Beechwood JUNIOR SCHOOL
Together we can!

Design and Technology Curriculum Led by: Ian Scott

Why do we teach DT?	How is DT sequenced within our school?	What will our children learn?
• We teach DT at Beechwood to help our children to learn how to be imaginative, curious and to explore in a range of different contexts and practical ways. • To help children to develop the knowledge they need to draw upon to be able to solve a range of problems and to design a product for a purpose. • It links together skills learned in subjects such as maths, science, computing and art. • It helps our children to become risk takers in a safe environment and life skills such as sewing and how to cook healthy food choices. • In DT we know that the knowledge and skills they learn will help them to become creative, resilient and self-reliant members of the community.	• Within Beechwood DT is sequenced across the Key Stage with each unit of work building on prior learning within that year group but also within the year groups before. This includes looking at the KS1 curriculum. • The DT in each year group is split up into 3 ½ term units and DT is alternated with Art. This is to allow for more depth in the learning through longer lessons and more chances to retrieve and revisit learning across the year and Key Stage. • The curriculum is split into Textiles, Food Technology and Structures. • Each unit also follows a cycle which incorporates different ways of learning procedural knowledge, generating ideas, designing, making and evaluating a product. • We have used the DT association to support our sequencing.	• How to develop and refine a design for a particular purpose or person. • How to share, model and communicate their ideas through discussions. • How to present ideas in different ways including through different drawings and using CAD. • How to use a range of different tools and equipment such as tools for cutting, joining, chopping and mixing. How to evaluate their own product and reflect on how to improve for next time. • To understand how DT relates to the wider world and study the work of engineers and chefs. • To understand what a healthy and varied diet might be and how to make different savoury dishes.

Concept Map

Concepts	Components
Designers and Inventors	• Who were they? (Biographical knowledge) • Characteristics • Techniques
Generating Ideas	• Scrapbooking • Looking and talking • Experimenting • Making a proposal
Making	Materials and Techniques in… • Structures and Mechanisms • Textiles • Electronic/ Electronical Devices • Food Technology
Evaluating	• Use of techniques • The product • Identify similarities and differences to others' work • Reflecting

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Concept	Dual Coding Symbol	Concept Definition
Designers and Inventors		Learning about designers and inventors helps show us how creativity and problem-solving shape the world around us. By exploring **who these people were/are**, their **characteristics**, and the **techniques** they used, we begin to understand the design process and develop skills such as curiosity, resilience, and innovation. This knowledge inspires us to think critically, appreciate the impact of design on everyday life, and apply these principles in our own projects.
Generating ideas		Because every design starts with an **idea**! Learning how to **scrapbook, look and talk, experiment, and make proposals** helps us to **think creatively; explore different possibilities and plan and share our own designs.** It's all about turning **imagination into amazing creations**!
Making		Making is all about turning ideas into real things! We learn to use different **materials and techniques.** This helps us **develop practical skills**, understand how things work, and create products that solve real problems.
Evaluation		Evaluating helps us **think about what worked well and what could be better**. We look at: the quality of the product, what is **similar or different** compared to others' work and how to **reflect and improve** next time This makes us better designers because we learn from every project!

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2025-2026	Autumn	Spring	Summer
Year 3	Structural and Mechanical Systems Product: Class moving story book Inventor: Jan Pienkowski	Food Technology Product: Healthy Wraps and dips Chef: Joe Wicks	Textiles Product: Bookmark Designer: Ebenezer Butterick
Year 4	Textiles with Electrics Product: Christmas decoration with an electrical LED light and circuit contained within Designer: Cath Kidston	Food Technology Product: Making a pizza healthier Chef: Jamie Oliver	Shell structures with pneumatics Product: A pneumatic toy using CAD Inventor: Otto Von Gueriche
Year 5	Food Technology Product: Soup Chef: Adejoké Bakare	Structure and Mechanical Systems: CAM Toy Related designers – Ismail al-Jazari	Structure and mechanical systems Product: bridges Inventor: Isambard Kingdom Brunel
Year 6	Food Technology Product: Scones that meet different dietary requirements and restrictions Chef: Mary Berry	Structures with Electrics Products: Doodlers Inventor: George Devol (animation)	Textiles Product: Make do and Mend Designer: Selina Sanders

