

How is the design and technology curriculum organised?

The design and technology curriculum is organised around the key concepts: mechanisms, structures, textiles and systems (electrical or mechanical). Our units of work will address these concepts so the children's cumulative knowledge, built over time, will give them a greater breadth and depth of technological knowledge and thinking. Design and technology is an important part of the STEM curriculum. It is a structured and practical subject, encouraging children to use their creativity and imagination to design, create, make and evaluate products to solve real and relevant problems within a variety of contexts. Understanding the purpose of what they are creating is vital to meeting the needs and wants of the consumers.

Cooking and nutrition is to be taught separately

How are key strands of learning used?

The key strands within the design and technology curriculum deliver the disciplinary knowledge and understanding that the children need to become successful designers and innovators. This knowledge is hierarchical and so our curriculum has been designed in such a way to ensure that the children's knowledge is built upon in a progressive way, allowing the knowledge to grow over time. Disciplinary concepts include design, make, evaluate and technical knowledge which are studied to learn more across the year groups.

Design and Technology			
	Autumn Term	Spring Term	Summer Term
KS1 Cycle A	Mechanisms - Wheels and Axles	Food- Dip and Dippers	Textiles- Glove Puppet Joining
KS1 Cycle B	Structures- Freestanding	Mechanisms - Sliders and Levers	Food
LKS2 Cycle A	Textiles- 2D to 3D	Food- Bread	Electrical systems
LKS2 Cycle B	Food	Structures- Shell (computing)	Mechanical systems (pneumatics)

KS2.CB.T1	Area of study: Food Technology Unit aims / outcome: <ul style="list-style-type: none"> • To create a cereal snack bar • To understand and apply the principles of a healthy and varied diet. 	
Design and Technology concepts to organise knowledge: Cooking and Nutrition: refers to cooking and applying principles of nutrition and healthy eating.		
Key concepts of learning:		
Disciplinary knowledge: Design: <ul style="list-style-type: none"> • a cereal snack bar to rival other brands • say why the product has to be a different favour experience and meet the design criteria. Make: <ul style="list-style-type: none"> • Select and use appropriate utensils and equipment to measure, prepare and combine ingredients. • Follow health and safety and hygiene rules • Use appropriate ingredients to add flavour but also ensure that the cereal bar is healthy. Evaluate- <ul style="list-style-type: none"> • Talk about the design • Explore whether it has met the design criteria and is an alternative to other brands (Ms Molly and Nature Valley) Technical knowledge- <ul style="list-style-type: none"> • Know how to use the tools, e.g. scales, mixing spoon, bowl, knife • Know the process of keeping clean when cooking • Know which tools are used for which purpose 		
	Tier 2 <u>New</u> Cereals- Grass such as wheat, barley and rice. The grain from these crops are used for food. Ingredients- Foods that are combined to make a particular dish. Flavour- The sensations detected by the tongue	Tier 3 <u>New</u> Sensory evaluation- Testing of foods based on senses: appearance, smell, taste, texture. Seasonal recipe- A list of ingredients and instructions for making a food dish. Food that is harvested during a particular time of the year.

	<p>which, with smell and texture, give food its taste.</p> <p>Hygiene-The practice of keeping clean to stay healthy and prevent disease.</p> <p><u>Review – Reception</u> Diet Healthy Spreading mixing</p>	<p><u>Review</u></p>
<p>NC objective:</p>	<p>Vocabulary and crucial knowledge:</p>	
<ul style="list-style-type: none"> • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from. 	<p><u>Context of study:</u></p> <p>This unit will build on from (KS1.CA.T2) (KS1.CB.T3) and (KS2.CA.T2) when the children make other healthy foods and allow them to build on their understanding of the importance of healthy food choices. During Science in KS1.CB.T1 they will have looked at balanced diet and why this is important. They will also look at the importance of hygiene which will be further developed on in this unit as the children must understanding hand washing happens prior to starting cooking and preparing and that surfaces they are working on must be clean. This unit will also lead on nicely from KS2.CA.T2 science learning around nutrition and what elements our food is made up of. Using fruits and learning some of the technical knowledge of how to cut and chop in KS1 will benefit the children when they start preparing their ingredients for their cereal bars. They will also have some knowledge around where food comes from and where and how a variety of ingredients are produced or grown.</p> <p><u>Crucial Knowledge:</u></p> <p><u>Design Criteria:</u></p> <p>To know that food technology is the application of food science to the selection, preservation, processing, packaging and distribution and use of safe food. Children to understand cereal snack bars are healthy and eaten by a range of people. Children to understand they are going to make a cereal bar. Children to know Ms Molly and Nature valley are brands that make cereal bars (perhaps provide information and important statistics that show these brands in the current industry market).</p> <p><u>Research:</u></p>	

Taste test these two brands as well as others and evaluate them. To know that evaluate means have an opinion or decide around something e.g. do they like or dislike the cereal bars? Children discuss how they might describe the different cereal bars. Carry out sensory food testing of existing products using some sensory vocabulary. Record the evaluations using simple tables. Encourage the children to think about the key words: ingredients, evaluate, senses, taste, texture, smell, appearance.

Design:

Chocolate

Chocolate could be added but it would not be the healthiest option.

Oats

Oats are an essential ingredient when making oat bars.

Dried fruit

Dried fruit is a great way to add fruit to an oat bar.

Honey or golden syrup

Honey is important to help bind the ingredients together.

Children will design and make a cereal bar product.

Generate ideas based on sensory food testing and talking with peers and adults to develop ideas for your own design.

Choose ingredients based on testing, internet research and the eat well plate to make the design fit the purpose of being healthy. Children will know what ingredients they are going to use in their cereal bar and draw and label a diagram that fits the design criteria.

What must their product include to be successful?

The product should be:

- Be full of flavour.
- Be cooked perfectly, not over baked and not under baked.
- Have at least two different ingredients
- have the ingredients combined to stay together in a set shape.

Children draft their design criteria and it has been modelled by a teacher on how to create a design map of ideas. (They should make clear links between the research and the design. As a class share ideas and discuss. Which design do you think is most original? Why? Which design do you think meets the specification on the design criteria best? Why? Consider the views of other children and edit your designs accordingly)

Make:

Children will know the food hygiene rules and health and safety rules.

Children will learn how to use the tools safely to mix and combine their ingredients.

They will select and use appropriate utensils and equipment to measure, prepare and combine ingredients.

Children will refer to the design criteria as they make their cereal bar.
Encourage children to implement improvements as their designs develop.

Evaluate:

Children will explain their ideas to the rest of their class as to why they choose the design that they did (allowing time for children to practise this first) Were they able to clearly communicate their final design? Children will learn what a consumer of their cereal bar thinks and make notes based on their own product and the opinions that have been offered. (This process will model how to evaluate a product to support the children when they write their own evaluations). Children will complete an evaluation of their cereal bar. They must ensure they are evaluating against their design criteria.