

# Design & Technology - Progression Map

## **EYFS - Expressive Arts & Design**

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. 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. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

## **KS1 - Breadth of Study**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment.

When designing and making, pupils should be taught to:

### **Design**

- design purposeful, functional, appealing products for themselves and other users based on design criteria.
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.

### **Make**

- select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping, joining and finishing.
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

### **Evaluate**

- explore and evaluate a range of existing products.
- evaluate their ideas and products against design criteria.

### **Technical knowledge**

- build structures, exploring how they can be made stronger, stiffer and more stable.
- explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.

### **Cooking and nutrition**

- use the basic principles of a healthy and varied diet to prepare dishes.
- understand where food comes from.

## **KS2 - Breadth of Study**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.

When designing and making, pupils should be taught to:

### **Design**

- 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.
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

### **Make**

- select from and use a wider range of tools and equipment to perform practical tasks, such as cutting, shaping, joining and finishing, accurately.
- 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.

### **Evaluate**





- investigate and analyse a range of existing products.
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- understand how key events and individuals in design and technology have helped shape the world

### **Technical knowledge**

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages.
- understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors.
- apply their understanding of computing to programme, monitor and control their products.

### **Cooking and nutrition**

- understand and apply the principles of a healthy and varied diet.
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

	Block Topic	<u>Skill Designing:</u> 	<u>Skill Making:</u> 	<u>Skill Evaluate:</u> 	<u>Technical Knowledge</u> 
E Y F S					
Y e a r 1	<p>Design a healthy lunch.</p> <p>To be create a Fruit salad/kebab/smoothie</p> <p><b>Food</b></p>	<p>I have my own ideas</p> <p>I can explain what my product is for and it will work</p> <p>I can use pictures and words to plan and begin to us models</p> <p>I can design a product myself following design criteria</p> <p>I can research similar existing products.</p>	<p>I can explain what I am making and why</p> <p>I can consider what I need to do next</p> <p>I can select tools/equipment to cut, shape and explain my choices</p> <p>I can mark out and measure with support</p> <p>I can try to use finishing techniques to make my product look good.</p> <p>I can work in a safe and hygienic place.</p>	<p>I can say what I like and dislike about existing products (e.g. smoothies, fruits, vegetables, fruit lollies etc.)</p> <p>I can say what I like about my finished product.</p> <p>I can say what I like and dislike about someone else's product.</p> <p>I begin to talk about what I could improve next time</p>	<p>I can describe texture</p> <p>I an wash and hands and surfaces</p> <p>I can find interesting ways to decorate food</p> <p>I can describe the difference of some food</p> <p>I can discuss how fruit and vegetables are healthy</p> <p>I can cut, peel and grate safely with support.</p>
	<p>Homes and Houses: Interior and Exterior (moving pictures)</p> <p>To be able to recreate scenes from a traditional tale.</p> <p><b>Structures and Mechanisms</b></p>		<p>I can find ways to make my structures more stable so they are freestanding. e.g. The use of a base, overlapping joints.</p> <p>I can cut along straight lines, curved lines and shapes marked out by a template.</p> <p>I can use tape and glue to create temporary joins, fixed joins, &amp; moving joins.</p>	<p>I can say what they like and dislike about existing products.</p> <p>I can say how well my designs and product met the given design criteria.</p>	<p>I can build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>I can explore and use mechanisms [for example, levers, sliders, wheels and axles], in my products.</p>

			I can roll, fold, tear and cut paper and card.		
Y e a r 2	<b>Moving Vehicles</b> To explore modern and 17 <sup>th</sup> century fire engines and their features, before exploring, designing, creating and evaluating their own model fire engine using wheels, axles and chassis. (purpose moving vehicle for children to play) <b>Structures and Materials</b>	I have own ideas and plan what to do next I can explain what I want to do and describe how I may do it I can explain the purpose of the product, how it will work and how it will be suitable I can describe design using pictures, words, models, diagrams I can design and others can follow the criteria I can choose the best material and tools and explain my choices I can use knowledge of existing products for my ideas.	I can explain what I am making and why it fits the purpose I can make suggestion what to do next I can join materials and components in different ways I can measure, mark out and shape materials with support I can describe which tools and need and why I can use finishing techniques to make my product look good. I can work safely.	I can say what I like and do not like about existing products. I can say how well my designs and product met the given design criteria I can talk about what I would do differently next time.	I begin to understand how to use wheels and axles I can measure materials I can describe different materials I can use joining, rolling or folding to make it stronger.
	<b>Florence Nightingale - 'Lady of the Lamp</b> To be able to recreate Florence Nightingale's lamp. <b>Textiles and Structures</b>				I can measure materials I can join materials in different ways I can use joining, rolling or folding to make it stronger I can measure textiles I can join textiles and explain how I did it. I understand that a 3 D textile structure can be made from two identical shapes.
Y e a r 3	<b>Stone Age Shelters</b> To be able to create a stone age shelter as part of a class settlement display. <b>Structures and Materials</b>	I can begin to research other's needs I can show how the design meets a range of criteria I can describe the purpose of the product I can follow a given design criteria I can create a plan which shows order, equipment and tools I can describe a design and accurately label with words	I can select suitable tools and explain my choices and begin to use them accurately I can select materials which are fit for purpose I can work through a plan in order I can consider how good a product will be I begin to measure, mark out and cut and shape materials and components with accuracy	I can look at design criteria while designing and making I can use design criteria to evaluate product I can say what I would change to make a design better I begin to evaluate existing products I begin to understand by whom, when and where products were designed I started to learn about inventors, designers of	I can use appropriate materials I can work accurately making cuts and holes I begin to make structures stronger and stiffer.
	<b>Moving Monsters</b> To be able to create a moving character from your favourite book. <b>Mechanisms</b>				To use simple lever and linkage To start using pneumatics to create movement To begin and try new different ideas

		I can make my own design decision I can make a prototype	I begin to apply a range of finishing techniques.	ground breaking products.	To discuss alteration to the product designed.
Year 4	<b>Roman Purse</b> To create a Roman coin purse from recycled materials <b>Textiles</b>	I can use research for design ideas I can show that a design meets a range of requirements and it is for a purpose I can begin to create my own design criteria I have at least one idea about how to create product and suggest ideas for improvements I can produce a plan and explain it to others I can say how realistic a plan is	I can select appropriate tools with a good level of precision I can select appropriate materials, fit for purpose and explain my choices I can work through a plan in order I can realise if a product is going to be good I can measure, mark out, cut and shape materials with improving accuracy I can apply a range of finishing teachings with improved accuracy.	I can refer to a design criteria while making and design I can use criteria to evaluate a product I begin to explain how to improve an original design I can evaluate existing products and explain how they have been made fit for purpose. I discuss by whom, when and how products have been designed I can research whether a product can be recycled or reused.	I can think about the user when choosing a material I can think about how to make product strong - stitches I can begin to devise a template I can explain how to join things in different ways I understand how a simple fabric shape can be used to make a 3 D project.
	<b>Anglo Saxon Shields</b> To be able to make a shield. (strong to be held in battle) <b>Structures and Materials</b>	I can make and explain my decision considering availability of resources			I can apply my understanding of how to strengthen, stiffen and reinforce a more intricate structure. I can carefully measure to avoid mistakes I can continue to work on a product even if the original didn't work