



Design Technology Long Term Plan (NEW)

	Unit 1	Unit 2	Unit 3
Reception	<p><u>Construction</u> People who help us - design, make and evaluate models</p> <p>-Build and join 3D structures using a range of materials for a specific purpose. -Select appropriate materials and adapts work when necessary.</p>	<p><u>Textiles</u> Transport – design, make and evaluate a pirate hat</p> <p><u>Construction</u> Vehicles – cars, boats and aeroplanes – junk modelling Chinese dragons, moving dragons using split pins</p> <p><u>Cooking and nutrition:</u> design, make and evaluate decorating biscuits</p>	<p><u>Construction</u> Minibeasts – design, make and evaluate using the local environment as a stimulus for designing a mini-beast and it’s home.</p> <p><u>Cooking and nutrition:</u> Senses – designing and making fruit kebabs.</p>
Year 1	<p><u>Construction</u> – design, make and evaluate vehicles using wheels with axles.</p> <p>- begin to generate ideas by drawing on our own experiences - develop and communicate ideas by talking and drawing - explore the movement of simple mechanisms such as wheels and axles - use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p>	<p><u>Textiles</u> – design, make and evaluate a bag.</p> <p>- use knowledge of existing products to help come up with ideas - measure, mark out, cut and shape materials - use a simple running stitch and learn about different types of stitches - practise sewing two small pieces of fabric together, demonstrating the use of, and need for, seam allowances. - create and use a paper pattern using 2-D shapes - explore a range of decorative finishing techniques</p>	<p><u>Cooking and nutrition:</u> design, make and evaluate a fruit salad.</p> <p>- name and sort given foods into the five groups in The Eatwell Plate - explain that we should eat at least five portions of fruit and vegetables every day - prepare simple dishes safely and hygienically, without using a heat source - use techniques such as cutting and peeling - talk about basic food hygiene practices when handling food</p>
Year 2	<p><u>Construction</u> Packaging – design, make and evaluate a package for an Admiral of the Sea medal</p> <p>- model ideas through exploring materials, making templates and mock-ups - use a net to construct a container or package - learn how to make the model stronger, stiffer and more stable</p>	<p><u>Construction</u> Recycling - design, make and evaluate a recyclable plant holder</p> <p>- select materials that will provide a strong, robust container - select materials to join plastic, fabric, wood and card securely - use different materials and finishes to decorate the packaging</p>	<p><u>Textiles</u> Beside the seaside - design, make and evaluate a puppet</p> <p>- use a range of stitches - practise sewing two small pieces of fabric together, understanding seam allowances - consider whether fabrics are suitable for the chosen purpose and user - select materials to join plastic, fabric, wood and card securely</p>

