understand the impact of new technologies and how these can often be employed to solve existing problems but sometimes also create their own moral dilemmas. The 6 R's are routinely discussed and referred to throughout the design & make process. Within the classroom and the wider community the pupils are expected to show respect to others and take responsibility for their own actions and of those around them, taking into consideration the consequences. |
| **Social development**Pupils are often asked to design and make products to meet the needs of users or clients by receiving valuable feedback from others. For this to be successful pupils must show mutual respect when working collaboratively. Peer evaluation of designed and made items plays a big part in Design & Technology work as this is a vital mechanism for progress. Pupils learn to articulate their thoughts and feelings about their own and other's’ work. To do this they need to take criticism without offence and provide feedback which is carefully considered and constructive. |
| **Cultural development**Pupils are taught that all their design work should be sensitive to needs and beliefs of different backgrounds, ensuring all imagery, text and products won't cause offence. Pupils must consider how their ideas and products can impact the world around them. Pupils are encouraged to use the work of artists and designers from a wide range of cultures and historical contexts to influence and support the development of their work. |

# Equality, Diversity and Inclusivity Links

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| **Aims**Within the different projects we look to ensure that there is a broad range emphasising equality, diversity and inclusivity. We ensure that all students work together within pairs, groups and teams to strengthen professional relationships within the classroom and promote an acceptance for all students and the wider world around them.  |