

**Hunmanby Primary School  
Design and Technology Curriculum Map**

**Intent**

**Our School Vision**

At Hunmanby Primary School we believe that Design and Technology is a subject where children's capability in designing and making is developed through combining their designing and making skills with knowledge and understanding. We view Design and Technology as a subject which allows children to apply their knowledge and understanding in a creative way to design and make products.

**Why do we teach this? Why do we teach it in the way we do?**

At Hunmanby Primary school we aim to provide all children with a broad and balanced curriculum which prepares them for life beyond primary education. We encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. During Design and Technology, we teach children the language skills they will need to be effective communicators. We actively encourage our children to be critical thinkers, forward planners and effective problem solvers. We also teach our children to be able to work as capable individuals and as part of a valuable, productive team. Resilience is a key theme running through our DT curriculum, and the children are encouraged to become innovators and risk-takers.

**Implementation**

**What do we teach? What does this look like?**

Following the Cornerstones curriculum, the design and technology projects are well sequenced to provide a coherent subject scheme that develops children's designing, planning, making and evaluating skills. Each project is based around a design and technology subject focus of structures, mechanisms, cooking and nutrition or textiles. The design and technology curriculum's electronic systems and IT monitoring and control elements are explicitly taught in our science projects to ensure the links between the subjects are highlighted. Where possible, meaningful links to other areas of the curriculum have been made. For example, the cooking and nutrition project Eat the Seasons is taught alongside the geography project Sow, Grow and Farm.

All the projects follow a structure where children are introduced to key concepts and build up knowledge and skills over time, using a more comprehensive range of equipment and building, cutting, joining, finishing and cooking techniques as they progress through school. All projects contain focused, practical tasks in the Develop stage to help children gain the knowledge and skills needed to complete their Innovate tasks independently. Throughout Key Stages 1 and 2, children build up their knowledge and understanding of the iterative design process. They design, make, test and evaluate their products to match specific design criteria and ensure they fit their purpose. Throughout the projects, children are taught to work hygienically and safely.

## Impact

At Hunmanby Primary School, our children will have clear enjoyment and confidence in design and technology that they will then apply to other areas of the curriculum. This will enable our children to:

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 and 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.

Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child.

Children will 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.

## Substantive Knowledge and Disciplinary Knowledge

### Substantive Knowledge

**Substantive knowledge is the carefully sequenced, factual knowledge that we learn through our curriculum; our life-long learning and other information that we learn alongside this.**

Substantive knowledge in design and technology is based on the knowledge of four key elements of the process of design (design, make, evaluate and technical knowledge). All of these elements will be taught from Reception to Year 6 and vocabulary is taught explicitly and will be deliberately practised and applied through the 4 key elements. These are:

- Design- Know how to design a product that is purposeful, functional and appealing to a specific group.
- Make- Know how to cut, join and finish a range of increasingly complex materials, ranging from paper to wood.
- Evaluate- Know how to investigate, evaluate and analyse a range of existing products and their own designs based on a specific design criteria. In addition to this, children will know key individuals have helped to shape the world in which we live in.

	<p>- Technical knowledge- Know how to apply their knowledge of specific materials to meet the criteria listed above in the design, make and evaluate stages.</p>
<b>Disciplinary Knowledge</b>	<p>Disciplinary knowledge is the process of enabling children to use their substantive knowledge of products and materials around them to make links between and across different areas of the curriculum. Knowledge in design and technology will equip the children with the opportunity to explain how and why products have changed over time and how they might be further improved in the future. They can use their knowledge and understanding to suggest how existing products may be improved with the advances in modern technology. Children will demonstrate that they have the cultural capital to become global citizens, following global themes and fundamental British Values, in an ever changing and technologically advancing world.</p>

