

Design Technology – Substantive Knowledge Progression Map

EYFS Statutory Educational Programme: Expressive Arts and Design:	National Curriculum Aims:
<p>The development of children’s artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials.</p> <p>The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts.</p> <p>The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.</p>	<p>DESIGN</p> <ul style="list-style-type: none"> Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. <p>MAKE</p> <ul style="list-style-type: none"> Design and make high-quality prototypes and products for a wide range of users. <p>EVALUATE</p> <ul style="list-style-type: none"> Critique, evaluate and test their ideas and products and the work of others <p>TECHNICAL KNOWLEDGE</p> <ul style="list-style-type: none"> Build and apply a repertoire of knowledge, understanding and skills. <p>COOKING AND NUTRITION</p> <ul style="list-style-type: none"> Understand and apply the principles of nutrition and learn how to cook.

<u>Designing</u>	<u>EYFS</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Understanding contexts, users and purposes.	<p>Explain what they are making and which materials they are using.</p> <p>Understand the properties of materials from a limited range.</p> <p>Understand and name different tools to work the materials e.g scissors for</p>	<p>Begin to understand the development of existing products: Explain what they are for, how they work, what materials have been used.</p> <p>Understand how to identify a target group for what they intend to design and make.</p>	<p>Begin to develop their design ideas through discussion, observation, drawing and modelling.</p> <p>Understand the purpose for what they intend to design and make.</p> <p>Understand how to identify a target group for</p>	<p>Know to make drawings with labels when designing.</p> <p>Start to order the main stages of making a product.</p> <p>Understand the purpose and establish criteria for a successful product.</p>	<p>Confidently make labelled drawings from different views showing specific features.</p> <p>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</p>

Design Technology – Substantive Knowledge Progression Map

	<p>paper and know how to use them.</p> <p>Select and name the tools needed to work the materials e.g. scissors for paper.</p> <p>Describe simple models or drawings of ideas and intentions.</p>	<p>Make templates and mock ups</p> <p>Explain how they intend to fix simple materials.</p>	<p>what they intend to design and make based on a design criteria.</p> <p>Begin to explain why they chose a certain material</p>	<p>Understand how well products have been designed, made, what materials have been used and the construction technique.</p> <p>Learn about inventors, designers, engineers, chefs and manufacturers.</p> <p>Start to understand whether products can be recycled or reused.</p> <p>Put together a step-by-step plan which shows the order and also what equipment and tools they need</p>	
Making	EYFS	Year 1	Year 2	Year 3	Year 4
Working with tools, equipment, materials and components to make quality products	<p>Start to build structures, and understand how to join components together.</p> <p>Understand how simple hinges, wheels and axles work.</p> <p>Begin to use scissors to cut straight and curved edges and hole pinches to punch holes.</p> <p>Use technical taught vocabulary when appropriate.</p>	<p>Begin to make their design using appropriate techniques.</p> <p>Understand how mechanisms [for example, levers, sliders, wheels and axles] work.</p> <p>With help measure, mark out, cut and shape a range of materials.</p> <p>Identify and talk about products which use electricity to make them work.</p>	<p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Attach features to a vehicle (e.g. an axel and wheels)</p> <p>With help measure, cut and score with some accuracy.</p> <p>Create working circuits to light a bulb or work a buzzer.</p>	<p>Start to understand that mechanical and electrical systems have an input, process and output.</p> <p>Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement.</p> <p>Work accurately to make cuts and holes – e.g. to measure and then use equipment to cut.</p>	<p>Understand how to reinforce and strengthen a 3D framework.</p> <p>Know how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</p> <p>Understand how more</p>

Design Technology – Substantive Knowledge Progression Map

	<p>Understand how to use and hold basic tools such as a saw or hammer.</p> <p>Understand how to use adhesives to join material.</p>	<p>Understand how to use tools safely including scissors and a hole punch.</p> <p>Understand how to join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</p> <p>Understand ways to make a product move.</p> <p>Begin to understand some simple finishing techniques.</p>	<p>Learn to use a range of hand tools safely and appropriately</p> <p>Be able to join things (materials/ components) together in different ways</p> <p>Join fabric using a running stitch, glue and tape</p> <p>Learn how to cut, shape and join fabric to make a simple product.</p> <p>Learn basic sewing techniques.</p> <p>Understand how different finishing techniques can be more appropriate according to design.</p>	<p>Know how simple electrical circuits and components can be used to create functional products.</p> <p>Start to work safely and accurately with a range of simple tools.</p> <p>Start to measure, tape or pin, cut and join fabric with some accuracy.</p> <p>Learn how to use all equipment safely</p> <p>.Join fabrics using a running stitch and cross stitch.</p>	<p>complex electrical circuits and components can be used to create functional products.</p> <p>Learn how to program a computer to monitor changes in the environment and control their products.</p> <p>Now sew using a range of different stitches, to weave and knit.</p>
Food and Nutrition	EYFS	Year 1	Year 2	Year 3	Year 4
	<p>Begin to develop a food vocabulary using taste, smell, texture and feel.</p> <p>Learn how to stir, spread, knead and shape a range of food and ingredients.</p> <p>Begin to understand how to work safely and hygienically.</p>	<p>Begin to understand that all food comes from plants or animals.</p> <p>Explore common food sources (e.g. from food or animals)</p> <p>Start to understand how to name and sort foods into the five groups in</p>	<p>Understand that all food comes from plants or animals.</p> <p>Develop understanding of where different foods come from (e.g. foods which are farmed, grown elsewhere (e.g. home) or caught) and also food</p>	<p>Start to know 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.</p>	<p>Understand 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.</p>

