GREAT ECCLESTON COPP CHURCH OF ENGLAND PRIMARY SCHOOL

DESIGN TECHNOLOGY POLICY

"Let us love, not in word, but in truth and action." (1 John 3:18)

NOVEMBER 2023

Approved by GB: September 2023
Next review due: September 2024

In building solid foundations for every unique individual and putting God's love at the centre of all we do, our children learn to embrace our diverse world. We encourage our children to learn universally in order to understand our heritage and roots as a village, town, region and nation. Through strong community links, our children grow in compassion and understanding, promote justice and possess commitment and aspire to make a positive difference. We offer an ambitious curriculum that ignites curiosity along with high personal expectations that fosters resilience and which enables them to flourish. Our children are easily distinguished by the courage they show when making brave choices and understand the importance of becoming the very best versions of themselves.

INTENT: to inspire pupils to become resourceful, innovative and enterprising in designing and making products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants, values and our ever-changing world.
The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

At Copp we want:

- to develop imaginative thinking, enabling pupils to talk about what they like/dislike when designing and making;
- enable children to talk about how things work and to draw and model their ideas;
- encourage the selection of appropriate tools/techniques for making a product, whilst following safe procedures
- explore attitudes towards the world and how we live and work within it;
- develop an understanding/manufacture of technological processes, products and their contribution to society.

"Just because something doesn't do what you planned it to do doesn't mean it's useless." Thomas Edison

Design Technology terms explained

Function:	the purpose of something.
Product:	an article or substance that is manufactured or refined for sale.
Design:	the art or action of conceiving of/producing a plan or drawing of something before it is made.
Develop:	to progress/change an idea.
Template:	shaped piece of material used as a pattern for processes such as cutting, shaping or drilling.
Model:	three-dimensional representation of something, typically on a smaller scale than the original.
Material:	the matter from which a thing is or can be made.
Construct:	build or make something.
Tool:	a device or implement used to carry out a particular function.
Evaluate:	to assess the finished product and identify positives and negatives.
Mechanism:	to create a product with a system of parts working together in a machine.
Textiles:	to create a product from cloth.
Structure:	to create a product from several parts.
Food technology:	to create a product which can be eaten.

Scheme

The overview of the design and technology curriculum is planned by the design and technology subject leader in collaboration with the class teachers. The National Curriculum programmes of study are adhered to and a broad and balanced curriculum is ensured through the design of units which incorporate a range of skills and knowledge. A progressive programme is planned so that no subject matter is repeated, but skills are revisited throughout each key stage. The scheme has been revised in 2023 and will be evaluated and reviewed at the end of Summer term 2024.

Assessment

Skills and knowledge are assessed throughout each unit. This is done through observation, discussion with pupils, work scrutiny and an assessed task. Children are regularly encouraged to self and peer asses.

Roles and Responsibilities

The subject leader will actively support by encouraging staff, praising good practice and supporting staff development and in-service training. The subject leader plans and ensures delivery of the overview of the subject.

The class teacher will be responsible for the teaching of design technology as set out in this policy. In instances where design technology is taught during PPA time, the class teacher will liaise with the PPA provider to ensure that it is taught effectively.

Curriculum progression

	Reception	Year 1	Year 2
Textiles		Puppets -Join fabrics together using pins, staples or glue. -Design a puppet and use a template. -Join their two puppets' faces together as one. -Decorate a puppet to match their design.	Pouch -Sew a running stitch with regular-sized stitches and understand that both ends must be knotted. -Prepare and cut fabric to make a pouch from a template. -Use a running stitch to join the two pieces of fabric together. -Decorate their pouch using the materials provided.
Structures	Junk modelling -To explore and investigate the tools and materials in the junk modelling area. -To develop scissor skills. -To investigate cutting different materials. -To learn how to plan and select the correct resources needed to make a model. -To verbally plan and create a junk model. -To share a finished model and talk about the processes in its creation. -To explore different ways to temporarily join materials together.	Windmills -Follow design criteria to meet the needs of a user. -Make a stable structure. -Make functioning sails/blades that attach to the supporting structure. -Improve their windmill.	
Food	Soup -To explore fruits and vegetables and the differences between them. -To use adjectives to describe how fruits and vegetables look, feel, smell and taste. -To listen to and recall elements from the story 'The Best Pumpkin Soup.' -To explore a pumpkin and describe it using the five senses. -To design a fruit and vegetable soup recipe. -To practise cutting with a knife. -To learn how to use a knife safely.		Balanced diet/ wraps -Name the main food groups and identify foods that belong to each group. -Describe the taste, feel and smell of a given food. -Think of three different wrap ideas, considering flavour combinations. -Construct a wrap that meets the design brief and their plan.