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Year 3	Sticky Knowledge
Autumn	• I can name an important inventor who was important to structural and mechanical systems. • I can identify different mechanisms such as flaps, sliders and levers in different contexts. • I can analyse a variety of products which have levers and linking mechanisms. • I can experiment to help me develop my ideas and create a final design. • I can communicate what my idea is and explain how it will work to another person. • I can select and use appropriate tools with accuracy including cutting, shaping and joining. • I can demonstrate how to use finishing techniques to make my final product look exciting. • I can evaluate my product for its appearance, durability and whether it is easy to use.
Spring	• I can begin to explain about a chef who promotes healthy eating. • I can explain what healthy and unhealthy is • I can prepare and safely process foods by cutting and preparing the area I am using • I know the bridge method to cut safely • I can design and make a healthy food. • I can evaluate the product that I made and make improvements upon how to improve.
Summer	• I can explain a famous designer and the impact they had: Ebernezer Butterick • I can thread needles independently • I can use a running stitch and an overstitch • I can produce a product plan for a purpose. • I can follow a plan and create a product. • I can evaluate a product for both appearance and purpose.

Year 4	Sticky Knowledge
Autumn	• I know what is needed to make an electrical circuit • I know explain what a LED is and that breaks in a circuit will stop it from working. • I know that a battery contains stored electricity and can be used to power products • I can create a working LED circuit using pressure as a switch • I can persevere and adapt work when original ideas do not work. • I know which materials are likely to give the best outcome. • I can evaluate a product to suggest improvements if it was to be made again.
Spring	• I can explain what a balanced diet is and why it is important to have a balanced diet.

	• I can explain the difference between savoury and sweet. • I can research recipes and understand how to read if they are healthy or not. • I can suggest 'swaps' to make an unhealthy food healthier. • I can name some foods which are grown, reared, caught and processed in the UK. • I can explain how chefs such as Jamie Oliver have campaigned to make food for children healthier. • I can plan my 'swaps' recipe and prepare it safely using the correct equipment. • I can ask questions to evaluate the taste, appearance and texture of my food. • I can begin to change my recipe based on feedback. • I can read a food label and explain whether it is healthy choice or not.
Summer	• I can name a pneumatic inventor and how their discoveries have impacted pneumatics today. • I can explain what a pneumatic system is and that it is part of a mechanism. • I can demonstrate how a pneumatic system forces air to create movement. • I can name different equipment used to make a pneumatic system. • I can communicate my design ideas using sketching (exploded diagram) and notes. • I can create a product that meets a set design brief. • I can create a shell product using CAD. • I can accurately measure my materials to minimise wastage. • I can evaluate and improve my design.

Year 5	Sticky Knowledge
Autumn	I can explain what is meant by seasonality and give examples of different fruit and vegetables that are in season in the UK. I can name some foods which are grown, reared, caught and processed in the UK. I can explain who Adejoké Bakare is and why she is famous. I can give examples of dishes that can be cooked seasonally and use Adejoké Bakare's recipes as inspiration. I can generate a range of ideas for balanced seasonal soup recipes. I can develop and refine a recipe. I can chop and prepare different vegetables. I can explain what is meant by seasoning food and have experimented with using different seasonings. I can use mixers appropriately and safely. I can safely use a hob and manage hot pans. I can evaluate a range of products based on taste, appearance, texture and smell.

