

Horn's Mill Design and Technology Curriculum

"Engineering is the closest thing to magic that exists in the world."

by Elon Musk

Intent - What do we want for our developing designers?

At Horn's Mill, we aim to provide a skills based DT Curriculum that builds resilience and inspires children to be creative and imaginative. We have developed a curriculum that meets the National Curriculum requirements and aligns with high school expectations for our children as they transition into Year 7.

Our curriculum follows a sequential process, teaches skills, and aims to inspire. Pupils research, design, make and evaluate processes and products. The sessions focus on textiles, construction (with card), and food, to ensure a good knowledge and a deep understanding of the design process and progress in skill development. Where possible DT is linked to the wider curriculum. We understand the importance of allowing children the opportunities to grapple with skills and tackle tasks independently. Tasks are well modelled with possible misconceptions addressed. Children are then encouraged to complete tasks as independently as possible.

Throughout the curriculum, we research the impact and influence designers and designs have had throughout history and how this impacts modern day design, processes and products. The designers and makers have been chosen to ensure diversity across our curriculum.

National Curriculum: Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its 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.

Aims

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.

Floor books:

The DT process followed in all year groups is recorded in a class **floor book**.

- Discuss aim/brief/purpose (including audience)
- Research product (market research KS2)
- Experimentation of key skill
- Development of final piece
- Image of final piece
- Evaluation

Projects:

Child will:

- be given the opportunity to **grow** fruit/vegetables linked to their project
- explore the **nutritional value** of their dish and alternatives
- be taught how to use **equipment safely**.
- be taught how to use **materials effectively**. (tape direction, cutting felt from edge not centre)
- be taught and allowed to practice a **key skill** not just "go through the motions"

Early Learning Goals

EYFS

Expressive Arts & Design:

Creating with materials.

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

Physical Development:

Fine motor skills.

- Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases. Use a range of small tools, including scissors, paintbrushes and cutlery.
- Begin to show accuracy and care when drawing.

Context for Design and Technology and key vocabulary

Construction – Explore Care

Key Designer – Phillip Cox (Card Sculptures)

Brief: to explore a range of construction skills in the DT corner

Audience: each other/ themselves

Construction Skills: Within continuous provision explore different ways of joining, using different DT materials and different DT equipment

- Tape to join
- Glue to join
- Split pins
- Basic cutting
- Tearing



Materials: card, paper, tissue, cardboard, tubes

Tools: scissors, rulers (curl), pencils (rolling)

Pre teach:

- Introduce designer
- Teach ways to join card and paper materials
- How to use tools safely and effectively
 - Would I cut this out of the middle?
 - How would I carry scissors?
 - Where would I use tape? Split pins?
 - Has it got a purpose?

e.g. let's make something using the materials (card, paper, tissue, cardboard) and tools in front us. How could we make hair? You might curl the card, roll the card, twist the tissue, cut the card. How have you joined the card? Is it strong? Why is it a good join? Can you think of another way or a better way?

Food - Explore food

Key Designer - Katie Kimball (YouTuber)

Brief: to explore a range of food skills in the snack area

Audience: each other/ themselves

Food Skills: Within continuous provision/snack provision explore different foods and different ways of preparing food, using different foods.

- Slicing
- Spreading
- Preparing vegetables
- Peeling fruit
- Try new foods



Food: Bread, fruit, vegetables, eggs, pasta, rice, salad

Equipment: knife, peeler, mixing bowl and spoon, grater, juicer, masher

Pre teach:

- Introduce designer
- Model exploring food activity
 - How to use equipment safely and effectively
 - Could I cut this? Grate this? Mash this?

e.g. let's make a dish with the food and equipment in front us (salad), you might chop the cucumber, grate the carrot, peel the cucumber, mash the tomato. Allow the children to explore their own way of making salad and trying new food.



