Design Technology

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 • Understand and apply the principles of nutrition and learn how to cook.

DT skills will be taught as an integrated part of a theme based curriculum, with skills being applied in relation to each class' current topic.

		Year 3	Year 4	Year 5	Year 6
Creativity	**Generation of ideas**	Develop design criteria to inform a design.	Use annotated sketches and exploded diagrams to test and communicate their ideas.	Use pattern pieces and computer-aided design packages to design a product.	Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.
	Use of ICT	Write a program to make something move on a tablet or computer screen.	Write a program to control a physical device, such as a light, speaker or buzzer.	Link a physical device to a computer or tablet so that it can be controlled (such as changing motor speed or turning an LED on and off) by a program.	Use a sensor to monitor an environmental variable, such as temperature, sound or light.
	Structures	Create shell or frame structures using diagonal struts to strengthen them.	Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them. A prototype is a mock-up of a design that will look like the finished product but may not be full size or made of the same materials.	Build a framework using a range of materials to support mechanisms.	Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.
Investigation	**Investigation**	Use tools safely for cutting and joining materials and components.	Select, name and use tools with adult supervision.	Name and select increasingly appropriate tools for a task and use them safely.	Select appropriate tools for a task and use them safely and precisely.
	Evaluation	Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.	Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.	Test and evaluate products against a detailed design specification and make adaptations as they develop the product.	Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.
Nature	**Food preparation and cooking**	Prepare and cook a simple savoury dish.	Identify and use a range of cooking techniques to prepare a simple meal.	Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish.	Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.
	Nutrition	Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars).	Design a healthy snack or packed lunch and explain why it is healthy.	Evaluate meals and consider if they contribute towards a balanced diet.	Plan a healthy weekly diet, justifying why each meal contributes towards a balanced diet.
	Origins of food	Identify and name foods that are produced in different places. T	Identify and name foods that are produced in different places in the UK and beyond.	Describe what seasonality means and explain some of the reasons why it is beneficial.	Explain how organic produce is grown.
Materials	**Materials for Purpose**	Plan which materials will be needed for a task and explain why.	Choose from a range of materials, showing an understanding of their different characteristics.	Select and combine materials with precision.	Choose the best materials for a task, showing an understanding of their working characteristics.
Processes	**Electricity**	Incorporate a simple series circuit into a model.	Incorporate circuits that use a variety of components into models or products.	Use electrical circuits of increasing complexity in their models or products, showing an understanding of control.	Understand and use electrical circuits that incorporate a variety of components (switches, lamps, buzzers and motors) and use programming to control their products.
	Mechanisms and Movement	Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products.	Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products.	Use mechanical systems in their products, such as pneumatics and hydraulics.	Explain and use mechanical systems in their products to meet a design brief.
Comparison	**Compare and Contrast**	Explain the similarities and difference between the work of two designers.	Create and complete a comparison table to compare two or more products.	Survey users in a range of focus groups and compare results.	Create a detailed comparative report about two or more products or inventions.

Design Technology

Humankind	**Everyday products**	Explain how an existing product benefits the user.	Investigate and identify the design features of a familiar product.	Explain how the design of a product has been influenced by the culture or society in which it was designed or made.	Analyse how an invention or product has significantly changed or improved people's lives.
	Staying safe	Use appliances safely with adult supervision.	Work safely with everyday chemical products under supervision, such as disinfectant hand wash and surface cleaning spray.	Explain the functionality and purpose of safety features on a range of products.	Demonstrate how their products take into account the safety of the user.
Significance	**Significant People**	Describe how key events in design and technology have shaped the world.	Explain how and why a significant designer or inventor shaped the world.	Describe the social influence of a significant designer or inventor.	Present a detailed account of the significance of a favourite designer or inventor.