Design Technology – Substantive Knowledge Progression Map

	<p>Start to understand the need for a variety of foods in a diet.</p> <p>Learn how to measure and weigh food items, non-statutory measures e.g. spoons, cups.</p>	<p>(e.g. could use the 'The Eat well plate')</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day</p> <p>Know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Know how to use techniques such as cutting, peeling and grating.</p> <p>Measure and weigh food items using non-standard measures (e.g. spoons and cups)</p>	<p>from native to different countries.</p> <p>Understand how to name and sort foods into the five groups.</p> <p>Recognise the need for a variety of food in a diet</p> <p>Know how to make dishes from other countries</p>	<p>Understand how to prepare and cook a variety of dishes including experience of using a heat source.</p> <p>Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know how a healthy diet is made up from a variety and balance of different food and drink</p> <p>Begin to know that to be active and healthy, food and drink are needed to provide energy for the body (and begin to distinguish healthy high energy foods)</p> <p>Be able to identify foods which come from the UK and other countries in the world.</p>	<p>Understand how to prepare and cook a variety of predominantly savoury dishes including experience of using a heat source.</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that to be active and healthy, food and drink are needed to provide energy for the body and identify healthy high energy foods)</p> <p>Understand what to do to be hygienic and safe</p> <p>Become familiar with some of the processes that foods go through to preserve them/make them more appealing.</p>
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Skills Map – Design & Technology				
Year 1				
	Autumn	Spring	Summer	
Cycle 1	Mechanisms: Wheels and Axels	Textiles: Puppets	Structures: Windmills	
Cycle 2	Mechanisms: Fairground Wheel	Structure: Baby Bears Chair	Food: Balanced Diet	
	Technical Knowledge	Design	Make	Evaluate
Objectives	<ul style="list-style-type: none"> • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products • Cooking & Nutrition: Use the basic principles of a healthy and varied diet to prepare dishes • Cooking & Nutrition: Understand where food comes from 	<ul style="list-style-type: none"> • Design purposeful, functional, appealing products based on design criteria. • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. 		

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S k i l l s				
Skills Map – Design & Technology				
Year 2				
	Autumn		Spring	Summer
Cycle 1	Mechanisms: Wheels and Axels		Textiles: Puppets	Structures: Windmills
Cycle 2	Mechanisms: Fairground Wheel		Structures: Baby Bears Chair	Food: Balanced Diet
	Technical Knowledge	Design	Make	Evaluate

Design Technology – Substantive Knowledge Progression Map

O b j e c t i v e s				
S k i l l s				

Skills Map – Design & Technology			
Year 3			
	Autumn	Spring	Summer
Cycle 1	Textiles: Cushions	Structure: Pavilions	Electrical Systems: Torches
Cycle 2	Textiles: Fastenings	Structure: Constructing a Castle	Electrical Systems: Static

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	Technical Knowledge	Design	Make	Evaluate
Objectives				
Skills				

Skills Map – Design & Technology			
Year 4			
	Autumn	Spring	Summer
Cycle 1	Textiles: Cushions	Structure: Pavilions	Electrical Systems: Torches
Cycle 2	Textiles: Fastenings	Structure: Constructing a Castle	Electrical Systems: Static

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	Technical Knowledge	Design	Make	Evaluate
Objectives				
Skills				

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DESIGN TECHNOLOGY: VOCABULARY MAP								
	Design and Develop	Making		Product	Evaluation			
EYFS	<ul style="list-style-type: none"> Plan Draw Ideas Design 	<ul style="list-style-type: none"> Make Build Combine 	<ul style="list-style-type: none"> Join Shape Tools 	<ul style="list-style-type: none"> Complete Product Final 	<ul style="list-style-type: none"> Change Like Dislike Next time 	<ul style="list-style-type: none"> Better Worse Different Instead 		
DESIGN TECHNOLOGY: VOCABULARY MAP								
	Design	Technical Knowledge & Making		Cooking and Nutrition	Evaluate			
KS1	<ul style="list-style-type: none"> Plan Prepare Design Materials Ideas Use Model Development Market Research Survey Template 	<ul style="list-style-type: none"> Fast Slow Faster Slower Up Down Turn Wind up Design Draw Sketch Tools 	<ul style="list-style-type: none"> Fix Glue Attach Features Brick Wood Stone Cloth Metal Foam Felt Paper 	<ul style="list-style-type: none"> Tissue Newspaper Cardboard String Wool Clay Scissors Glue Tape Cut Stick Decorate 	<ul style="list-style-type: none"> Healthy Unhealthy Source Fruit Vegetables Clean Safe Dirty 	<ul style="list-style-type: none"> Unsafe Amount Ingredients Recipe Weight Nutrients Vegetarian Dietary requirements 	<ul style="list-style-type: none"> Change Improve Prefer Useful Unsuccessful Future Progress modify 	<ul style="list-style-type: none"> Alter Adapt Original Finished article Evaluate Graphics
KS2	<ul style="list-style-type: none"> Plan Organise Prototype Initial ideas Criteria Diagrams Labels Annotate Brief 	<ul style="list-style-type: none"> Product Consumer Customer Target audience Purpose Application Constraints Client 	<ul style="list-style-type: none"> Materials Mould Liquid Solid Form Shape Adhesive Lattice 	<ul style="list-style-type: none"> Mass-produce Hand-made Packaging Presentation Machine made Dimensions Durable 	<ul style="list-style-type: none"> Healthy Unhealthy Balanced Vitamins Disease Nutrition Healthy eating Hygiene Diet 	<ul style="list-style-type: none"> Cross contamination Grams Storage Presentation Taste Texture Flavour Disinfect Bacteria 	<ul style="list-style-type: none"> Assess Edit Improve Alter Outcome Develop Test Analyse 	<ul style="list-style-type: none"> Effective Fit for purpose Design criteria Alternatives Models Quality Function Functionality

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