



Pensford Primary School



Design & Technology Curriculum

Our Intent for Design and Technology at Pensford Primary School

In teaching DT, we want children to develop their creativity while giving a meaningful purpose to their use of scientific and technological knowledge. We want them to enjoy the design process and to have ownership of the process of designing, building and evaluating a range of products.

Our physical education teaching supports the Four Pillars of the Pensford Curriculum as follows:

Wellbeing –Our lessons enhance children’s enjoyment of learning by being practical and collaborative. In food technology topics, we build children’s knowledge of food groups and healthy eating.

Language – Children are expected to communicate their thinking about designs that they make and models that they investigate. This will include good opportunities to use oral language, and to present ideas to a class audience, both individually and as part of a collaborative group.

Reasoning –DT gives children excellent opportunities to reason about why and how things work. It also allows children to experiment with solutions to a practical problem, and to take a carefully-considered approach to evaluating their designs, and those of others.

Technology –There are obvious ways in which DT supports this pillar of our curriculum. Whereas ‘technology’ is often seen as relating to computers and programming, children develop their wider understanding of this term as they learn about a range of practical technologies such as mechanical and electrical systems cooking techniques, aesthetic design and the use of different materials and approaches for particular purposes.

Design & Technology Curriculum Overview

Key	Art topic (DT not explicitly taught)	DT Design and Make Projects, including Evaluation and Technical Knowledge			Cooking & Nutrition
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1 & Summer 2
EYFS	Teaching of Design and Technology is not discreet in the Early Years but children will learn about 'Expressive arts and design: Exploring and using media and materials (including using different media combined to create a new effect; using simple tools and techniques – to shape, assembly and join; selecting appropriate resources and adapting work as necessary).				
KS1 Year A	<p>Who's Coming to Tea?</p> <p><i>Make a range of healthy, savoury sandwiches for a tea party</i></p> <p>Food tech knowledge: use the basic principles of a healthy and varied diet to prepare dishes</p>	<p>Fire!</p> <p><i>Design, make and evaluate a Tudor House</i></p> <p>Technical knowledge: build structures, exploring how they can be made stronger, stiffer and more stable</p>	How do I get to...?	Where are all the wild things?	Once upon a time
KS1 Year B	<p>Our Amazing World</p> <p><i>Design a world foods buffet, incorporating food from each continent (except Antarctica!)</i></p> <p>Food tech knowledge: know where food comes from</p>	<p>Toy Story</p> <p><i>Design, make and evaluate a teddy</i></p> <p>Technical knowledge: Sewing (running stitch)</p>	We Are Artists	Maps and Routes	Weather and Seaside
LKS2 Year A	North, East, South, West	<p>Rise of the Robots</p> <p><i>Design, make and evaluate an electronic 'steady hand' buzzer game</i></p> <p>Technical knowledge: understand and use electrical systems in products</p>	Extreme Survival	<p>Dig for Victory</p> <p><i>Develop sewing skills to prepare for UKS2 Dragon's Den topic during study of the work of Lucy Levenson</i></p>	<p>Escape from Pompeii</p> <p><i>Design, make and evaluate a statue for a trail in the school grounds</i></p> <p>Technical knowledge: apply understanding of how to strengthen, stiffen and reinforce more complex structures</p>

LKS2 Year B	<p>Going Global</p> <p><i>Design</i> a world foods buffet, incorporating food from each continent (except Antarctica!)</p> <p>Food tech knowledge: know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<p>Raiders and Traders</p>	<p>Ancient Egypt</p>	<p>Rainforest</p>	<p>Down in the Valley</p> <p><i>Design</i> and make a savoury dish using locally-sourced in-season foods from the Chew Valley</p> <p>Food tech knowledge: Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
UKS2 Year A	<p>Chocolate</p>	<p>Why aorta keep fit</p> <p><i>Design</i> and make a savoury dish that is good for the heart</p> <p>Food tech knowledge: understand and apply the principles of a healthy and varied diet</p>	<p>Marvellous Maya</p>	<p>Were we a fish?</p>	<p>Dragons' Den</p> <p><i>Design, make and evaluate</i> an object using textiles and sewing skills, eg a bag, hat or slipper that could be sold</p> <p>Technical knowledge: sewing (running stitch, backstitch)</p>
UKS2 Year B	<p>What's out there?</p>	<p>Who Let the Gods Out?</p> <p><i>Design, make and evaluate</i> a catapult</p> <p>Technical knowledge: understand and use mechanical systems in products</p>	<p>Is it me or is it hot in here?</p>	<p>Victorious Victorians</p> <p><i>Design</i> and make a savoury dish using ingredients that were available to Victorians</p> <p>Food tech knowledge: prepare and cook a variety of savoury dishes using a range of cooking techniques</p>	<p>How steady is your hand?</p> <p><i>Design, make and evaluate</i> a fairground ride operated using an electric motor and/or lights; use a BBC Micro Bit to control the ride.</p> <p>Technical knowledge: understand and use electrical systems in products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>apply understanding of computing to program, monitor and control products</p>


