

# Design and Technology Curriculum Overview

## Department Vision

Preparing students to participate independently, confidently and successfully in an increasingly creative and technological world. Providing opportunities to research, analyse, create and evaluate; expressed through a creative journey.

This will be achieved through:

- Providing high quality teaching and learning which challenges preconceptions of traditional elements of design.
- Assessment, reflection and improvement opportunities built-in to a varied and inspiring curriculum.
- Chances to study and explore creative and core technical designing/making principals. Encouraging students to develop creative responses to “real world” scenarios through Research, Analysis, Creation and Evaluation; Including investigating a broad range of processes, material techniques and equipment.
- Providing learners with the expertise and life skills needed to prepare them for their next stage in education and life. This will be done through innovative curriculum and extra-curricular activities that will broaden the enrichment opportunities.
- Building students confidence in communicating their own ideas in a range of formats. Including oracy, numeracy, literacy skills and developing the use of appropriate technical language.
- Differentiated and extended lessons and content that allow all groups of students to access the curriculum and achieve success.

## Design and Technology Curriculum Offer @ SNA

Year 7 – Technology – two periods per week (rotation) – all students

Year 8 – Technology – two periods per week (rotation) – all students

Year 9 – Technology/Food - one period per week (rotation) - all students

Key Stage 4 option – Years 9-11 AQA GCSE Design and Technology

Key Stage 5 option – Year 12-13 AQA A-Level Design and Technology

## Subject Curriculum Map – 7 Year Plan- Design & Technology

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Year 7	Rotation 1: Technology- Sweet dispenser project Rotation 2: Textiles – Tim Burton inspired keyring Rotation 3: Food – Food safety/Food science/Healthy Living and Nutrition Rotation 4: Photoshop – Responding to a Client Brief and Graphic Design					
Year 8	Rotation 1: Technology - Design style inspired clock Rotation 2: Textiles – Japanese inspired pencil case Rotation 3: Food - Nutrients/Food Science/World foods Rotation 4: New and emerging Technologies - 3D CAD design					
Year 9	Rotation 1: Technology - USB powered CAD/CAM Lamp project & Systems and Robotics Rotation 2: Food - Special Diets/Macro and Micro Nutrients/Seasonality					
Year 10	FPT: Block head Tolerance challenge <i>Theory (Unit 2: Energy, Materials, systems and devices)</i> <i>Theory (Unit 3: Materials and their working properties)</i>		FPT: Specialist wood joints FPT: Drawing skills project <i>Theory (Unit 5D: Polymers)</i> Theory (Recap unit 1)		June: Begin GCSE NEA coursework <i>Theory (Unit 4: Common specialist technical principles)</i>	
Year 11	NEA coursework project & Mock exam <i>Theory (Unit 6: Designing principles)</i>		NEA coursework project (Easter deadline) <i>Theory (Unit 7: Making Principles)</i>		Revision of all theory units	
Year 12	200 minute project – Designers Iconic Designs FPT: Fusion (Introduction and 3D printed Phone stand) <i>Theory Paper 1 – Technical Principles</i>		Lamp Project (Design style inspired Research, Design and Make and Test) <i>Theory Paper 1 – Technical Principles</i>		NEA <i>Theory Paper 2– Designing and making principles</i>	
Year 13	NEA <i>Theory Paper 2– Designing and making principles</i>		NEA <i>Theory Paper 2– Designing and making principles</i>		Revision of all topics	

### Assessment Approach

Within our curriculum, we look at a variety of methods to assess our students. Below is the assessment plan which gives an overview of our assessment approaches with each year group.

<b>Assessment approach</b>	<b>Description</b>	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
Low stakes quizzing/ questioning and class discussion	Short answer questions from current or previous topics which is peer or self -marked							
Practical skills assessment	Individual practical skills and final pieces are assessed based on the assessment criteria for each year							
Lesson review	Students use Reflection activities on graded lesson outcomes through DIRT task activities, allowing students to make improvements							
Teacher, peer and self-assessment of contextual research, skill-based activities and evaluation	Contextual research, skill-based activities and evaluation work is graded by either the teacher, student or peer using the assessment criteria feedback, feedback is given to allow the students to improve their work							
Whole class feedback	Whole class feedback is given to students to overcome							

	misconceptions and provide the class the opportunities to discuss high level outcomes						
Summative end of unit and end of rotation assessments	Baseline and summative assessments are used to establish current knowledge/ acquired knowledge overtime to determine gaps in knowledge						
Mock exams using past papers	Past GCSE papers and exam style questions used to test how student can apply the knowledge into the exam context.						
Mini NEA projects	Mini NEA style projects and focus practical tasks built in through y10 and 12 to prepare students for the NEA.						
Non – Examined Assessment	Coursework: A design and make portfolio and practical piece						