	-To observe and help (where appropriate) with the use of tools to prepare ingredients.		
Mechanisms		Vehicles -Explain that wheels move because they are attached to an axle. -Recognise that wheels and axles are used in everyday life, not just in cars. -Identify and explain vehicle design flaws using the correct vocabulary. -Design a vehicle that includes functioning wheels, axles and axle holders. -Make a moving vehicle with working wheels and axles. -Explain what must be changed if there are any operational issues.	Moving monsters -Identify the correct terms for levers, linkages and pivots. -Analyse popular toys with the correct terminology. -Create functional linkages that produce the desired input and output motions. -Design monsters suitable for children, which satisfy most of the design criteria. -Evaluate their two designs against the design criteria, using this information and the feedback of their peers to choose their best design. -Select and assemble materials to create their planned monster features. -Assemble the monster to their linkages without affecting their functionality.

	Year 3	Year 4	Year 5	Year 6
Textiles		Book sleeve - Identify the features, benefits and disadvantages of a range of fastening types. -Write design criteria and design a sleeve that satisfies the criteria. -Make a paper template for their book sleeve. -Assemble their case using any stitch they are comfortable with.		Waistcoat -Consider a range of factors in their design criteria and use this to create a waistcoat design. -Use a template to mark and cut out a design. -Use a running stitch to join fabric to make a functional waistcoat. -Attach a secure fastening, as well as decorative objects. -Evaluate their final product.
Structures	Castles -Draw and label a simple castle that includes the most common features. -Recognise that a castle is made up of multiple 3D shapes. -Design a castle with key features which satisfy a given purpose. -Score or cut along lines on the net of a 2D shape.		Truss bridge -Identify stronger and weaker shapes. -Recognise that supporting shapes can help increase the strength of a bridge, allowing it to hold more weight. -Identify beam, arch and truss bridges and describe their differences. -Use triangles to create simple truss bridges that support a load (weight).	

	-Use glue to securely assemble geometric shapes. -Utilise skills to build a complex structure from simple geometric shapes. -Evaluate their work by answering simple questions.		-Cut beams to the correct size, using a cutting mat. -Smooth down any rough cut edges with sandpaper. -Follow each stage of the truss bridge creation as instructed by their teacher. -Complete a bridge, with varying ranges of accuracy and finish, supported by the teacher. -Identify some areas for improvement, reinforcing their bridges as necessary.	
Food		Biscuits -Describe features of biscuits using taste, texture and appearance. -Follow a recipe with support. Use a budget to plan a recipe. -Adapt a recipe using additional ingredients.	Prepare a recipe -Describe the process of beef production. -Research a traditional recipe and make changes to it. -Add nutritional value to a recipe by selecting ingredients. -Prepare and cook a version of bolognese sauce.	Come dine with me -Find a suitable recipe for their course. -Record the relevant ingredients and equipment needed. -Follow a recipe, including using the correct quantities of each ingredient. -Write a recipe, explaining the process taken. -Explain where certain key foods come from before they appear on the supermarket shelf.
Mechanical systems	Pneumatic toys -Draw accurate diagrams with correct labels, arrows and explanations. -Correctly identify definitions for key terms. -Identify five appropriate design criteria. -Communicate two ideas using thumbnail sketches. -Communicate and develop one idea using an exploded diagram. -Select appropriate equipment and materials to build a working pneumatic system. -Assemble their pneumatic system within the housing to create the desired motion. -Create a finished pneumatic toy that fulfils the design brief.		Pop up book -Produce a suitable plan for each page of their book. -Produce the structure of the book. -Assemble the components necessary for all their structures/mechanisms. -Hide the mechanical elements with more layers using spacers where needed. -Use a range of mechanisms and structures to illustrate their story and make it interactive for the users. -Use appropriate materials and captions to illustrate the story.	
Electrical systems	Electric poster -Explain what 'information design' is and understand its	Torches -Identify electrical products and explain why they are useful.		Steady hand game -Explain simply what is meant by 'form' (the shape of a

	impact, considering what could happen if we had no signage, posters, or written communication in public places of interest. -Research and choose a specific Ancient Roman topic on which to base their initial poster ideas. -Complete design criteria. -Roughly sketch four initial poster ideas, indicating where a bulb will be located for each. -Review their initial ideas against the design criteria and peer feedback, developing a final design. -Assemble an electric poster, including a functional simple circuit with a bulb, following a demonstration. -Acknowledge, with a brief explanation, the need to mount the poster using corrugated card. -Test that the simple circuit works by adding a battery. -Evaluate their electric posters.	-Help to make a working switch. -Identify the features of a torch and how it works. -Describe what makes a torch successful. -Create suitable designs that fit the success criteria and their own design criteria. -Create a functioning torch with a switch according to their design criteria.		product) and 'function' (how a product works). -State what they like or dislike about an existing children's toy and why. -Learn about skills developed through play and apply this knowledge in a survey of one or more children's toys. -Identify the components of a steady hand game. -Design a steady hand game of their own according to their design criteria, using four different perspective drawings. -Create a secure base for their game, with neat edges, that relates to their design. -Make and test a functioning circuit and assemble it within a case.