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Spring	I can name a manufacturer who develops moveable designed toys. I can explain what movement is and give examples of different movements. I can explain that a mechanical system has an input, process and an output. I can give examples of different cams and the movements they make. I can create a series of designs based on internet research. I can create a design specification based on my thinking. I can communicate my ideas using drawings from different angles. I can select a range of appropriate tools for cutting and joining wood and cardboard and use these safely. I can use feedback from others to help suggest improvements to my work.
Summer	I can explain who Isambard Kingdom Brunel was and why he is important. I can explain what is meant by civil engineering and give examples of how they help society. I can explain what is meant by dead and live load. I can explain why compression, tension and bending are important to consider with bridges. I can identify beam, arch and truss bridges. I can suggest which type of bridge could be build to solve a problem and why. I can identify stronger and weaker supporting shapes. I can recognise that supporting shapes can increase the strength of a bridge so it can hold more weight. I can follow instructions to create a bridge prototype. I can measure my materials accurately I can saw beams to an accurate correct size. I can join my pieces together safely using hot glue. I can smooth down rough edges with sandpaper. I can evaluate the effectiveness of my bridge against a set of criteria.

Year 6	Sticky Knowledge
Autumn	I know how to adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients I can suggest recipe alterations for a purpose I can demonstrate how to work safely and hygienically when handling food I can follow a recipe, including using the correct quantities of each ingredient

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	I can evaluate different foods, considering: taste, smell, texture and origin of the food group I can give examples of how to stop cross contamination I can explain what different types of dietary needs there are
Spring	I can name an inventor who was I can analyse a product to work out how the different components work to make the product work. I can name and explain how an electrical circuit works within a product. I can explain how to ensure an electrical circuit is used safely in a product. I can use an exploded diagram to explain how a product works. I can explain which parts of a product affects its function. I can explain who this product's target user might be. I can assemble a product and decide how best to make it. I can create instructions about how to make a product for someone else to follow. I can alter the way a product functions by tinkering with its configuration.
Summer	I can give examples of how different designers and brands have upcycled items of clothing. I can create different designs that use the materials I have been given. I can use exploded diagrams to show different levels of detail with my design. I can select or reuse a fastening for a purpose. I can create a paper prototype of my design to turn into pattern pieces. I can accurately cut my pattern pieces. I can use a range of appropriate stitches to hold my design together securely. I can add decorative detail to make my product appealing. I can evaluate my product for purpose and visual appeal.

Structure and mechanism	Year 2	Year 3	Year 4	Year 5	Year 6
Design	• Designing as a class	• Developing design criteria from a design brief	• Designing a product and personalising it for an individual, based on their need.	Designing a product and experiment with different moving parts to create the desired movement of the product.	· Giving careful consideration to how the structures will be used
	• Generating and communicating ideas using sketching and modelling	• Learning that different types of drawings are used	• Generating ideas using thumbnail sketches and exploded diagrams	Understanding and drawing cross-sectional diagrams to	

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		in design to explain ideas clearly		show the inner-workings of the automata	
	• Learning about different types of structures, found in the natural world and in everyday objects	• Designing a pop-up product which uses a mixture of structures and mechanisms	• Designing a product which uses a pneumatic system	Understanding how linkages change the direction of a force	
		• Drawing and labelling your product using 2D shapes,	• Designing and/or decorating on CAD software labelling: the 3D shapes that will create the features.	• Drawing a net to create a structure from	
Make	• Cutting and assembling components neatly	• Manipulating materials to create different effects by cutting, creasing, folding, weaving	• Measuring, marking, cutting and assembling with increasing accuracy	• Measuring, marking and checking the accuracy dowel pieces required accurately using a ruler and scissors	• Measuring, marking and cutting wood to create a range of structures
	• Selecting materials according to their characteristics	• Selecting materials due to their functional and aesthetic characteristics	• Explaining why selecting appropriating materials is an important part of the design process	• Using the correct techniques to saws safely	• Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set
	• Following a design brief	• Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result	• Making a model based on a chosen design	• Following a design brief to make a product, neatly and with focus on accuracy	•To select a range of materials to reinforce and add decoration to structures using a variety of stitches.
	• Exploring the features of structures	• Comparing the stability of different shapes	Constructing a range of 3D geometric shapes using nets	• Using a range of materials to reinforce and add decoration to structures	• Applying points of improvements
		• Testing the strength of own structures	• Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy	•Testing and adapting a design	• Describing changes they would make/do if they were to do the project again
Evaluation	• Evaluating own designs against design criteria	• Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design	• Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of	• Evaluating the work of others and receiving feedback on own work and suggesting points for improvement for own product.	• Evaluating the work of others and receiving feedback on own work and improving a design plan based on peer evaluation