### Assessment Schedule

Design and Technology Assessment Schedule - Years 7-13						
	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
<b>Year 7</b>	<b>Rotation1: Technology - Sweet dispenser.</b> Assessment 1: Teacher assessed: Designing and Evaluation Whole class feedback: Practical Assessment 2: End of Rotation Test	<b>Rotation2: Textiles - Tim Burton Keyring</b> Assessment 1: Teacher assessed: Designing Whole class feedback: Practical Assessment 2: End of Rotation Test	<b>Rotation3: Food - Safety/Food science/Healthy Living and Nutrition</b> Assessment 1: Teacher assessed: Practical Whole class feedback: Evaluation of practical Assessment 2: End of Rotation	<b>Rotation3: Technical Graphics - Photoshop user-centred graphic design</b> Assessment 1: Teacher assessed: Promoting Reading Poster Making Whole class feedback: All About Me Collage Assessment 2: End of Rotation		
<b>Year 8</b>	<b>Rotation1: Technology - Design style inspired clock</b> Assessment 1: Teacher assessed: Designing Whole class feedback: Practical Assessment 2: End of Rotation Test	<b>Rotation2: Textiles - Japanese inspired pencil case</b> Assessment 1: Teacher assessed: Japanese Inspired Pencil Case Making Whole class feedback: Final Designs Assessment 2: End of Rotation Test	<b>Rotation3: Food - Nutrients/Food Science/World foods</b> Assessment 1: Teacher assessed: Practical Whole class feedback: Evaluation of practical Assessment 2: End of Rotation Test	<b>Rotation3: Technical Graphics - New and Emerging Technologies - 2D/3D CAD design</b> Assessment 1: Teacher assessed: Designing Whole class feedback: CAD Assessment 2: End of Rotation Test		
<b>Year 9</b>	<b>Rotation 1: Design and Technology Project A: Desk Light</b> Assessment 1: Teacher assessed: Electronics Theory Assessment 2: End of project Test <b>Project B: Systems and Robotics</b> Assessment 1: CAD components. Whole class feedback: CAD assembly Assessment 2: End of project Test		<b>Rotation 2: Food</b> Assessment 1: Teacher assessed: Practical - Bean burger Assessment 2: Whole Class feedback: Evaluation of practical Assessment 3: Teacher assessed: Practical - Swiss roll Assessment 4: End of project Test			
<b>Year 10</b>	<b>FPT: Block head Tolerance challenge</b> Whole class feedback: Practical <b>Theory (Unit 2: Energy, Materials, systems and devices)</b> Whole class feedback: Theory notes Assessment 1: Teacher Assessed: End of unit test <b>Theory (Unit 3: Materials and their working properties)</b> Assessment 2: Teacher assessed: End of unit	<b>FPT: Specialist wood joints</b> Assessment 3: Teacher assessed: Practical <b>FPT: Drawing skills project</b> Whole class feedback: Practical <b>Assessment 5: Teacher assessed: Practical</b> <b>Theory (Unit 5D: Polymers)</b> Assessment 4: Teacher Assessed: End of unit test <b>Theory (Recap unit 1)</b> Assessment 5: Peer Assessed: End of unit test	<b>CAD/CAM project</b> Assessment 6: Teacher Assessed <b>Theory (Unit 4: Common specialist technical principles)</b> Whole class feedback: Theory notes Assessment 1: Teacher Assessed: End of unit test <b>June: Begin GCSE NEA coursework</b> Whole class feedback: Section A and B			
<b>Year 11</b>	<b>NEA coursework project Section C, D and E</b> Assessments 1 and 2: Whole class feedback: Section C and E <b>Formal Mock exam</b> Assessment 3: Teacher Assessed <b>Theory (Unit 6: Designing principles)</b> Assessment 4: Teacher assessed: End of unit test	<b>In class Mini Mock</b> Assessment 5: Teacher Assessed <b>NEA coursework project (Easter deadline)</b> Assessment 6: Teacher assessed and externally moderated <b>Theory (Unit 7: Making Principles)</b> Assessment 1: Teacher assessed: End of unit test	<b>Revision of all theory units</b>			
<b>Year 12</b>	<b>Project: 200 minute project</b> - Peer feedback <b>Iconic Design</b> - Teacher assessed grade <b>Fusion and 3D printing project</b> - Whole class feedback and Teacher assessed grade <b>Theory Paper 1 - Technical Principles:</b> Teacher assessed: Unit 1-5 end of unit tests x5 Whole class feedback: Note taking	<b>Project: Lamp Project</b> Teacher assessed: Section A and C Whole class feedback: Section A and C <b>Theory Paper 1 - Technical Principles</b> Teacher assessed: Unit 6-9 end of unit tests Whole class feedback: Test analysis	<b>NEA - Starts Easter</b> Whole class feedback: section A and B <b>Mock - June: Teacher assessed</b> <b>Theory Paper 1: Technical Principles</b> Teacher assessed: Unit 10-12 Whole Class feedback: Mock performance			
<b>Year 13</b>	<b>NEA - Section C and D</b> Whole class feedback: section C and D <b>Theory Paper 2- Designing and making principles</b> Unit 13 and 14 end of unit tests	<b>NEA - Section D and E (Easter deadline)</b> Whole class feedback: section D and E <b>Theory Paper 2- Designing and making principles</b> Unit 15 end of unit test	<b>Revision all units</b>			

