



"Serve one another in love"

## **DT at Upton Heath Church of England Primary School**

### **DT Curriculum Statement**

Subject Lead: Hannah Williams

#### **Intent:**

All skills are informed by the Pathways to Write long term curriculum plan, which is directly linked to the national curriculum. All themes are sensitive to children's interests and are led by the children's curiosity for learning. The UHPS curriculum is centred and delivered around our intent of REACH: Relevant, Engaging, Aspirational, Creative and Holistic. We ensure that topics and skills are taught sequentially to ensure that children achieve the end of year expectations as well as maintaining links to previous learning.

In line with the national curriculum 2014, the DT curriculum at UHPS 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.

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The Design Technology Curriculum

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1	Autumn 1	Enquiry	<u>Cooking and Nutrition</u> Make a sandwich for the journey to the south pole.	Use the basic principles of a healthy and varied diet to prepare dishes	Can they explain what they are making? Which tools are they using? Can they cut food safely? Can they describe the texture of foods? Do they wash their hands and make sure that surfaces are clean? Can they think of interesting ways of decorating food they have made?
Year 2		Owls			
Year 3		One Little Drop			
Year 4		The Greatest Show			
Year 5		Rebel Girls	Look at events and individuals in DT who have shaped the world (barrels, boats)	Lady Elizabeth Wilbraham Alexander Graham Bell Steve Jobs Coco Chanel Vivienne Westwood Isambard Kingdom Brunel Elon Musk	Do they keep checking that their design is the best it can be? Do they check whether anything could be improved? Can they evaluate appearance and function against the original criteria?
Year 6		Conflict and Resolution	<u>Textiles</u> Make Do and Mend	textiles (sewing, patchwork)	Have they thought about how their product could be sold?

					Have they given considered thought about what would improve their product even more?
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Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1	Autumn 2	Enquiry	<u>Construction</u> Make a cage for Nibbles	Investigate how they can be made stronger, stiffer and more stable	Can they talk with others about how they want to construct their product? Can they select appropriate resources and tools for their building projects? Can they make simple plans before making objects, e.g. drawings, arranging pieces of construction before building?
Year 2		Owls	<u>Construction</u> Create a suitable 'fat ball' to feed an owl	Explore and evaluate a range of existing products and designs	Can they talk with others about how they want to construct their product? Can they select appropriate resources and tools for their building projects? Can they make simple plans before making objects, e.g. drawings, arranging pieces of

					construction before building?
Year 3		One Little Drop	<u>Mouldable Materials</u> Snow scene in a box	cutting, shaping, joining, finishing Select and use a range of materials	Do they select the most appropriate materials? Can they use a range of techniques to shape and mould? Do they use finishing techniques?
Year 4		The Greatest Show	<u>Stiff and Flexible Sheet Materials</u> Make a fairground game/mechanical toy	use gears, pulleys, levers, linkages	Can they measure carefully so as to make sure they have not made mistakes? How have they attempted to make their product strong?
Year 5		Rebel Girls			
Year 6		Conflict and Resolution			

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1	Spring 1	Museum Exhibition	<u>Use of Materials</u> Make an animal mask	Select tools: cutting, shaping, joining, finishing select materials	Can they make a structure/model using different materials? Is their work tidy? Can they make their model stronger if it needs to be?
Year 2		Events from the Past	<u>Mechanisms</u> <u>Use of Materials</u> Design functional machines and make through	select from and use a wide range of materials and components, including construction materials, textiles and ingredients,	Can they make a product, which moves? Can they cut materials using scissors? Can they describe the

			exploring a range of materials	according to their characteristics  Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	materials using different words? Can they say why they have chosen moving parts?
Year 3		Deep, Deep Down			
Year 4		Growing Up Global	<u>Mouldable Materials</u>  Build a volcano	generate ideas, develop, communicate, create sketches and exploded diagrams	Do they take time to consider how they could have made their idea better? Do they work at their product even though their original idea might not have worked?
Year 5		Heroes and Villains	<u>Cooking and Nutrition</u>  Design superhero energy food – granola or flapjack	Use the basic principles of a healthy and varied diet to prepare dishes	Can they describe what they do to be both hygienic and safe? How have they presented their product well?
Year 6		Evolution and Inheritance	<u>Cooking and Nutrition</u>  Design the perfect meal for a giant	Use the basic principles of a healthy and varied diet to prepare dishes	Can they describe what they do to be both hygienic and safe? How have they presented their product well?

