



Great Ponton's DT Curriculum

To create and develop enthusiasm and skills in design and technology in a variety of forms.

As DT is a broad-ranging subject, we have designed Great Ponton's Design and Technology curriculum with careful consideration to the different elements. We wanted to ensure that we had the correct balance of breadth and depth as well as ensuring that our curriculum was relevant to the children and included local links. Our children's DT journey begins in EYFS and is carefully mapped throughout school, with knowledge building year upon year. We have identified how knowledge relates to past and future learning to help children build, connect and remember different aspects of the curriculum in the long term. This helps teachers to emphasise how knowledge is interconnected, enabling children to build a strong schema to remember more. We chose to break our substantive content knowledge into 5 key areas: *Structures, Mechanisms, Textiles, Food and nutrition and Electronics.*

When designing our DT curriculum, we identified key concepts which run throughout our curriculum. These concepts help both teachers and children to group DT knowledge into more manageable units which helps to draw out the links between ideas and processes as children progress through school.

Content Knowledge	Key Concepts/Golden Strands
Structures	Design
Mechanisms	Make
Textiles	Evaluate
Food and Nutrition	Technical Knowledge
Electrical Systems (KS2 only) Digital World (KS2 only)	

Great Ponton's Curriculum Overview – DT – Cycle A						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS		Food - Soup Making		Kapow: Textiles - Bookmarks		Kapow: Structures – Junk Modelling
Y1/2		Food - Soup Making		Kapow: Textiles - Bookmarks		Kapow: Structures – Junk Modelling
Y3/4		Design, Make and Evaluate. Tudor House		KAPOW: Textiles: Fastenings. (Roman Purse).		KAPOW: Food: Adapting a recipe (Egyptian recipes).
Y5/6		Textiles- Stuffed toys Design a stuffed toy and make		Food- What could be healthier? Adapt a recipe	Technical knowledge- Electrical systems Steady Hands Game	

Great Ponton's Curriculum Overview – DT – Cycle A			
	Autumn	Spring	Summer
EYFS	Enquiry Question: What foods are healthy?	Enquiry Question: How to make a bookmark?	Enquiry Question: How to use junk for modelling?
	Intent: Children will explore fruits and vegetables and the differences between them. Children will begin to safely use tools to prepare ingredients.	Intent: Children will know that different tools have different uses and can create a variety of effects. Children will know how to effectively use tools such as scissors, staplers, clay tools, split pins and shape cutters competently and appropriately. Children will begin to consider and think about their final outcome before starting the making process.	Intent: Children will know that we can separate and join materials in a variety of ways. Children will know that we can separate materials by cutting, ripping and tearing. Children will know that we can join materials together by gluing, taping and wrapping. Children will know that we sometimes must try materials out to see which will be the best for our outcome.

			Children will be able to select appropriate materials for their chosen outcome. -To show their creations to adults and peers and share how the made it.
	Future Learning: Children will begin to design packaging for the different foods.	Future Learning: Children will learn the importance of a clear design criteria., including individual preferences and requirements in a design.	Future Learning: Children will be able to make a structure according to design criteria.
Year 1/2	Enquiry Question: What ingredients make soup?	Enquiry Question: How to make a bookmark?	Enquiry Question: How to create a structure?
	Builds on: Children will be able to chop fruit and vegetables safely. Children will show understanding the difference between fruits and vegetables. Children will begin to understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). Children will know that a blender is a machine which mixes ingredients together into a smooth liquid.	Builds on: Children will be able to make stable structures from card, tape and glue . Children will show how to turn 2D nets into 3D structures. Children will be able to follow instructions to cut and assemble	Builds on: Children will be learning about different types of structures, found in the natural world and in everyday objects. Children will be following instructions to cut and assemble the supporting structure. Children will be making a structure according to design criteria. Children will begin creating joints and structures from paper/card and tape.
	Future Learning: Children will begin to start creating a healthy and nutritious recipe.	Future Learning: Children will be designing with key features to appeal to a specific person/purpose.	Future Learning: Children will be designing a structure that is aesthetically pleasing and selecting materials to create a desired effect. Children will explore building frame structures designed to support weight.
Year 3/4	Enquiry Question: How to create a framed sculpture?	Enquiry Question: What makes a good fastening?	Enquiry Question: How do use a recipe successfully?
	Builds on: Children will be designing a structure that is aesthetically pleasing and selecting materials to create a desired effect.	Builds on: Children will know that a fastening is something which holds two pieces of material together for example a zipper, toggle, button, press stud and velcro.	Builds on: Children will begin creating a healthy and nutritious recipe using seasonal ingredients, considering the taste,