NB: The order of rotation topics will differ depending on classes

### Cross Curricular links

Within our Design and Technology curriculum, we offer a variety of opportunities for cross curricular links, that benefits students at all levels. Our cross curricular links are as follows;

- Literacy - Students write extended answers around different topics within the 7 years. These are often linked to manufacturing, environmental, ethical, social and cultural issues with emphasis on quality of written communication.
- Numeracy – Students use their numeracy skills to convert different measurements. Pupils need to use basic arithmetic skills including working to scale, converting scale and calculations to work out volume, area and circumference ect.

Approximately 20% of the marks in the GCSE and A-level paper 1 are awarded for maths knowledge.

- SMSC – Students will be exposed to a variety of the best male and female designers and architects in the world through the theory work on designing principles, and through using the work of others to inspire their own designs. The curriculum within design and technology is focused on problem solving and gives students opportunities throughout to explore creative solutions to problems faced by others. This encourages the students to research the context of the problem and be empathetic towards the needs of others. Students will look at the best products on the market and compare them to “lesser” products to analyse them fully.

Throughout every project there is a focus on sustainability and the impact that poor design can have on the environment. Students will need to consider the environmental impact of all material and design choices including the Social, Moral and ethical impact. They should be aware of these factors and make decisions based upon research that they independently undertake. This will include: Energy sources, finite v’s renewable materials, sources of materials, impact of manufacture (including waste and pollution), impacts of packaging, carbon footprint, durability, planned obsolescence, the 6R’s of sustainability, product life cycle assessment and disposal of products. They will look at the social, moral and ethical impact of new technologies within designing and manufacture and how the development of new bio plastics and modern materials can positively impact the environment and people’s lives.

### Preparing for Life

At SNA, our Design and Technology curriculum supports and further develops the following skills within students to prepare them for life beyond school and the world of work. These include:

- Problem Solving – Students can see a problem or scenario and use a variety of creative designing and practical skills to suggest and develop solutions. Students will be expected to overcome a variety of challenges and problems that may occur when tackling a client lead design brief.
- Creativity – Chances to study and explore creative and core technical designing/making principals. Encouraging students to develop creative responses to “real world” scenarios through Research, Analysis, Creation and Evaluation; Including investigating a broad range of processes, material techniques and equipment.
- Listening/Speaking – Within lessons, students use their listening skills to decipher issues and problems which they come across. An important concept within our lessons is also listening to each other when pupils are expressing their points/findings.
- Team work – Collaboration is key within design and Technology and is something that is frequently used within lessons from using peer feedback to develop a design idea to paired research activities.

These group tasks allow students to effectively build their communication skills as well as discover their main strengths and weaknesses when working in a group.

· Staying positive and resilience – Within our curriculum, we place an emphasis on being positive and resilient as designing and manufacture can through up numerous errors/issues, which can take time to find a solution. Attention to detail is an important skill we teach students and being patient when doing this makes them even more successful.

### Co-Curricular

We offer an Eco-club and food clubs at ks3-5 to develop a great world understanding and provide skills to be an independent citizen.

At KS4 and 5, we offer extra intervention sessions for students who want extra support or want to learn beyond the curriculum. The aim of this is to support the students to achieve highly in their GCSE exam and NEA coursework.