	- measure, mark out and cut out materials with growing accuracy, using a ruler and scissors	<u>Mechanisms</u> Design, make and evaluate a Moving Storybook or Easter Card with moving parts - model ideas through exploring materials, making templates and mock-ups - measure, mark out and cut out materials with growing accuracy, using a ruler and scissors - learn how to assemble and join different materials together - explore a range of decorative finishing techniques e.g. appliqué, embroidery, fabric pens/paints, printing.	- learn how to assemble and join different materials together - explore a range of decorative finishing techniques e.g. appliqué, embroidery, fabric pens/paints, printing. <u>Cooking and nutrition: design, make and evaluate a pizza</u> - use simple utensils and practise skills such as washing, grating, peeling, slicing, squeezing, pouring, stirring - prepare simple dishes safely and hygienically
Year 3	<u>Textiles</u> Design, and make an Egyptian collar. Describe the purpose of our products, with support and talk about the design features of our products that will appeal to intended users, using word banks to help us. Show the order of working in plans using models, pictures and words. Investigate that materials have both functional properties and aesthetic qualities. Use templates, measure, mark out, cut and shape materials and components with some accuracy. Assemble, join and apply a range of finishing techniques, including those from art and design, with some accuracy. <i>Find out about inventors, designers, engineers, chefs and manufacturers who have helped shape the world.</i> Designers: Necklaces date back to Stone Age/Bracelets – Ancient Egyptians, earrings date back to the Bronze Age, Charles Lewis Tiffany – Tiffany’s jewellery, Daniel Swarovski – Swarovski jewellery.	<u>Cooking and nutrition</u> Design, make and evaluate Bronze Age/Iron Age bread comparing it with bread today. Begin to research how food is grown. Taste testing of different types of bread: textures, colours, flavours. Practise food preparation and cooking techniques by making a food product using an existing recipe. Learn how to use a range of techniques such as slicing, mixing, kneading and baking. Explain that food and drink are needed to provide energy for the body. Understand and explain the principles of a healthy and varied diet. Compare bread recipes from Bronze Age and Iron Age to present day recipes, explaining similarities and differences.	<u>Construction</u> Design, make and evaluate a moving toy comparing it to toys from the Stone Age and Iron Age. Measure, mark out and cut out materials, such as card, with accuracy, using a ruler and scissors. Measure, mark out and cut materials using centimetres. Select materials to join plastic, fabric, wood and card securely, from a given list. Alter and adapt materials to make them stronger. Investigate and analyse a range of products to consider how well they have been designed and made. Recognise that designs must meet a range of needs. Make the finished product neat and tidy. Find out about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products functional products. The invention of Lego
Year 4	<u>Construction</u> Design, make and evaluate a circuit.	<u>Cooking and nutrition</u> Design, make and evaluate a simple French Meal.	<u>Construction</u> Rainforest Shelters: design, make and evaluate a shelter.

	<p>Develop a design brief within a context which is authentic and meaningful. eg light up game or Christmas Card. Use a simple computer control program to physically control output devices e.g. bulbs and buzzers. Make a variety of switches by using simple classroom materials and test them in a simple series circuit. Program a computer to monitor and control our product.</p> <p><i>Find out about inventors, designers, engineers, chefs and manufacturers who have helped shape the world.</i> Inventors: J. P. Knight – invented the traffic light, Garrett Morgan – designed the three position traffic light signal.</p>	<p>Prepare and cook a savoury dish safely and hygienically. Use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading. Understand and apply the principles of a healthy and varied diet Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Evaluate food by taste, texture, flavour etc.</p> <p><i>Find out about inventors, designers, engineers, chefs and manufacturers who have helped shape the world.</i> Roman Roads; Engineer: John Loudon McAdam – first modern road.</p>	<p>Generate, develop and communicate our ideas through discussion, annotated sketches, prototypes and computer-aided design. Select from and use a wider range of tools and equipment to perform practical tasks: cutting, shaping, joining and finishing accurately. Measure using millimetres, mark out and cut out materials with growing accuracy, using a ruler and scissors. Assemble and select materials to join fabric, wood and card securely. Alter and adapt materials to make them stronger and apply a range of finishing techniques.</p>
<p>Year 5</p>	<p><u>Cooking and nutrition</u> Baking – Victorian Sandwich Design, make and evaluate an afternoon tea</p> <p>Explain that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Begin to learn that seasons may affect the food available. Understand that the different seasons can affect which food is grown. Find out how different food and drink contain different substances – nutrients, water and fibre – that are needed for health. Begin to research how food is processed into ingredients that can be eaten or used in cooking. Understand that a recipe can be adapted by adding or substituting one or more ingredients. Formulate step-by-step plans as a guide to making. Prepare and cook a variety of predominantly savoury dishes safely and</p>	<p><u>Construction</u> Design, make and evaluate a moving toy using cams, pulleys or gears</p> <p>Carry out research, using surveys, interviews, questionnaires and web-based resources. Explore how innovative products are. Analyse how well products meet user needs and wants. Investigate why materials have been chosen and what methods of construction have been used. Begin to recognise the design features of our products that will appeal to intended users in our writing. Model our ideas using prototypes and pattern pieces, with support. Use annotated sketches, cross-sectional drawings, exploded diagrams and computer aided design to develop and communicate our ideas. Make design decisions that take account of the availability of resources. Describe how mechanical systems such as cams or pulleys or gears create movement. Reinforce and strengthen a 3D framework.</p>	<p><u>Textiles</u> Design, make and evaluate a 3D textile product from a pattern, using decorative finishing and cross – stitch.</p> <p>Begin to recognise the design features of our products that will appeal to intended users in our writing. With support, develop a simple design specification to guide our thinking and model our ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate our ideas using the correct technical vocabulary. Investigate how much products cost to make. Explain why specific fabrics are suitable for the chosen purpose and user. Understand that a 3D textiles product can be made from a combination of fabric shapes and use a textile product we have taken apart to create a paper pattern using 2-D shapes. Measure using millimetres, mark out, cut materials with increasing accuracy confidently use a range of stitching techniques.</p>