			workmanship on performance		
		• Suggesting points for modification of the individual designs	• Describing what characteristics of a design and construction made it the most effective		
		• Testing and modifying the outcome, suggesting improvements	• Considering effective and ineffective designs	• Adapting and improving own product by identifying points to improve.	• Testing and adapting a design to improve it as it is developed
Textiles	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Using a template to create a design	• Designing and making a template applying individual design criteria	• Writing design criteria for a product, articulating decisions made	· Designing a product considering the main component shapes required and creating an appropriate template	• Designing a product in accordance to specification linked to set of design criteria to fit a specific theme
Make	• Selecting and cutting fabrics for sewing	• Selecting and cutting fabrics with ease using fabric scissors	• Measuring, marking and cutting fabric using a paper template	· • Measuring, marking and cutting fabric accurately and independently	• Marking and cutting fabric accurately, in accordance with a design
	• Cutting fabric neatly with scissors	• Completing design ideas with sewing the edges using over stitch as well as running stitch.	Applying a blanket stitch to join fabric	• Using applique to attach pieces of fabric decoration	• Attaching objects using thread and adding a secure fastening
	• Sequencing steps for construction	• Following design criteria to create your product	• Making and testing a paper template with accuracy and in keeping with the design criteria	· Applying blanket stitch so the space between the stitches are even and regular	• Sewing accurately with even regularity of stitches
	• Decorate using fabric glue or running stitch			• Creating strong and secure blanket stitches when joining fabric	• Sewing a strong running stitch, making small, neat stitches and following the edge
				• Incorporating fastening to a design	
Evaluation	• Evaluating the quality of the stitching on others' work	• Evaluating an end product and thinking of other ways in which to create similar items	• Testing and evaluating an end product against the original design criteria	• Testing and evaluating an end product and giving point for further improvements	• Evaluating work continually as it is created

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Cooking and nutrition	Year 2	Year 3	Year 4	Year 5	Year 6
Design	• Designing a healthy snack based on a food combination which work well together	• Creating a healthy and nutritious snack using seasonal ingredients, considering the taste, texture, smell and appearance of the dish.	• Designing a pizza within a given budget, drawing upon previous taste testing	• Writing a recipe, explaining the key steps, method and ingredients	• Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients
			• Cooking safely, following basic hygiene rules	• Including facts and drawings from research undertaken	• Writing an amended method for a recipe
Make	• Slicing food safely using the bridge or claw grip	•Preparing themselves and a work space to prepare food safely in, learning the basic rules to avoid food contamination	• Using equipment safely, including knives and an oven.	• Knowing how to avoid cross-contamination	• Working safely and hygienically with independence
		• Cutting and preparing vegetables safely using knives, graters and peelers	• Following a baking recipe	• Using equipment safely, including knives, hot pans and hobs	• Following a recipe, including using the correct quantities of each ingredient
	• Describing the information that should be included on a label	• Establishing and using design criteria to help test and review dishes and making suggestions points for improvement	• Following the instructions within a recipe	• Identifying and describing healthy benefits of food groups	• Adapting a recipe based on research
	• Describing the taste, texture and smell of fruit and vegetables		• Describing the impact of the budget on the selection of ingredients	• Identifying the nutritional differences between different products and recipes	• Taste testing and scoring final products
Evaluation	• Taste testing food combinations and final products	Evaluating safe use of knives	• Evaluating a recipe, considering: taste, smell, texture and appearance	Evaluating safe use of hot pans and hobs and hygiene	• Evaluating a recipe, considering: taste, smell, texture and origin of the food group
		Suggesting improvements	• Evaluating and comparing a range of products		• Suggesting and writing up points of improvements in productions
Electrics			Year 4		Year 6
Make			*use simple circuit in product		*use different types of circuit in product

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	Not studied in KS1	*learn about how to program a computer to control product.		* think of ways in which adding a circuit would improve product
				* program a computer to monitor changes in environment and control product