Textiles – Fabric Pictures

Key Designer - Janet Bolton (Textile Pictures)

Brief: to explore a range of textiles skills in the creative corner

Audience: each other/ themselves

Textile Skills: Within continuous provision explore different ways of joining and cutting textiles, using different materials and different textile equipment

- Weaving
- Gluing
- cutting

Materials: wool, felt, hessian, net

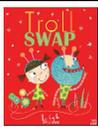
Pre teach: Introduce designer

- Model exploring textile activity
- How to use equipment safely and effectively. Could I cut this? Rip this?

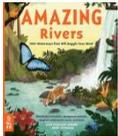
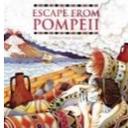
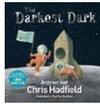
e.g. let's make a textile picture with the materials and tools in front us, you might weave the fabric, cut some shapes, glue on fabric or sequins. Allow the children to explore their own way of making a picture.

- Picture of sea
- Picture of family

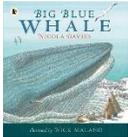
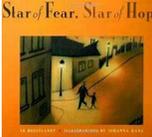


National Curriculum	KS1			
<p>Key stage 1</p> <p>Pupils should be taught:</p> <ul style="list-style-type: none"> ♣ to use a range of materials creatively to design and make products ♣ to use drawing, painting and sculpture to develop and share their ideas, experiences and imagination ♣ to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space ♣ about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work 	Construction KS1			
	Year 1		Year 2	
	 <p>DT: Construction (Stained Glass) Find Magic in the Everyday</p>		 <p>DT: Construction (Pop up card) Tracks and Trolls</p>	
	<p>PURPOSE: To create a stained glass windows for our local church</p> <ul style="list-style-type: none"> Using glue effectively and cleanly Cutting straight lines with scissors How to use tools safely and effectively Cutting strips effectively Carry scissors safely 		<p>PURPOSE: To create a pop up card that depicts a key scene from the troll swap by eigh Hodgkinson</p> <ul style="list-style-type: none"> Cut the edge of the material To measure and draw a straight line To draw a shape using a template Fold accurately (using a ruler) Cut out shapes with scissors 	
	Designer: Annahita Hessami	Key Vocabulary:	Designer: Robert Sabuda	Key Vocabulary:
	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> Design criteria User/audience intention brief designer Stained glass window Abstract 	 	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> mechanism parallel fold Tab Dotted line Solid line 90-degree corner template 	
Textiles KS1				
 <p>DT: Textiles (Toy Jacket) Voyage of Discovery</p>	 <p>DT: Textiles (Wolf badge) Looking out for Life</p>			
<p>PURPOSE: to design and create a toy for a friend</p> <ul style="list-style-type: none"> To create and follow a design To draw on fabric using felt pens To design for an audience To mark the waste To cut neatly and effectively 		<p>PURPOSE: to make a badge to raise awareness of wolf extinction</p> <ul style="list-style-type: none"> To create and follow a design To cut out from the edge of a material To use a template to draw around To use glue to attach two fabrics To use fabric pens 		

<p>Designer: Boolah Baguette</p> 	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> • Textiles • Fabric/material • Stuffed/soft toy • character • unique 	<p>Designer: Nancy Nicholson</p> 	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> • Embroidery • Badge • Template • Contrasting colours
Food KS1			
Year 1		Year 2	
 <p>DT: Food (Sandwich) Cold Places</p>		 <p>DT: Food (WW2 Stew) Hiding in History</p>	
<p>PURPOSE: to create a sandwich using local food sources for a journey to London</p> <ul style="list-style-type: none"> • Learn how to follow a recipe (support) • Learn how to shell eggs • Learn how to spread butter • Talk about the nutritional value of white and brown bread (allow children to make an informed choice in their sandwich) • Children learn about where eggs come from and discuss the ethics of battery hens and free range eggs (Use eggs from the chickens) 		<p>PURPOSE: to make a stew that would be eaten in WW2</p> <ul style="list-style-type: none"> • Learn how to follow a recipe (independently) • Prepare, peel and chop vegetables • Talk about the nutritional value of a rainbow of vegetables and try some • Learn where different vegetables grow • Learn how to grow carrots • Discuss ethical and environmental implications of buying local and seasonal ingredients 	
	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> • Hygiene • Recipe • Peeling shell • Kneading • Proving • Grain • Method • Local source • Free range • Battery hen • Harvest • Milled • Wholemeal 		<p>Key Vocabulary:</p> <ul style="list-style-type: none"> • Chopping • Arch method • Claw Grip • vegetables • Baking • Boiling • Stewing • Source • Portion • Allotment • Vitamins • Nutrition • Diced • Sliced

