

**Curriculum Narrative:** Design Technology



**Stretch**

***Bridges***

**Design & Make**

***Felt Phone Cases***

**Cooking & Nutrition**

***Pretzels***

**Stretch**

***Castles***

***Nets and Structures***

**Design & Make**

***Patchwork***

**Stretch**

***Marking out and cutting***

**Cooking & Nutrition**

***Fruit Smoothies***

**Design & Make**

***Moving Pictures***

**Cooking & Nutrition**

***Fruit Salad***

***Fruit Kebab***

**Design & Make**

***Junk Modelling***

***Bug Mobiles***

**Design & Make**

***Creative Shoes***

**Your Design Technology journey starts here!!**

**Cooking & Nutrition**

***Vegetable Curry***

**Stretch**

***Sewing***

**Design & Make**

***Fair Ground Rides***

**Stretch**

***Dyson Challenges***

**Cooking & Nutrition**

***Pasta***

**Stretch**

***Micro-bit Smart Wearables***

**Cooking & Nutrition**

***Fruit Crumble***

**Design & Make**

***Branding and Packaging***

**Cooking & Nutrition**

***Sandwiches***

**Year 1**

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| **Write like a designer** |
| Create design plans, explaining thought processes. |
| Evaluate own products as well as pre-existing products. |
| Produce questionnaires to acquire customer views. |
| Collate research to present design ideas/products. |
| Correctly use design vocabulary and technological key terms |
| Use labels and annotations on diagrams |

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| **Why do designers read?** |
| To find out specific information about products (materials, processes etc…) |
| To gain inspiration |
|  | To learn about the history of products |
| To help develop their own creative skills |

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| **Threshold Concepts** |
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| GetAttachmentThumbnail?id=AAMkADQ5MDJhYjkwLTAzZjgtNDY0NC1iMDFiLWYzNzJiMWU1ZDQ1OABGAAAAAACYZu2NgxGMS6aA4StNdVBDBwCh16Y%2F4mFITL6Rc8SqNx5FAAAAlY0CAABqzI%2F%2Fj8MNSJ3oTaWyQlDnAAO9iHhuAAABEgAQAClpp%2BIvUUNDgkcAW%2BqDy9s%3D&thumbnailType=2&token=eyJhbGciOiJSUz | **Make** |
|  | **Evaluate** |
| GetAttachmentThumbnail?id=AAMkADQ5MDJhYjkwLTAzZjgtNDY0NC1iMDFiLWYzNzJiMWU1ZDQ1OABGAAAAAACYZu2NgxGMS6aA4StNdVBDBwCh16Y%2F4mFITL6Rc8SqNx5FAAAAlY0CAABqzI%2F%2Fj8MNSJ3oTaWyQlDnAAO9iHhuAAABEgAQAKx0%2BG1WVlBNruUn%2F2Ld73c%3D&thumbnailType=2&token=eyJhbGciOiJSUz | **Technical Knowledge** |

**EYFS**

**Year 2**

**Year 4**

**Year 5**

**Year 3**

**Year 6**

**Welcome to secondary**

 **school!**

Design and Technology is a practical and extremely valuable subject. It enables children and young people to actively contribute to the creativity, culture, wealth and well-being of themselves, their community and their nation. It teaches them how to take risks and so become more resourceful, innovative, enterprising, innovative and capable. It encourages them to develop a critical understanding of the impact of design and technology on daily life and the wider world. It also provides excellent opportunities for children to develop and apply valuable judgements of an aesthetic, economic, moral, social and technical nature both in their own designing and when evaluating the work of others.

Our Design Technology curriculum aims to excite and ignite our pupils’ interest in design and technology and prepare them to participate in the development of a rapidly changing world. In each unit of work, they design and make products for a specific need or purpose - solving real and relevant problems within a variety of contexts. Through carefully constructed sequences of learning, they are taught about the world we live in and develop a wide range of skills embedded through the threshold concepts of designing, making, evaluating and problem solving – they are exposed to an abundance of technical knowledge in each and every lesson.

The curriculum has been carefully created by Primary Subject Leads and Secondary Heads of Department colleagues, who have worked collaboratively to create high quality toolkits to deliver the threshold concepts. An effective Design and Technology curriculum should encompass all of the threshold concepts within the delivery of each project.

**Threshold concepts**

**Design:**

* Using research and exploration to identify and understand user needs.
* Identifying and solving design problems.
* Developing specifications to inform the design of innovative, functional and appealing products in a variety of situations.
* Using a variety of approaches to generate creative ideas.
* Developing and communicating design ideas in a variety of formats.

**Make:**

* Selecting and using specialist tools, techniques, processes, equipment and machinery.
* Selecting and using a wide and complex range of materials, components and ingredients – considering their properties.
* Preparing and cooking a variety of dishes using a range of cooking techniques

**Evaluate:**

* Analysing the work of past and present professionals.
* Investigating new and emerging technologies.
* Using a design specification and user feedback to test, evaluate and refine ideas.
* Exploring the impact of design and technology on society and the environment.

**Technical Knowledge:**

* Understanding and using materials based on their properties and structural performance.
* Understanding how mechanical systems are used in products to change movement and force.
* Understanding how electrical and electronic systems are used and can be powered within products.
* Applying computing and programmable computers to embed intelligence into products.
* Understanding the principles of a healthy and varied diet.
* Understanding seasonality and food sources.