<b>Long Term Overview</b>						
	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>EYFS Nursery</b>	Build it up (What we'll Build- Oliver Jeffers) What to do with a box	Marvelous machines Robot design and make		Craft making flowers	Shape tapping pictures .	Make and design a sea creature
<b>Reception</b>	Build it up Building bridges Designing and building shelters	Marvellous Machines Build it! Puppets and Pop ups Finger puppets Pop ups	Long ago -Old clothes to new clothes	Animal safari Animal homes Animal masks	Ready Steady Grow -Seed shakers Creep, crawl and wriggle -Wonderful webs	On the beach -Seaside scenes -Boat builders
<b>Year 1</b>		Shade and Shelter		Taxi		Chop, Slice and Mash
<b>Year 2</b>	Remarkable Recipes	Remarkable Recipes	Push and Pull	Cut Stitch and Join	Beach Hut	Beach Hut
<b>Year 3</b>	Cook Well, Eat Well	Cook Well, Eat Well	Making it Move	Making it Move	Greenhouses	Greenhouses
<b>Year 4</b>	Fresh Food, Good Food		Functional and Fancy Fabrics		Tomb Builders	Electrical circuits and conductors
<b>Year 5</b>		Moving Mechanisms		Architecture		Eat the Seasons
<b>Year 6</b>		Food For Life		Engineering and Electrical Circuits (links to Science)	Make Do and Mend	

We have selected the **most relevant** statements from Development Matters age ranges for Three and Four-Year-Olds and Reception as well as highlighting the statements within the ELGs **which feed into** the programme of study **for DT**. The most relevant statements **for DT** are taken from the following areas of learning:

- Physical Development
- Expressive Arts and Design

<b>Three and Four-Year-Olds</b>	Personal, Social and Emotional Development		<ul style="list-style-type: none"> <li>• Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.</li> </ul>
	Physical Development		<ul style="list-style-type: none"> <li>• Use large-muscle movements to wave flags and streamers, paint and make marks.</li> <li>• Choose the right resources to carry out their own plan.</li> <li>• Use one-handed tools and equipment, for example, making snips in paper with scissors.</li> </ul>
	Understanding the World		Explore how things work.
	Expressive Arts and Design		<ul style="list-style-type: none"> <li>• Make imaginative and complex ‘small worlds’ with blocks and construction kits, such as a city with different buildings and a park.</li> <li>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>• Develop their own ideas and then decide which materials to use to express them.</li> <li>• Create closed shapes with continuous lines, and begin to use these shapes to represent objects.</li> </ul>
<b>Reception</b>	Physical Development		<ul style="list-style-type: none"> <li>• Progress towards a more fluent style of moving, with developing control and grace.</li> <li>• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> <li>• Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</li> </ul>
	Expressive Arts and Design		<ul style="list-style-type: none"> <li>• Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>• Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>• Create collaboratively, sharing ideas, resources and skills.</li> </ul>
<b>ELG</b>	Physical Development	Fine Motor Skills	<ul style="list-style-type: none"> <li>• Use a range of small tools, including scissors, paintbrushes and cutlery.</li> </ul>

	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>• Share their creations, explaining the process they have used.</li> </ul>
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**Level Expected at the End of EYFS**

<b>Nursery</b>						
	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Development Matters</b>	<b>Build it up</b> (What we'll Build-oliver Jeffers) What to do with a box Manipulate malleable materials into a variety of shapes and forms using their hands and other simple tools.	<b>Marvelous machines</b> Robot design and make Use a variety of paper and fabric to make images	<b>Long Ago</b> Continuous provision	<b>Signs of Spring</b> Craft making flowers Begin to talk about and draw plants with attention to their parts	<b>Creep crawl wriggle</b> Shape tap pin pictures Make simple prints using a variety of tools, including print blocks and rollers.	<b>On the beach</b> Make and design a sea creature Explore ways of changing the shape or texture of malleable materials
<b>Reception</b>						
	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>Development Matters</b>	<b>Build it up</b> -Building bridges -Designing and building shelters	<b>Puppets and Pop ups</b> -Finger puppets -Pop ups	<b>Long ago</b> -Investigating old clothes to new clothes	<b>Animal safari</b> -Building animal homes -Making animal masks	<b>Ready Steady Grow</b> -Seed shakers -Making fruit salad <b>Creep, crawl and wriggle</b> -Wonderful webs	<b>On the beach</b> -Seaside scenes -Boat builders
<b>Substantive Knowledge</b>	Construct simple structures and models using a range of materials.	Describe what, why and how something was made and compare with others.	Select appropriate materials when constructing and making.	Construct simple structures and models using a range of materials.	Follow instructions, including simple recipes that include measures and ingredients.	Explore, build and play with a range of resources and construction kits with wheels and axles.
<i>SEE TEACHER'S WEEKLY PLANS FOR SKILLS, CORE KNOWLEDGE AND ACTIVITY DETAILS</i>						