	<p>Children will begin to explore building frame structures designed to support weight. Children will make facades from a range of recycled materials. Children will explore creating a range of different shaped frame structures. Children will be making a variety of free standing frame structures of different shapes and sizes.</p>	<p>Children will know that different fastening types are useful for different purposes. Children will explore that creating a mock up (prototype) of their design is useful for checking ideas and proportions.</p>	<p>texture, smell and appearance of the dish. Children will be designing an item within a given budget, drawing upon previous taste testing judgements.</p>
	<p>Future Learning: Children will begin identifying where a structure needs reinforcement and using card corners for support. Explaining why selecting appropriating materials is an important part of the design process.</p>	<p>Future Learning: Children will begin to understand that it is easier to finish simpler designs to a high standard.</p>	<p>Future Learning: Children will begin writing an amended method for a recipe to incorporate the relevant changes to ingredients.</p>
Year 5/6	<p>Enquiry Question: How to make a stuffed toy?</p>	<p>Enquiry Question What is healthy food?</p>	<p>Enquiry Question: What are electrical systems?</p>
	<p>Builds on: Children will be able to design a stuffed toy, considering the main component shapes required and creating an appropriate template, considering the proportions of individual components. Children will be creating a 3D stuffed toy from a 2D design. Children will be able to measure, mark and cut fabric. Using pins effectively to secure a template to fabric without creases or bulges. Marking and cutting fabric accurately, in accordance with their design. Children will be creating strong and secure blanket stitches when joining fabric, Threading needles independently. Using appliqué to attach pieces of fabric decoration.</p>	<p>Builds on: Children will understand where meat comes from. Children will know that I can adapt a recipe to make it healthier by substituting ingredients. Children will know that I can use a nutritional calculator to see how healthy a food option is.</p>	<p>Builds on: Children will be identifying factors that could be changed on existing products and explaining how these would alter the form and function of the product. Children will be developing design criteria that clarifies the target user. Designing a steady hand game - identifying and naming the components required. Children will be generating ideas through sketching and discussion. Modelling ideas through prototypes., showing an understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'.</p>

	Future Learning: See KS3/4 grid below.	Future Learning: See KS3/4 grid below.	Future Learning: See KS3/4 grid below.
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Great Ponton's Curriculum Overview – DT – Cycle B						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS		Kapow: Food - A balanced diet		Kapow: Mechanisms - Making a moving monster		Kapow: Textiles – Pouches
Y1/2		Kapow: Food - A balanced diet		Kapow: Mechanisms - Making a moving monster		Kapow: Textiles – Pouches
Y3/4		KAPOW – Structures. – Constructing a castle (Stonehenge).		KAPOW: Food Eating Seasonally.		KAPOW: Mechanical Systems: Making a slingshot car.
Y5/6		Automata toy-mechanisms		Structure: Bridges		Food: Come dine with me

Great Ponton's Curriculum Overview – DT – Cycle B			
	Autumn	Spring	Summer
EYFS	Enquiry Question: What foods are healthy?	Enquiry Question: How to make a moving object?	Enquiry Question: How to make a pouch?
	Intent:	Intent:	Intent:

	<p>Children will explore fruits and vegetables and the differences between them. Children will begin to safely use tools to prepare ingredients.</p>	<p>Children will know how to build a construction/ sculpture using a variety of objects from observation and/or imagination e.g. recycled, natural and manmade materials. Children will be able to consider and think about their final outcome before starting the making process.</p>	<p>Children can separate and join materials in a variety of ways. Children can separate materials by cutting, ripping and tearing. Children can join materials together by gluing, taping and wrapping. Children know that sometimes have to try materials out to see which will be the best for our outcome.</p>
	<p>Future Learning: Children will begin to design packaging for the different foods.</p>	<p>Future Learning: Children will be designing a moving object for a given audience. Children will be designing a structure that uses wheels, axles and axle holders, that when combined, will allow the wheels to move.</p>	<p>Future Learning: Children will be cutting fabric neatly with scissors. Using joining methods to decorate object. Children will be sequencing steps for construction. Children will be selecting and cutting fabrics for sewing.</p>
Year 1/2	<p>Enquiry Question: What is a balanced diet?</p>	<p>Enquiry Question: How to make a moving toy?</p>	<p>Enquiry Question: How to make a pouch?</p>
	<p>Builds on: Children will begin to know that 'diet' means the food and drink that a person or animal usually eats. Children will begin to understand what makes a balanced diet. Children will know where to find the nutritional information on packaging.</p>	<p>Builds on: Children will be able to create clearly labelled drawings that illustrate movement. Selecting a suitable linkage system to produce the desired motion. Children will begin designing a wheel, and designing a moving object for a specific audience in accordance with a design criteria.</p>	<p>Builds on: Children will be able to use a template to create a design. Designing a pouch. Children will begin cutting fabric neatly with scissors. Using joining methods to decorate a pouch. Children will begin sequencing steps for construction. Selecting and cutting fabrics for sewing. Children will be able to begin decorating a pouch using fabric glue or running stitch. Children will be able to thread a needle. Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.</p>
	<p>Future Learning: Children will begin creating a healthy and nutritious recipe.</p>	<p>Future Learning: Children will begin creating a pneumatic system to create a desired motion.</p>	<p>Future Learning: Children will begin to be able to follow a design criteria.</p>

Year 3/4	Enquiry Question: How to create a good structure?	Enquiry Question: Where does food come from?	Enquiry Question: How to use a mechanism?
	Builds on: Children will be designing with key features to appeal to a specific person/purpose. Drawing and labelling design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours. Children will be designing a structure that is aesthetically pleasing and selecting materials to create a desired effect.	Builds on: Children will know that not all fruits and vegetables can be grown in the UK. To know that climate affects food growth. To know that vegetables and fruit grow in certain seasons. Children will know that imported food is food which has been brought into the country. To know that exported food is food which has been sent to another country. To understand that imported foods travel from far away and this can negatively impact the environment.	Builds on: Children will be designing a toy which uses a pneumatic system. Developing design criteria from a design brief. Generating ideas using thumbnail sketches and exploded diagrams. Children will be creating a pneumatic system to create a desired motion. Building secure housing for a pneumatic system. Children will be exploring using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy.
	Future Learning: Children will begin building frame structures.	Future Learning: Children will begin to understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork).	Future Learning: Children will be able to begin selecting materials due to their functional and aesthetic characteristics.
Year 5/6	Enquiry Question: What is an automata design?	Enquiry Question: What design works best for a bridge?	Enquiry Question: What makes a good meal?
	Builds on: Children will begin designing which uses a mixture of structures and mechanisms. Naming each mechanism, input and output accurately. Children will be experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. Understanding how linkages change the	Builds on: Children will be designing a stable structure that is able to support weight. Creating a frame structure with a focus on triangulation. Children will be making a range of different shaped beam bridges. Using triangles to create truss bridges that span a given distance and support a load. Children will begin building a wooden bridge structure. Independently measuring and marking wood accurately.	Builds on: Children will be able to understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. Children will be writing an amended method for a recipe to incorporate the relevant changes to ingredients. Children will design appealing packaging to reflect a recipe.

	direction of a force. Making things move at the same time.		Children will be able to write a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken.
	Future Learning: See KS3/4 grid below.	Future Learning: See KS3/4 grid below.	Future Learning: See KS3/4 grid below.

KS3/4 National Curriculum Objectives.

Design	<p>To use research and exploration, such as the study of different cultures, to identify and understand user needs.</p> <p>To identify and solve their own design problems and understand how to reformulate problems given to them.</p> <p>To develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.</p> <p>To use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses.</p> <p>To develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p>
Make	<p>To select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.</p> <p>To select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.</p>
Evaluate	<p>To analyse the work of past and present professionals and others to develop and broaden their understanding.</p> <p>To investigate new and emerging technologies.</p> <p>To test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.</p> <p>To understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.</p>
Technical Knowledge	<p>To understand and use the properties of materials and the performance of structural elements to achieve functioning solutions .</p> <p>To understand how more advanced mechanical systems used in their products enable changes in movement and force.</p> <p>To understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs].</p> <p>To apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].</p>
Cooking and Nutrition	<p>To understand and apply the principles of nutrition and health.</p> <p>To cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.</p>

	<p>To become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes].</p>
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	<p>To understand the source, seasonality and characteristics of a broad range of ingredients.</p>
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