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1		Museum Exhibition			
Year 2	Spring 2	Events from the Past	<u>Mechanisms</u>  Design and make own moving toy	select from and use a range of tools and equipment to perform practical tasks such as cutting, shaping,	Can they join materials together as part of a moving product? Can they add some kind of

				joining and finishing select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics explore and use mechanisms (levers, sliders, wheels and axles)	design to their product?
Year 3		Deep, Deep Down			
Year 4		Growing Up Global	<u>Mouldable Materials</u>  Create and test an escape raft – select and evaluate materials	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	Can they come up with at least one idea about how to create their product? Do they take account of the ideas of others when designing? Can they produce a plan and explain it to others? Can they suggest some improvements and say what was good and not so good about their original design? Do they take time to consider how they could have made their idea better? Do they work at their product even though their original

					idea might not have worked?
Year 5		Heroes and Villains	<u>Electrical and Mechanical Components</u>  programme own moving object – rocket, alien, spacecraft	understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors	Can they incorporate a switch into their product? Can they refine their product after testing it? Can they incorporate hydraulics and pneumatics?
Year 6		Evolution and Inheritance			

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1	Summer 1	Travel	<u>Developing, planning and communicating ideas</u>  <u>Use of materials</u>  Design, test, make rockets and boats	select from and use a range of tools and equipment to perform practical tasks (for example, 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	Whose rocket can travel the furthest? Can you get your boat to float? Can they think of some ideas of their own? Can they explain what they want to do? Can they use pictures and words to plan? Can they make a structure/model using different materials? Is their work tidy? Can they make their model stronger if it needs to be?
Year 2		Environment and Community			

Year 3		Journeys	<u>Stiff and Flexible Sheet Materials</u>  Design and make a bridge to cross the moat into the citadel	research and evaluate bridges, test materials and evaluate	Do they use the most appropriate materials? Can they work accurately to make cuts and holes? Can they join materials?
Year 4		Save Our Environment	<u>Cooking and Nutrition</u>  Make a fruit salad. Discuss UK seasonal fruits and fruits that are transported from rainforest areas	Use the basic principles of a healthy and varied diet to prepare dishes	Do they know what to do to be hygienic and safe? Have they thought what they can do to present their product in an interesting way?
Year 5		One World			
Year 6		Crime and Punishment	<u>Electrical and Mechanical Components</u>  Design a light/lamp	Use electrical systems and test materials	Can they use different kinds of circuit in their product? Can they think of ways in which adding a circuit would improve their product?

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact
Year 1	Summer 2	Travel	<u>Developing, planning and communicating ideas</u>  <u>Use of materials</u>  Design, test, make rockets and boats	select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing)  select from and use a wide range of materials and	Whose rocket can travel the furthest? Can you get your boat to float? Can they think of some ideas of their own? Can they explain what they want to do?

				components, including construction materials, textiles and ingredients, according to their characteristics	Can they use pictures and words to plan? Can they make a structure/model using different materials? Is their work tidy? Can they make their model stronger if it needs to be?
Year 2		Environment and Community			
Year 3		Journeys	<u>Textiles</u> Create a bag with a giraffe design	textiles (sewing, patchwork)	Can they join textiles of different types in different ways? Can they choose textiles both for their appearance and also qualities?
Year 4		Save Our Environment	<u>Electrical and Mechanical Components</u> Make a head torch to see in a cave	use electrical systems – link with science	Can they add things to their circuits? How have they altered their product after checking it? Are they confident about trying out new and different ideas?
Year 5		One World			
Year 6		Crime and Punishment	<u>Textiles</u> design own t-shirts which show your identity (batik, patchwork, tie dye)	textiles (sewing, patchwork)	Have they thought about how their product could be sold? Have they given considered thought about what would improve their

					product even more?
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## Implementation

All teaching of DT follows the design, make and evaluate cycle, with each stage rooted in technical knowledge. The design process is ingrained in real life, relevant contexts to give meaning to learning. While making, children are given choice and a range of tools to choose freely from. To evaluate, children are able to evaluate their own products against a specific design criteria. DT is taught through blocks as laid out in the long-term plan, where each of the stages are given equal weight. The children design and create products that consider function, purpose, and which are relevant to a range of sectors (for example, the home, school, leisure, culture, enterprise, industry and the wider environment). UHPS is Rights Respecting School and the teaching of DT allows pupils to consider, design and evaluate products that are used to enhance the lives of children around the world. It is through our DT curriculum that we deliver our REACH aims.

The Early Years Foundation Stage (EYFS) follows Development Matters, which aims to provide children in Reception with opportunities to have an 'Understanding of the World: people and communities, the World and technology', by the end of the EYFS Phase. The most relevant EYFS outcomes for DT are taken from the following areas of learning:

- Physical Development
- Understanding the World
- Expressive Arts and Design

## Impact

At UHPS, our vision of 'enriching lives' permeates the DT curriculum; children design, create and consider the efficiency of new and existing products with the goal of understanding the impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation and enables children to take risks, become resourceful, innovative, enterprising and capable citizens. DT outcomes in sketchbooks, Twitter, Facebook, cross-curricular lessons, Seesaw and Tapestry posts, evidence a balanced curriculum that demonstrates children's understanding of the skills at all key stages. Children take ownership of their learning through the evaluation of their products and are able to identify strengths and areas of improvement, with support from teachers.