In order to equip children with a breadth and depth of knowledge, the curriculum embeds these threshold concepts through the completion of three projects/units in each year group:

* *Cooking and Nutrition*
* *Design and Make*
* *Stretch.*

In **EYFS**, pupils will be introduced to Cooking & Nutrition by preparing and tasting a range of fruits. Design skills will be developed through junk modelling, providing opportunities to use a range of motor skills. As they move into **Year 1**, pupils will further develop their design skills while making a ‘moving picture’; simple mechanisms will be introduced and motor skills will be honed while using tools and making simple devices. Fruit smoothies will be created, allowing them to investigate food sources and origins. In **Year 2**, pupils will continue to investigate food sources and origins while preparing their own sandwiches. A communal patchwork piece will be created, allowing them to develop textile skills, focusing upon modelling and product knowledge. Measuring, marking and joining skills will be used while working on a stretch unit – a castles project. On entering **Year 3**, the pupils will further develop their design skills while developing their own packaging. They will be introduced to programming via micro-bit technology, learning about simple electrical circuits and components. Fruit crumbles will be baked, allowing pupils to gain skills in food preparation and understand the safe use of a heat source. Moving into **Year 4**, pupils will look at seasonality and a healthy balanced diet while cooking their own pasta sauce. Creative shoes will be designed while pupils learn to work to a design criteria. Assembling, joining and combining skills will be further developed. Pupils will also work in groups on a range of Dyson challenges. In **Year 5**, pupils will build upon their knowledge of mechanisms and further develop their ability to design and make 3D outcomes. Sewing skills will be honed during the stretch project, focusing upon different types of stitch and applique techniques. Whilst making pretzels, pupils will look at food processing and options for adapting recipes. As they enter into **Year 6** pupils will utilise the textiles skills gained from prior learning while designing and making a felt phone case. The bridges project will allow them to gain further knowledge about structures while building upon their assembling, joining and combining skills. While cooking a curry, pupils will learn more about recipe adaptation while further developing their food hygiene and preparation skills.

Each project has been specially designed to provide children with the wide range of skills and technical knowledge needed to allow them to succeed and thrive in Design Technology. Materials have been designed to ensure clarity and consistency of delivery to ensure an agreed standard. Core skills are sequenced to be revisited at least once within each key stage to ensure that knowledge is built upon and developed through retrieval and skill practise. Recall is a feature of theory sessions, developing student’s ability to transfer skills between projects and different media.

The Geography curriculum aims to inspire students with curiosity and fascination about the world around them. Our curriculum aims to equip students with knowledge and give them an understanding about natural and human environments, diverse places, people and resources, including the Earth’s key physical and human processes. The study of geography should give students an understanding of their place in World. As students progress through the curriculum narratives, so should their understanding of the threshold concepts:

* *location and place knowledge*
* *geographical techniques*
* *physical features and processes*
* *human interaction with the environment*

In EYFS students develop an understanding of the world, where they are and other places through studying Magnificent Me and Up, Up and Away. In Key Stage 1 students gain a greater understanding of the world around them, studying their local area, the weather, planet earth and Africa. In Lower Key Stage 2, students develop a greater understanding of physical processes and the

natural world, studying the UK in more detail, volcanoes and earthquakes, rivers and coasts. In Upper Key Stage 2, students explore the human world, enabling them to see links to their physical geography. They will study settlements and land use, natural resources and their use, biomes and North America. This curriculum prepares them with high quality skills and knowledge needed for Key Stage 3 and beyond.

**The Threshold Concepts**

Within geography, there are 4 key threshold concepts, which when combined, ensure that our students can access a deep understanding of the subject. The threshold concepts relate to core aspects of disciplinary knowledge and substantive knowledge. For example, when ‘thinking like a geographer’, students need a deep understanding of place, knowledge and geographical skill to enable their understanding of physical and human geography.

**Location and Place Knowledge**

Location and place knowledge is not simply about knowing where a place is in the world. It includes:

*• Location Knowledge: world countries, regions, environments, continents, physical features (rivers and mountains)*

*• Physical Knowledge: similarities and differences between places (physical and human), cultures, cities, capitals*

*• Map Literacy: latitude, longitude, equator, northern hemisphere, southern hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones*

**Geographical Techniques**

The use of geographical techniques such as fieldwork, but also the use of terminology and geographer traits, such as:

• *Map literacy, Ordinance Survey maps, grid references, latitude and longitude, atlases, globes, GIS (Google maps), aerial photos.*

*• Numeracy and graphicacy, manipulating data, interpreting graphs and tables, constructing graphs.*

*• Literacy skills using key terminology, constructing and writing arguments, writing persuasively.*

*• Annotating diagrams/photos, using case studies, causes, effects, responses, processes leading to landforms, inferring information and making judgements.*

**Physical Features and Processes**

Looking at the natural landscapes, features and the processes which create them. This is done

in two stages:

*1. Characteristics (describe) What does the feature look like? What makes it unique? What are its dimensions? Observations (figures, photos, diagrams).*

*2. Processes (explain) Why does the feature/event occur? Step-by-step formation, directly link how the processes create the characteristics.*

**Human Interaction with the Environment**

Humans interact in a number of ways including:

*• Land use, types of settlement, economic activity including trade links, distribution of natural resources.*

*• Human impacts on the natural environment, human induced hazards, impacts of natural hazards on people.*

*• Human responses to natural hazards and to human induced hazards.*