National Curriculum	KS2														
Key stage 2	Construction KS2														
	Year 3		Year 4		Year 5		Year 6								
<p>Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design.</p> <p>Pupils should be taught:</p> <ul style="list-style-type: none"> ♣ to create sketch books to record their observations and use them to review and revisit ideas ♣ to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay] ♣ about great artists, architects and designers in history. 	DT: Construction (Paper lamp) Discovery 		DT: Construction (Safety Masks) Romans 		DT: Construction (Space buggy) What's out there? 		DT: Construction (Cousteau vessel) Conservation- Climate Change 								
	PURPOSE: to create an oriental lantern with a scene from our story for someone celebrating the summer solstice		PURPOSE: to create a mask to protect people from smoke inhalation during a volcanic eruption		PURPOSE: to create a space buggy to move across a bumpy terrain		PURPOSE: to create a vehicle based on Jacques Cousteau to educate next year's Team 6								
	<ul style="list-style-type: none"> • Cutting out at the edge of the material • Measuring and drawing a straight line • Drawing a shape with a template • Folding accurately (using a ruler) • Cutting shapes with scissors • Use a template to make a net that creates a 3D shape • Cut a shape (cut into corners) • Mark the waste • Use cutting skills to create a shadow image 		<ul style="list-style-type: none"> • Cut a shape (cut into corners) • Mark the waste • Use cutting skills to create a shadow image • Measure and create your own template to make a net that creates a 3D shape • Safely make a hole in the centre of a shape • Estimate length (measuring elastic) • Tie a knot 		<ul style="list-style-type: none"> • Measure and create your own template to make a net that creates a 3D shape • Mark the waste • Cut a shape (cut into corners) • Safely make a hole in the centre of a shape (windows) • Create a lever • Create moving axles • Use tabs and split pins to finish your design 		<ul style="list-style-type: none"> • Template and net • Measuring and estimating • Tabs for finishing • Split pins • Measuring • 3D shape • Finishing • Neatly, cutting holes, cutting shapes including corners • Mechanism for movement 								
	Designer: Anna Brones/ Dawn Thornhill		Designer: Galt		Designer: NASA		Designer: Jacques Cousteau								
		Key Vocabulary: <ul style="list-style-type: none"> • circuit • switch • net 				Key Vocabulary: <ul style="list-style-type: none"> • prototype • Constraints • Annotated diagram 				Key Vocabulary: <ul style="list-style-type: none"> • axle • lever • Finishing • Aesthetics • Rover/space buggy • Reinforce 				Key Vocabulary: <ul style="list-style-type: none"> • Submarine • vehicle 	

Textiles KS2							
Year 3		Year 4		Year 5		Year 6	
DT: Textiles (Christmas Market) Travels and Traditions 		DT: Textiles (Stone pocket) The Iron Age 		DT: Textiles (Bag 4 Life) Can one person make a difference? 		DT: Textiles (leaver's memory patchwork quilt) My Next Adventure 	
PUPROSE: to make a product to sell at the Christmas Market		PUPROSE: to create a product (pouch) to hold a precious stone		PUPROSE: to create a product (bag) using upcycled old clothes		PUPROSE: to create a panel of fabric to commemorate being at Horn's Mill Primary.	
<ul style="list-style-type: none"> Learn how to line stitch to join two pieces of fabric in order to create a Christmas decoration. Earn how to sew on a button Learn how to thread a needle. Learn how to estimate length of thread 		<ul style="list-style-type: none"> Learn how to make felt Learn how to measure and create a pattern/template for their design Learn how to over sew Estimate the length of a strap Sew on a strap 		<ul style="list-style-type: none"> Create a strong and effective bag by upcycling old clothes Research bags and investigate materials Over sew to create the bag with a handle To sew on the reverse side To choose which stitch is the most appropriate To test the final product 		<ul style="list-style-type: none"> Create a fabric picture using applique for a cushion/patchwork blanket Bring in a memorable piece of material for the cushion Stitch decoratively over the fabric picture To attach beads or buttons to the panel 	
Designer: Lucy Mae		Designer: Natasha Smart		Designer: L'atelier De Fil end Ideas		Designer: Sharon Blackman	
							