## British Values and our Christian Distinctiveness.

Children at UHPS value the diverse ethnic backgrounds of all pupils and families and are tolerant of the variety of faiths celebrated at school. Events that celebrate the multi-cultural nature of the school are underpinned by our DT curriculum. Where

appropriate, teachers tailor curriculum objectives to significant events in the Christian calendar, such as Easter, Advent and Lent. Other religious and cultural celebrations such as Chinese New Year and Diwali are also celebrated through DT via the creation of tea-light holders and lanterns.

### Early Years

EYFS follow the statutory framework, which sets out the seven areas of learning including Understanding the World, Physical Development and Expressive Arts and Design. It is at this stage that children will begin to develop their fine motor skills necessary to generate products and enhance their curiosity of what they can build, make and create.

Cohort	Half term	Theme / Topic	Intent	Implementation	Impact L/M included throughout All areas of learning are included in each topic and ongoing throughout the year. Not necessarily specific areas that are covered.
Reception	Autumn 1	Transition How do we feel?	Support their physical development, and learn about keeping safe whilst experiencing risks (e.g. cutting with sharp knives). Find out how substances can be changed by tools, for example by whisking egg whites.	Bake and decorate emotion biscuits – biscuits will have happy, sad, angry, sick (etc.) emotions on them	Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue.  Provide a range of materials and tools and teach children to use them with care and precision.
	Autumn 2	Winter is coming...	Learn the vocabulary from the story – tilt, turn, left, right, tap, flip etc.	Bunny Slopes – explore different materials that could be used to build a ramp or a slope. Which	Explore, use and refine a variety of artistic effects to express their

			Learn the benefits of slopes and ramps	materials worked better? Why?	ideas and feelings.  Return to and build on their previous learning, refining ideas and developing their ability to represent them.  Create collaboratively, sharing ideas, resources and skills.
	Spring 1	Living in the past...	Understand need for variety in food  Begin to understand that eating well contributes to good health	Design the perfect meal for a dinosaur	
	Spring 2	What a wonderful world...	Investigate a variety of vehicles	Duck in the Truck – come up with ways to get Duck’s truck out of the sticky mud. What could Duck build?	Provide opportunities to work together to develop and realise creative ideas.
	Summer 1	Stepping into the unknown	Select tools & techniques to shape, assemble and join	Build the tallest structure possible – plan and evaluate to see if their attempts could be improved	
	Summer 2	Where will we go?	Record experiences by drawing, writing, voice recording	Design a new form of transport- teachers to set the context	

## Key Stage 1

During Key Stage 1, children at UHPS take their first steps in becoming risk takers, innovators, problem solvers and trailblazers. They start to generate ideas through talking and drawing before designing purposeful products for themselves, based on particular criteria. Children are taught to build structures, taking careful consideration about they can be made stronger and more stable as well as exploring mechanisms such as levers, sliders and wheels. They begin to deliberate a range of tools, equipment and materials based on their suitability in addition to evaluating current on-the-market products as a means of influencing and evaluating their own products against a design criteria. As part of their work with food, children are taught how to apply the principles of nutrition and healthy eating.

## Key Stage 2

Throughout Key Stage 2, children should continue to develop a chronologically secure knowledge and understanding of Design Technology skills alongside and relating to various topics, including those of historical and geographical significance. Children will develop annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided designs as well as use electrical systems in their products, for example, series circuits incorporating switches, bulbs, buzzers and motors. Building on their skills acquired in Key Stage 1, children will dive deeper into the curriculum by:

- evaluating a range of existing products
- Selecting from a wider range of tools and equipment to produce products
- Using mechanical systems in their products, for example gears, pulleys, cams, leavers and linkages.
- Applying their understanding of computing to program, monitor and control their products.

Instilling a love of cooking will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life: at UHPS, we will give children the skills to accomplish this.

## Assessment

Assessment for learning is continuous throughout the planning, teaching and learning cycle. Key Design Technology knowledge is taught to enable and promote the development of children's skills. Assessment is supported by the use of the following strategies:

- Observing children at work, individually, in pairs, small groups and in class during whole class teaching.
- Using differentiated, open-ended questions that require children to explain and unpick their understanding.
- The use of Knowledge Organisers in every lesson to enable the children to guide their own learning and use them to quiz the children and to use historical vocabulary appropriately.
- Providing effective feedback to learning, to support learning moving forward and to provide opportunities to self-assess, consolidate and study in-depth.
- Moderation of work and books will be used to inform teacher assessment and reflect on achievements and outcomes against agreed success criteria and learning objectives.

We are committed to providing a teaching and learning environment, which ensures that all children are able to progress with their learning, regardless of social class, gender, culture, race, or SEND. Teachers will use a range of strategies to ensure that all learners are included within a classroom ethos that is Relevant, Engaging, Aspirational, Creative and Holistic. (REACH)

Subject Vocabulary

## Key Stage 1

Investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function, fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used, cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder

### Lower Key Stage 2

Evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating, name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet

### Upper Key Stage 2

function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype, ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output

Specific to certain topics. (Linked to Knowledge Organisers)