Year 1						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Prior Learning &amp; Progression</b>						
<b>Substantive and disciplinary knowledge</b>		This project teaches children about the purpose of shelters and their materials. They name and describe shelters and design and make shelter prototypes. Children then design and build a play den as a group and evaluate their completed product.		This project teaches children about wheels, axles and chassis and how they work together to make a vehicle move.		This project teaches children about sources of food and the preparatory skills of peeling, tearing, slicing, chopping, mashing and grating. They use this knowledge and techniques to design and make a supermarket sandwich according to specific design criteria.
<b>Skills</b>		Name and explore a range of everyday products and describe how they are used. Follow the rules to keep safe during a practical task. Create a design to meet simple design criteria. Construct simple structures, models or other products using a range of materials. Talk about their own and each other's work, identifying strengths or weaknesses and offering support. Select and use a range of materials, beginning to explain their choices. Describe why a product is important.		Name and explore a range of everyday products and describe how they are used. Use wheels and axles to make a simple moving model. Create a design to meet simple design criteria. Talk about their own and each other's work, identifying strengths or weaknesses and offering support. Describe the similarities and differences between two products. Describe why a product is important.		Follow the rules to keep safe during a practical task. Create a design to meet simple design criteria. Select the appropriate tool for a simple practical task. Talk about their own and each other's work, identifying strengths or weaknesses and offering support. Measure and weigh food items using non-standard measures, such as spoons and cups. Select healthy ingredients for a fruit or vegetable salad. Sort foods into groups by whether they are from an animal or plant source. Describe why a product is important.
<b>SEE TEACHER'S WEEKLY PLANS FOR SKILLS, CORE KNOWLEDGE AND ACTIVITY DETAILS</b>						

Year 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Remarkable Recipes		Push and Pull	Cut Stitch and Join	Beach Hut	
<b>Prior Learning &amp; Progression</b>						
<b>Substantive and disciplinary Knowledge</b>	This project teaches children about sources of food and tools used for food preparation. They also discover why some foods are cooked and learn to read a simple recipe. The children choose and make a new school meal that fulfils specific design criteria.		This project teaches children about three types of mechanism: sliders, levers and linkages. They make models of each mechanism before designing and making a greetings card with a moving part.	This project teaches children about fabric home products and the significant British brand Cath Kidston. They learn about sewing patterns and using a running stitch and embellishments before making a sewn bag tag.	This project teaches children about making and strengthening structures, including different ways of joining materials.	This project teaches children about making and strengthening structures, including different ways of joining materials.
<b>Skills</b>	<p>Prepare ingredients by peeling, grating, chopping and slicing.</p> <p>Work safely and hygienically in construction and cooking activities.</p> <p>Generate and communicate their ideas through a range of different methods.</p> <p>Select the appropriate tool for a task and explain their choice.</p> <p>Explain how closely their finished products meet their design criteria and say what they could do better in the future. Describe the types of food needed for a healthy and varied diet and apply the principles to make a simple, healthy meal. Identify the origin of some common foods (milk, eggs, some meats, common fruit and vegetables).</p> <p>Explain why a designer or inventor is important.</p>		<p>Explain how an everyday product could be improved.</p> <p>Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.</p> <p>Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.</p>	<p>Explain how closely their finished products meet their design criteria and say what they could do better in the future. Generate and communicate their ideas through a range of different methods. Select the appropriate tool for a task and explain their choice.</p> <p>Use different methods of joining fabrics, including glue and running stitch.</p> <p>Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.</p> <p>Add simple decorative embellishments, such as buttons, prints, sequins and appliqué. Compare different or the same products from the same or different brands.</p> <p>Explain why a designer or inventor is important.</p>	<p>Explain how closely their finished products meet their design criteria and say what they could do better in the future. Explore how a structure can be made stronger, stiffer and more stable.</p> <p>Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.</p>	<p>Explain how closely their finished products meet their design criteria and say what they could do better in the future.</p> <p>Explore how a structure can be made stronger, stiffer and more stable.</p> <p>Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect.</p>
<b>SEE TEACHER'S WEEKLY PLANS FOR SKILLS, CORE KNOWLEDGE AND ACTIVITY DETAILS</b>						