Key Vocabulary: <ul style="list-style-type: none"> Needle Cast off stitch Pattern piece felt Line stitch 		Key Vocabulary: <ul style="list-style-type: none"> pin Tie off stitch knot Pattern piece fibres wool Button hole Over stitch 		Key Vocabulary <ul style="list-style-type: none"> practical function hem garment 		Key Vocabulary <ul style="list-style-type: none"> embellish Applique 	

Food KS2			
Year 3	Year 4	Year 5	Year 6
DT: Food (Tuna Salad) What's below the 	DT: Food (Fruit Salad) Rainforest 	DT: Food (Healthy Fast Food) Is the USA the land of opportunity? 	DT: Food (Potato cake) Keep believing WW2 
<ul style="list-style-type: none"> Learn how to follow a complex recipe Learn how to open a tin Learn how to grate carrot Learn how to prepare, chop and grate vegetables Learn about tuna is caught and its ethical implications. Check the nutritional value of cress and try some Learn how to grow cress. Learn how to wash up and tidy away equipment 	<ul style="list-style-type: none"> Write their own recipe (after they have made it) Learn how to prepare a variety of fruits Learn about seasonal British fruit Learn about the ethical implications of non-seasonal/non local fruit (food miles) Check the nutritional value of various fruit and try some Learn how to grow strawberries. Learn how to wash up and tidy equipment Conduct market research into food miles (Tesco) 	<ul style="list-style-type: none"> Learn how to create their own healthy fast food meal recipe (before they make it) Learn about the ethical implications of fast food and consider a healthy and balanced diet. Learn about the ethical implications of animal rearing and discuss a vegan and vegetarian diet Research the nutritional value of fast food Learn how to grow salad leaves. Learn how to wash up and tidy equipment Conduct own market research into healthy choices (Helsby services) 	<ul style="list-style-type: none"> Follow a WW2 recipe to create a savoury potato cake Learn about the health benefits/ health implications of a WW2 diet Market your potato cake by creating a propaganda poster. Research its nutritional value of WW2 recipe vs Modern revamped recipe Design your own style of potato cake having made your own recipe. Learn how to grow own potatoes. Learn how to store potatoes Conduct market research into which recipe people prefer
Key Vocabulary: <ul style="list-style-type: none"> Salad dressing Tossing salad Sustainable Food chain Predator Species Ecosystem / Biodiversity Over fishing 	Key Vocabulary: <ul style="list-style-type: none"> Fruit Food miles Local Greengrocer Imported As the crow flies 	Key Vocabulary: <ul style="list-style-type: none"> Balanced diet Packaging Reared Market research Processed food Saturated fat Traffic light labelling 	Key Vocabulary: <ul style="list-style-type: none"> Root vegetables Flower vegetable Stem vegetable Frying Propaganda Rations Adapt a recipe  

End Points for Design and Technology

Reception

By the end of Reception, within continuous provision children will explore construction of paper, card, textiles and food. They will learn the skills identified above and will have a knowledge of some designers to bring to their learning when they begin National Curriculum for DT.

Team 1 – 6

Each class' floor book and the children's individual final pieces will demonstrate the progression of skills identified above and the knowledge of the designer that inspired their work. The key vocabulary and process learning will be evidenced through pupil voice and within evaluations in the floor book.