Swaffham Primaries Partnership

Design Technology Curriculum

Design Technology Intent

What is DT?

> "Design is a funny word. Some people think design means how it looks. But of course, if you look deeper, it's really how it works."
> Steve Jobs
> "Technology makes possibilities. Design makes solutions."
>
> John Maeda

Children learn about the designed and made world and how things work. They also learn about how designers make functional products for particular purposes and users. Children acquire and apply knowledge and understanding of materials and components, mechanisms and control systems, structures, existing products, quality and health and safety. It helps develop children's skills through collaborative working and problem-solving where they are encouraged to be creative and innovative, and are actively encouraged to think about important issues such as sustainability and enterprise. The skills learned in D&T also help with learning across the curriculum particularly in applying knowledge and skills in maths, science as well as in computing and, naturally in art and design.

Through our Design and Technology curriculum our children will:

- be prepared to deal with tomorrows rapidly changing world.
- be encouraged to learn to think and intervene creatively to solve problems both as individuals and as members of a team
- be enabled to identify needs and opportunities and to respond to them by developing a range of ideas and by making products and systems.

We will endeavour to provide our children with opportunities to combine their practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industry. This will allow them to reflect on and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

We will give the children the opportunity to be inspired and to encourage our children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Wherever possible we will link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present 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 .

The following key question run through all design technology

- What is its function?
- What materials have been used and why?

- How is it made?
- What tools have been used?
- Why is it designed that way?
- How can it be improved?

Core Concepts

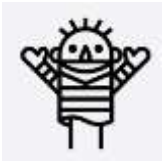
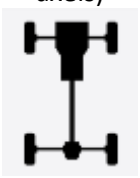
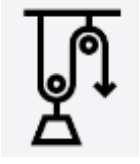
Core concepts are revisited thus building upon children's knowledge and understanding

Design	A plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made.
Nutrition	The nourishment or energy that is obtained from food consumed or the process of consuming the proper amount of nourishment and energy. An example of nutrition is the nutrients found in fruits and vegetables. An example of nutrition is eating a healthy diet.
Technology	Science or knowledge put into practical use to solve problems or invent useful tools.
Evaluate	The act or the result of evaluating a situation that requires careful consideration to determine the value, nature, character, or quality of something.
Functionality	The quality or state of being functional. A design that is admired both for its beauty and for its functionality: the set of functions or capabilities associated with something.
Innovation	The process of making (something) new or doing something in a new way. ***Innovation*** also has to include the concept of improvement; to ***innovate*** is not just to do something differently, but to do or make something better.

Vocabulary

appealing authentic design design brief design criteria design decisions design specification	evaluate function functional functionality ideas	innovative investigate make mock-up model planning	prototype product purpose replica research user sketch

Design Technology Overview

		Autumn	Spring	Summer
EYFS	**Year A**	Learning themes taught in the EYFS differ each year in order to follow the interests of each cohort. This is in line with the Early Years Foundation Stage Framework. Skills associated with Design Technology content will be embedded within these learning themes. e.g All about me, Journeys, Polar Explorers, Growing & Changing		
KS1	**Year A**	Construction Can we build a stable structure?  Build a replica of a London landmark	Food Can we make a healthy meal?  A Tanzanian fruit salad	Textiles  Making a puppet
	Year B	Mechanisms (wheels and axels)  How can I make a trailer that can be pulled?	Construction (materials)  How can I make a boat that floats?	Food  How can I make fat balls for local birds?
Lower KS2	**Year A**	Textiles - Tie Dying 	Cooking and nutrition: healthy and varied diets 	Levers and mechanisms 
	Year B	Cooking and nutrition: design and make biscuits 	Keep it safe: shell, solid and combinations structures 	Textiles: joining techniques and templates 
Upper KS2	**Year A**	Construction: Mayan mask 	Create an air raid warning system 	Enterprise Project - designing, marketing and evaluating 
	Year B	Greek cooking - pitta bread and salad 	Levers and mechanisms 	Enterprise Project - designing, marketing and evaluating 

			Design and create a mechanism to move goods in developing countries	

Skills Progression

	EYFS	Year 1 / Year 2	Year 3 / Year 4	Year 5 / Year 6
Designing (design technology evaluate functionality innovation)	Questions why things happen Engage in open-ended activity Think of ideas & find ways to solve problems / find new ways to do things / test their ideas use senses to explore the world around them. planning, making decisions about how to approach a task, solve a problem and reach a goal. Begin to show accuracy and care when drawing. Choose the right resources to carry out their own plan. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Return to and build on their previous learning, refining ideas and developing their ability to represent them	use own ideas to design something and describe how their own idea works design a product which moves explain to someone else how they want to make their product and make a simple plan before making think of an idea and plan what to do next explain why they have chosen specific textiles	prove that a design meets a set-criteria design a product and make sure that it looks attractive choose a material for both its suitability and its appearance use ideas from other people when designing produce a plan and explain it persevere and adapt work when original ideas do not work communicate ideas in a range of ways, including by sketches and drawings which are annotated	come up with a range of ideas after collecting information from different sources produce a detailed, step-by-step plan explain how a product will appeal to a specific audience design a product that requires pulleys or gears use market research to inform plans and ideas follow and refine original plans justify planning in a convincing way show that culture and society is considered in plans and designs

Making (technology evaluate functionality innovation)	Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Share their creations, explaining the process they have used. Use a range of small tools, including scissors, paint brushes and cutlery. Checking how well thor activities are going. Changing strategy as needed. Reviewing how well the approach worked.	use own ideas to make something make a product which moves choose tools and materials and explain why they have chosen them join materials and components in different ways measure materials to use in a model or structure make a model stronger and more stable use wheels and axles, when appropriate to do so	follow a step-by-step plan, choosing the right equipment and materials select the most appropriate tools and techniques for a given task work accurately to measure, make cuts and make holes know which tools to use for a particular task and show knowledge of handling the tool know which material is likely to give the best outcome measure accurately know how to strengthen a product by stiffening a given part or reinforce a part of the structure	use a range of tools and equipment competently make a prototype before making a final version know which tool to use for a specific practical task know how to use any tool correctly and safely know what each tool is used for explain why a specific tool is best for a specific action use knowledge to improve a made product by strengthening, stiffening or reinforcing
Food Technology (design nutrition technology evaluate functionality)	Understanding the importance of healthy food choices. Use a range of small tools, including scissors, paint brushes and cutlery.	Cut food safely weigh ingredients to use in a recipe describe the ingredients used when making a dish or cake	describe how food ingredients come together weigh out ingredients and follow a given recipe to create a dish talk about which food is healthy and which food is not	know how to prepare a meal by collecting the ingredients in the first place know which season various foods are available for harvesting explain how food ingredients should be stored and give reasons work within a budget to create a meal

			know when food is ready for harvesting know how to be both hygienic and safe when using food bring a creative element to the food product being designed	understand the difference between a savoury and sweet dish