Year 3						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Cook Well, Eat Well		Making it Move		Greenhouses	
<b>Prior Learning &amp; Progression</b>						
<b>Substantive and disciplinary knowledge</b>	This project teaches children about food groups and the Eat Well guide. They learn about methods of cooking and explore these by cooking potatoes and designing and cooking food for our Christmas party.		This project teaches children about cam mechanisms. They experiment with different shaped cams before designing, making and evaluating a child's automaton toy.		This project teaches children about the purpose, structure and design features of greenhouses, and compares the work of two significant greenhouse designers. They learn techniques to strengthen structures and use tools safely. They use their learning to design and construct a mini greenhouse.	
<b>Skills</b>	<p>Use appliances safely with adult supervision. Develop design criteria to inform a design.</p> <p>Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.</p> <p>Prepare and cook a simple savoury dish</p> <p>Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars).</p> <p>Identify and name foods that are produced in different places.</p>		<p>Explain how an existing product benefits the user.</p> <p>Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products.</p> <p>Develop design criteria to inform a design.</p> <p>Use tools safely for cutting and joining materials and components.</p> <p>Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.</p> <p>Plan which materials will be needed for a task and explain why.</p>		<p>Explain how an existing product benefits the user.</p> <p>Develop design criteria to inform a design.</p> <p>Create shell or frame structures using diagonal struts to strengthen them.</p> <p>Use tools safely for cutting and joining materials and components.</p> <p>Suggest improvements to their products and describe how to implement them, beginning to take the views of others into account.</p> <p>Plan which materials will be needed for a task and explain why.</p> <p>Explain the similarities and difference between the work of two designers.</p>	
<i>SEE TEACHER'S WEEKLY PLANS FOR SKILLS, CORE KNOWLEDGE AND ACTIVITY DETAILS</i>						

Year 4						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Fresh Food, Good Food		Functional and Fancy Fabrics		Tomb Builders	Electrical circuits and conductors
<b>Prior Learning &amp; Progression</b>	Chop, Slice and Mash (Y1) Remarkable Recipes (Y2) Cook well, eat well (y3)		Cut, stitch and join (y2)		Making it move (y3)	
<b>Substantive and disciplinary Knowledge</b>	This project teaches children about food decay and preservation. They discover key inventions in food preservation and packaging, then make examples. The children prepare, package and evaluate a healthy snack.		This project teaches children about home furnishings and the significant designer William Morris. They learn techniques for decorating fabric, including block printing, hemming and embroidery and use them to design and make a fabric sample		Tomb Builders teaches children about simple machines, including wheels, axles, inclined planes, pulleys and levers, exploring how they helped ancient builders to lift and move heavy loads.	<b>Electrical circuits and conductors</b> combine their learning to design and make a nightlight.
<b>Skills</b>	Investigate and identify the design features of a familiar product. Work safely with everyday chemical products under supervision, such as disinfectant hand wash and surface cleaning spray. Use annotated sketches and exploded diagrams to test and communicate their ideas. Choose from a range of materials, showing an understanding of their different characteristics. Identify and name foods that are produced in different places in the UK and beyond.	Prototype shell and frame structures, showing awareness of how to strengthen, stiffen and reinforce them. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements. Identify and use a range of cooking techniques to prepare a simple meal or snack. Design a healthy snack or packed lunch and explain why it is healthy. Explain how and why a significant designer or inventor shaped the world.	Investigate and identify the design features of a familiar product. Use annotated sketches and exploded diagrams to test and communicate their ideas. Select, name and use tools with adult supervision. Choose from a range of materials, showing an understanding of their different characteristics. Explain how and why a significant designer or inventor shaped the world.	Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements.  Hand sew a hem or seam using a running stitch. Create detailed decorative patterns on fabric using printing techniques. Create and complete a comparison table to compare two or more products.	Explore and use a range of mechanisms (levers, axles, cams, gears and pulleys) in models or products. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements. Choose from a range of materials, showing an understanding of their different characteristics.	Incorporate circuits that use a variety of components into models or products. Use annotated sketches and exploded diagrams to test and communicate their ideas. Write a program to control a physical device, such as a light, speaker or buzzer. Identify what has worked well and what aspects of their products could be improved, acting on their own suggestions and those of others when making improvements. Create and complete a comparison table to compare two or more products.