	<p>hygienically including, where appropriate, the use of a heat source. Investigate how much products cost to make. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Begin to explore how recipes can be adapted to change the appearance, taste, texture and aroma.</p> <p>Find out about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products functional products. Create a Victorian Invention Timeline including: Bicycles, tarmac, concrete, sewing machine, typewriter, telephone, electric lighting, gramophone, wireless radio</p> <p>George Stevenson, John Boyd-Dunlop, Charles Babbage, Thomas Edison</p>	<p>Explain our choice of tools and equipment and measure, mark out, cut and shape materials and components with increasing accuracy. Demonstrate resourcefulness when tackling practical problems. Critically evaluate the quality of the design, manufacture and fitness for purpose of our products as they design and make - evaluate our ideas and products against our original design specification.</p> <p>Find out about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products functional products. Inventions – Spinning Jenny – James Hargreaves Ruth Handler - toy company Mattel (Barbie)</p>	<p>Accurately sew two small pieces of fabric together, demonstrating the use of, and need for, seam allowances. Confidently use a range of decorative finishing techniques e.g. appliqué, embroidery, fabric pens/paints, printing.</p> <p>Find out about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products functional products. Designers -</p>
<p>Year 6</p>	<p>Cooking and nutrition – Ancient Greeks Design, make and evaluate Greek Yoghurt</p> <p>Explain that food is grown, reared and caught in the UK, Europe and the wider world. Explain why seasons may affect the food available. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Find out how different food and drink contain different substances – nutrients, water and fibre – that are needed for health. Explain how food is processed into ingredients that can be eaten or used in cooking. Investigate how much products cost to make. Prepare and cook a variety of predominantly savoury dishes safely and</p>	<p>Construction – Design, make and evaluate using electrical systems and control output devices</p> <p>Find a fault in a simple circuit and correct it and explain how to avoid making short circuits. Use a computer control program with an interface box or standalone control box to physically control output devices e.g. bulbs and buzzers. Make and use a variety circuits to physically control output devices. Test and use switches that control output devices. Develop a design brief using battery-powered products, understanding the purpose and consumer. Analyse how well products work to achieve their purposes and meet user needs and wants. Use learning from science and maths to help design and make products that work. Explain how more complex electrical circuits and components can be used to create products.</p>	<p>Construction - Explorers and Adventurers Kensuke's Kingdom Design, make and evaluate a large scale shelter for a purpose.</p> <p>Identify the needs, wants, preferences and values of particular individuals and groups. Develop a simple design specification to guide our thinking. Select and use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate our ideas. Explore how sustainable the materials in products are. Select tools and equipment and explain our choices in relation to the skills and techniques we will be using. Reinforce and strengthen a 3D framework. Accurately assemble, join and combine materials and components. Consider the views of others, including intended users, to improve our work.</p>

	<p>hygienically including the use of a heat source.</p> <p>Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Explore how recipes can be adapted to change the appearance, taste, texture and aroma.</p> <p>Understand that a recipe can be adapted by adding or substituting one or more ingredients.</p>	<p>Links to WW2 – sending signals, air raid sirens/messages/Morse code?</p> <p>Continue to learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products: The Wright Brothers, Montgolfier, Giffard</p> <p>WW2 links: Colossus, the first computer at Bletchley Park. Invented as a way to speed up cracking the codes</p>	<p>Critically evaluate the quality of the design, manufacture and fitness for purpose of our products as they design and make.</p>
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