ST CLEMENT'S HIGH SCHOOL

Design and Technology

Curriculum Intent

2021/2022

Design and Technology

Curriculum Intent 2021/22

Purpose of our study

Design and technology at St. Clements High is an inspiring, rigorous and practical subject. Our curriculum is designed around using creativity and imagination, getting our pupils to design and make high quality products that solve real world problems, 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. Through the evaluation of past and present design, they develop a critical understanding of its impact on daily life and the wider world. Our pupils should know how high-quality design and technology makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

Our 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.
- Understand that the world of design is limitless, and ever changing.

- Understand and apply the principles of nutrition and learn how to cook.
- Build knowledge of food safety and its importance in food preparation and storage.

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Subject Content

Design and Technology

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

When designing and making, pupils are taught to:

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 to generate creative ideas and avoid stereotypical responses
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, using visual communication through a variety of approaches

Create

- 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

Technical knowledge

- understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
- understand the characteristics of materials such as resistance, malleability, recyclability and sustainability
- understand how electrical and electronic systems can be powered and used in their products

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Subject Content

Cooking and Nutrition

As part of our pupils work with food, they are taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils also opens a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

When learning about food, pupils are taught to:

- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.
- Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes].
- Understand the source, seasonality and characteristics of a broad range of ingredients.

2021/22 Curriculum Plan – Design & Technology

	Half Term	Year 7	Year 8	Year 9	Year 10 (3D Design GCSE)	Year 11 (3D Design GCSE)
Autumn	**1**	**Materials:** Introduction to the DT Workshop - The Design and Manufacture of a 'Night Light'. Covering simple electronics and timbers theory	**Materials:** Bottle Opener Task. Correct use of the workshop and tools to produce high quality outcomes. Learning metal and timber theory.	**Materials:** A design and manufacture task where student will be able to explore creativity in designing a clock. Students will also recap theory of Timbers, Metals and Plastics.	**Independent Coursework 1:** Illumination Students will also undertake lessons throughout KS4 on skill building in the workshop	**Independent Coursework 2:** Curiosity
	2	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**Independent Coursework 1:** Illumination	**Independent Coursework 2:** Curiosity
Spring	**3**	**Food Technology:** Introduction to Food Technology - food hygiene, Health and Safety. Sequential tasks to build up knowledge and skills in the kitchen.	**Food Technology:** A series of individual tasks involving the factors that affect our food choice and food preparation skills. Skills tasks developing practical techniques for food production.	**Food Technology:** A series of individual tasks involving nutritional knowledge and food preparation skills. Skills tasks developing practical techniques for food production.	**Independent Coursework 1:** Illumination	**Edexcel Externally set assignment** Preparatory studies
	4				**Independent Coursework 1:** Illumination	**Edexcel Externally set assignment** Preparatory studies
Summer	**5**	**Design:** CAD/CAM tasks designed to build skills in the use of computer software to aide designing. A phone stand Task allows for Computer Aided Design & Manufacture. Plastic theory and processes	**Core Designing:** An introduction to a variety of drawing skills that are required to succeed in Design and Technology at GCSE. Students will build skills and then apply them to a creative design task.	**Jewellery Design:** A design task that requires students to be inspired by a design movement and create a unique piece of jewellery. A multiple materials project looking at timber, plastic and metal. Allowing students to show and explore their creativity	**Independent Coursework 1:** Illumination	GCSE 10 hour practical exam
	6				**Independent Coursework 2:** Curiosity	Moderation

Years 7, 8 and 9 rotate on a carousel of 4 units throughout the year, each lasting 15 lessons.

2021/22 Curriculum Plan – Hospitality and Catering

	Half Term	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn	**1**	**Materials:** Introduction to the DT Workshop - The Design and Manufacture of a 'Night Light'. Covering simple electronics and timbers theory	**Materials:** Bottle Opener Task. Correct use of the workshop and tools to produce high quality outcomes. Learning metal and timber theory.	**Materials:** A design and manufacture task where student will be able to explore creativity in designing a clock. Students will also recap theory of Timbers, Metals and Plastics.	**Controlled Assessment:** Students to complete the research section of their assignment	**Exam Preparation**: Students to work through the specification to gain theory knowledge
	2	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**PSHCE:** A separate unit covering Personal, Social, Health, Careers and Economic education. (see separate curriculum plan)	**Exam Preparation**: Students to work through the specification to gain theory knowledge	**Controlled Assessment:** Students to complete the planning section of their assignment
Spring	**3**	**Food Technology:** Introduction to Food Technology - food hygiene, Health and Safety. Sequential tasks to build up knowledge and skills in the kitchen.	**Food Technology:** A series of individual tasks involving the factors that affect our food choice and food preparation skills. Skills tasks developing practical techniques for food production.	**Food Technology:** A series of individual tasks involving nutritional knowledge and food preparation skills. Skills tasks developing practical techniques for food production.	**Controlled Assessment:** Students to complete the planning section of their assignment	**Controlled Assessment:** Students to complete the planning section of their assignment
	4				**Exam Preparation**: Students to work through the specification to gain theory knowledge	**Exam Preparation**: Students to work through the specification to gain theory knowledge
Summer	**5**	**Design:** CAD/CAM tasks designed to build skills in the use of computer software to aide designing. A phone stand Task allows for Computer Aided Design & Manufacture. Plastic theory and processes	**Core Designing:** An introduction to a variety of drawing skills that are required to succeed in Design and Technology at GCSE. Students will build skills and then apply them to a creative design task.	**Jewellery Design:** A design task that requires students to be inspired by a design movement and create a unique piece of jewellery. A multiple materials project looking at timber, plastic and metal. Allowing students to show and explore their creativity	**Controlled Assessment:** Students will focus in preparing for the practical element of the controlled assessment	**Exam Preparation**
	6				**Exam Preparation**: Students to work through the specification to gain theory knowledge	**Exam Preparation**

Years 7, 8 and 9 rotate on a carousel of 4 units throughout the year, each lasting 15 lessons.