Learning Map – Design and Technology

Specifying the cumulative knowledge and skills that should be taught in this subject

<u>Purpose of Study:</u> 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.

<u>Aims:</u> 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.

	Year 1/2	Year 3/4	Year 5/6
Design	To design purposeful, functional and appealing products for themselves and others based on design criteria. To generate, develop and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	To use research to design products that are fit for a purpose, aimed at particular individuals or groups. To generate, develop, and communicate their ideas through discussion, annotated sketches and information and communication technology.	To use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
Make	To select from and use a range of tools and equipment to perform practical tasks (*cutting, shaping, joining, finishing*). To select from and use a wide range of materials and components, including constructions materials, textiles and ingredients, according to their characteristics.	To select from and use a wider range of tools and equipment to perform practical tasks (*cutting, shaping, joining and finishing*). To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	To select from and use a wider range of tools and equipment to perform practical tasks (*cutting, shaping, joining and finishing*) accurately. To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.
Evalutate	To explore (Year 1) and evaluate (Year 2) a range of existing products. To evaluate their ideas and products (Year 1) against design criteria (Year 2).	To investigate a range of existing products. To evaluate their ideas and products against the design criteria and consider the views of others to improve their work.	To investigate and analyse a range of existing products. To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. To understand how key events and individuals in design and technology have helped shape the world.
Technical Knowledge	To build structures, exploring how they can be made stronger, stiffer and more stable. To explore and use mechanisms (*levers, sliders, wheels and axles*) in their products.	To develop their understanding of how to strengthen, stiffen and reinforce structures. To explore and use mechanical systems in their products (*gears, pulleys, cams, levers and linkages*). To explore and use electrical systems in their products (*series circuits incorporating switches, bulbs, and buzzers*).	To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. To understand and use mechanical systems in their products (*gears, pulleys, cams, levers and linkages*). To understand and use electrical systems in their products (*series circuits incorporating switches, bulbs, buzzers and motors*). To apply their

			understanding of computing to programme, monitor and control their products.
Cooking and Nutrition	Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.	Understand and apply the principles of a healthy and varied diet. Cook a repertoire of predominantly savoury dishes. 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 their senses to explore and evaluate combinations of ingredients; adapting and using their own recipes*]. Understand the source, seasonality and characteristics of a broad range of ingredients.	Understand and apply the principles of a healthy and varied diet. Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy, varied and affordable 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]* To understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

The example content listed in italics is non-statutory.