SEE TEACHER'S WEEKLY PLANS FOR SKILLS, CORE KNOWLEDGE AND ACTIVITY DETAILS

Year 5						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		<b>Moving Mechansims</b>		<b>Architecture</b>		<b>Eat Seasons</b>
<b>Prior Learning &amp; Progression</b>						
<b>Substantive and disciplinary knowledge</b>		This project teaches children about pneumatic systems. They experiment with pneumatics before designing, making and evaluating a pneumatic machine that performs a useful function.		This project teaches children about how architectural style and technology has developed over time and then use this knowledge to design a building with specific features.		This project teaches children about the meaning and benefits of seasonal eating, including food preparation and cooking techniques.
<b>Skills</b>		<p>Explain the functionality and purpose of safety features on a range of products.</p> <p>Use mechanical systems in their products, such as pneumatics.</p> <p>Build a framework using a range of materials to support mechanisms.</p> <p>Name and select increasingly appropriate tools for a task and use them safely.</p> <p>Test and evaluate products against a detailed design specification and make adaptations as they develop the product.</p> <p>Select and combine materials with precision.</p> <p>Survey users in a range of focus groups and compare results.</p>		<p>Explain how the design of a product has been influenced by the culture or society in which it was designed or made.</p> <p>Use pattern pieces and computer-aided design packages to design a product.</p> <p>Build a framework using a range of materials to support mechanisms.</p> <p>Test and evaluate products against a detailed design specification and make adaptations as they develop the product.</p> <p>Select and combine materials with precision.</p> <p>Describe the social influence of a significant designer or inventor.</p>		<p>Use an increasing range of preparation and cooking techniques to cook a sweet or savoury dish.</p> <p>Evaluate meals and consider if they contribute towards a balanced diet.</p> <p>Describe what seasonality means and explain some of the reasons why it is beneficial.</p>

Year 6						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
		Food For Life		Engineering and Electrical Circuits (links to Science)	Make Do and Mend	
<b>Prior Learning &amp; Progression</b>		This project teaches children about processed food and healthy food choices. They make bread and pasta sauces and learn about the benefits of whole foods. They plan and make meals as part of a healthy daily menu, and evaluate their completed products.		This project teaches children about remarkable engineers and significant bridges, learning to identify features, such as beams, arches and trusses. They complete a bridge-building engineering challenge to create a bridge prototype.	This project teaches children a range of simple sewing stitches, including ways of recycling and repurposing old clothes and materials.	
<b>Substantive and disciplinary knowledge</b>		<p>Analyse how an invention or product has significantly changed or improved people's lives.</p> <p>Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.</p> <p>Follow a recipe that requires a variety of techniques and source the necessary ingredients independently.</p> <p>Plan a healthy daily diet, justifying why each meal contributes towards a balanced diet.</p> <p>Explain how organic produce is grown.</p>		<p>Analyse how an invention or product has significantly changed or improved people's lives.</p> <p>Demonstrate how their products take into account the safety of the user.</p> <p>Explain and use mechanical systems in their products to meet a design brief.</p> <p>Understand and use electrical circuits that incorporate a variety of components (switches, lamps, buzzers and motors) and use programming to control their products.</p>	<p>Analyse how an invention or product has significantly changed or improved people's lives.</p> <p>Select appropriate tools for a task and use them safely and precisely.</p> <p>Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.</p> <p>Pin and tack fabrics in preparation for sewing and more complex pattern work.</p> <p>Choose the best materials for a task, showing an</p>	

		<p>Compare results.</p> <p>Covered Skill Create a detailed comparative report about two or more products or inventions.</p>		<p>Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways.</p> <p>Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.</p> <p>Use a sensor to monitor an environmental variable, such as temperature, sound or light.</p> <p>Demonstrate modifications made to a product as a result of ongoing evaluation by themselves and to others.</p> <p>Choose the best materials for a task, showing an understanding of their working characteristics.</p> <p>Compare results.</p> <p>Covered Skill Create a detailed comparative report about two or more products or inventions.</p> <p>Present a detailed account of the significance of a favourite designer or inventor.</p>	<p>understanding of their working characteristics.</p> <p>Use different methods of fastening for function and decoration, including press studs, Velcro and buttons.</p> <p>Covered Skill Create a detailed comparative report about two or more products or inventions.</p>	
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