Progression Matrix

	KS1		Lower KS2		Upper KS2	
	Year A	Year B	Year A	Year B	Year A	Year B
Designing	When designing a Tudor house, generate, develop, model and communicate ideas through talking drawing, and finding pictures of tudor houses using an iPad.	When designing a teddy, use a paper template for the shape of the felt animal.	When designing the buzzer game, use research to inform the design of an appealing product that is fit for purpose, aimed at children aged 7-9. generate, develop, model and communicate ideas through discussion, annotated sketches	When designing the statue, use cross-sectional diagrams and make a prototype out of Plasticine	When working with textiles, use pattern pieces.	When designing the catapult, use cross-sectional and exploded diagrams. When designing the fairground ride, use computer-aided design by building a 2D representation of the ride on Scratch.
Making	When making a Tudor house, select from and use a range of materials and components including wood and Modroc. Learn how to use a saw safely to cut sticks and lolly sticks.	When making a teddy, use textiles as well as additional materials such as buttons and sequins. Learn how to use a needle safely.	When making the buzzer game, select materials that do and do not conduct electricity for the relevant parts of the game. Learn how to use pliers and wire cutters safely.	When making the statue, select from and use a wider range of materials, according to their functional properties and aesthetic qualities Learn how to use pliers, saws and other tools such as modelling tools and sandpaper as required.	When making the product, select from and use a wider range of textiles than in KS1, where felt was used, according to their functional properties and aesthetic qualities	When making the catapult, use saws and learn how to use a glue gun safely. When making the fairground ride, use construction materials such as Lego and Meccano.
Evaluating	Evaluate the Tudor house against design criteria agreed as a class, with input from the teacher.	Evaluate a range of teddies' aesthetic qualities in order to inform the design of children's own teddies.	Investigate a range of existing buzzer toys to inform the design. Examine how one works.	Evaluate the statues against design criteria the children have come up with, with some support.	Understand the impact of designers such as Coco Chanel and Vivienne Westwood. Evaluate the textile products using design criteria the children have come up with.	Understand the impact of the invention of catapults around 400BC and how their design evolved, by looking at a range of designs from the Ancient Greek to Medieval period. With the fairground rides, evaluate their ideas and products against their own design criteria at the CAD stage, and consider the views of others to improve their work before making the final product.
Developing Technical knowledge	<i>build structures, exploring how they can be made stronger, stiffer and more stable</i>	<i>Sewing (running stitch)</i>	<i>apply understanding of how to strengthen, stiffen and reinforce more complex structures</i> <i>understand and use electrical systems in products</i>		<i>sewing (running stitch, backstitch)</i>	<i>understand and use mechanical systems in products</i> <i>apply understanding of computing to program, monitor and control products</i>
Cooking and nutrition	<i>use the basic principles of a healthy and varied diet to prepare dishes</i>	<i>know where food comes from</i>		<i>know where and how a variety of ingredients are grown, reared, caught and processed.</i> Understand seasonality	<i>understand and apply the principles of a healthy and varied diet</i>	<i>prepare and cook a variety of savoury dishes using a range of cooking techniques</i>

LKS2 Escape from Pompeii

Key Vocabulary	
Aesthetics	The way something looks – how beautiful is it?
Cross-section	A view from a particular angle (eg front/ side)
Criteria	Standards used for judging something
Criterion	One of several criteria is called a criterion
Prototype	A basic model – quicker to make- to help plan.
Sculpture	A 3-D model made for aesthetic purposes

POP Task Questions
What is a prototype? Did you achieve what you wanted with your sculpture? Explain.



Knowledge and skills the children will gain

Main activity: *Design, make and evaluate* a statue or sculpture for a trail in the school grounds or hall exhibition

Technical knowledge: apply understanding of how to strengthen, stiffen and reinforce more complex structures

Design:



- To understand and use cross-sectional diagrams
- To understand the purpose of a prototype

Make:

- To be able to select from and use a wider range of materials, according to their functional properties and aesthetic qualities
- To learn how to use modelling tools, including those for cutting and those for fixing/ attaching

Evaluate:

- To determine success criteria for a sculpture
- To be able to evaluate the sculptures against design criteria the children have come up with, with some support.

Images to support the learning	
	Children might choose a Roman theme and there could be a focus (eg on helmets/ armour) to help simplify the brief.
	Or a more general theme of 'rocks' could be used, to link with the science curriculum (eg for younger/ less confident children)

Four Pillars Links
<p>Wellbeing: This is a chance for children to engage in art appreciation when the sculptures are exhibited, and to reflect on how peaceful appreciation of aesthetics can support wellbeing.</p> <p>Language: As well as learning the new vocabulary listed, children will have good opportunity to use descriptive language to describe the intent and effect of the sculptures</p> <p>Reasoning: When planning how to ensure that the sculptures are strong enough to support themselves they can reason about different methods to use and which is most effective.</p> <p>Technology: Children's internet research skills will be useful when researching possible ideas for their sculptures.</p>