



Design and Technology (DT) at Breachwood Green School

At Breachwood Green School the Design and Technology curriculum intention is to ensure children progressively build the key knowledge and skills within the areas of design, making, evaluating, technical knowledge and food and nutrition as required in the National Curriculum.

Children will work developing, planning and communicating ideas through research and design; working with tools, equipment, materials and components to make quality products; and evaluating processes and products. Our aim is to inspire children through a broad range of practical experiences to create designs in a variety of real life contexts. Children are given the chance to create products that they can see, touch and taste for themselves and experience a feeling of pride in doing so. Opportunities are provided for children to evaluate key events and individuals who have helped shape the world, showing the real impact of design and technology on the wider environment. We feel it is vital to nurture children's creativity; encouraging them to problem solve and innovate, take risks and learn from mistakes to support them in becoming resourceful, enterprising and capable citizens.



Progression in DT

The table shows when concepts should be secured. It is very important, therefore, that the content in earlier years be **revisited** in subsequent years to consolidate knowledge and build on pupils' understanding. Teachers should also go beyond the content set out here if they feel it is appropriate.

	EYFS	KS1	Lower KS2	UPKS2
Design	<p>Pupils can:</p> <ul style="list-style-type: none"> • explore different materials freely, in order to develop their ideas about how to use them and what to make. • develop their own ideas and then decide which materials to use to express them. • share their creations, explaining the process they have used. • use their imagination as they consider what they can do with different materials. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • research and develop simple design criteria to create purposeful, functional, appealing products for themselves and others • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology (purplemash 2DIY) • use the basic principles of a healthy and varied diet to design and prepare dishes 	<p>Pupils can:</p> <ul style="list-style-type: none"> • research products available on the market and use these to develop simple design criteria. • develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups; • communicate their ideas through discussion, annotated sketches, cross-sectional designs and computer-aided-design (where appropriate) • when designing, explore initial ideas before coming up with a final design using prototypes where appropriate • learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • use research of existing products to inform their own design criteria to develop innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups; • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design (where applicable) • design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user • understand how key events and individuals in design and technology have helped shape the world

	EYFS	KS1	Lower KS2	UPKS2
Make	<p>Pupils can:</p> <ul style="list-style-type: none"> explore with support a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. join different materials using pva glue and tape; make simple models which express their ideas. tear and cut paper and card; cut along lines, straight and curved using scissors curl paper use a simple hole punch begin to use a template with support explore colour and colour-mixing. 	<p>Pupils can:</p> <ul style="list-style-type: none"> select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. select from and use a range of tools and equipment to perform practical tasks for example, cutting, shaping, joining and finishing e.g. scissors, hole punch, ruler, safe knife, peeler, grater, pva glue, running stitch, tape. follow a simple plan or recipe begin to use simple finishing techniques to improve the appearance of their product; fold, tear and cut paper and card; roll paper to create tubes; cut along lines, straight and curved; use a hole punch use templates and create simple mock ups of their ideas in card and paper see glue gun used by an adult 	<p>Pupils can:</p> <ul style="list-style-type: none"> select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties with growing confidence, carefully select from and use a wider range of tools and equipment to perform practical tasks accurately e.g. cutting, shaping, joining, finishing e.g. join fabrics using appropriate stitches; place the main stages of making in a systematic order begin to select and use different finishing techniques to improve the appearance of a product measure, mark out, cut, score and assemble components with more accuracy e.g. cut slots in paper/card and internal shapes; tape, pin, cut and join fabric with some accuracy; cut around a template and use a running stitch to create a hem make prototypes, templates and mock ups of their ideas e.g. using card, paper or j cloths use glue gun with close supervision (one to one) 	<p>Pupils can:</p> <ul style="list-style-type: none"> confidently select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. confidently select from and use a wider range of tools and equipment to perform practical tasks accurately and safely e.g. cutting, shaping, joining and finishing independently plan by suggesting what to do next; create step-by-step plans as a guide to making improve the appearance and functionality of a product using a range of finishing techniques including fastenings e.g. hook and eye, button cut a range of materials with precision and accuracy developing their own prototypes, templates and mock ups e.g. using card, paper, j cloths. construct products using permanent, temporary and moving joining techniques strengthen and join materials using temporary, fixed and moving joins e.g. running stitch, over sewing and back stitch; build a framework; work safely and accurately with a range of simple tools use glue gun with supervision
Evaluate	<p>Pupils can:</p> <ul style="list-style-type: none"> return to and build on their previous learning, refining ideas and developing their ability to represent them. 	<p>Pupils can:</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate products against their simple design criteria begin to suggest ways they would improve their product 	<p>Pupils can:</p> <ul style="list-style-type: none"> begin to identify individuals in design and technology who have helped create innovative products. research existing products on the market and compare start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work evaluate product against original design criteria 	<p>Pupils can:</p> <ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world. investigate and analyse a range of competitive products on the market as they work, start to identify possible changes they might make to refine their existing design; evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

	EYFS	KS1	Lower KS2	UPKS2
Technical Knowledge	<p>Pupils can:</p> <ul style="list-style-type: none"> • explore different materials freely, in order to develop their ideas about how to use them and what to make. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • build simple structures, exploring how they can be made stronger, stiffer and more stable; • talk about and start to understand the simple working characteristics of materials and components • explore and create products using mechanisms e.g. wheels and axels; linkages, hinges and simple pop ups 	<p>Pupils can:</p> <ul style="list-style-type: none"> • understand how to strengthen, stiffen and reinforce structures; create a net, shell or frame structure, strengthen frames with diagonal struts and make structures more stable by giving them a wide base • understand and use electrical systems in their products e.g. series circuits incorporating switches, bulbs, buzzers and motors. • explain how mechanical systems such as levers and linkages create movement; • start to understand and use mechanical systems in their products to create movement e.g. levers, linkages, complex pop-ups 	<p>Pupils can:</p> <ul style="list-style-type: none"> • know how to strengthen, stiffen and reinforce more complex structures e.g. marble run • know how mechanical systems and pneumatic systems, create movement and use them in their product to make it move • apply their understanding of computing to program, monitor and control a product. • understand that materials have both functional properties and aesthetic qualities;
Cooking and Nutrition	<p>Pupils can:</p> <ul style="list-style-type: none"> • eat a healthy range of foodstuffs and begin to understand the need for a variety of foods to keep healthy • begin to group different fruits and vegetables • understand the need for a variety of foods in a diet • begin to explore the 5 senses linked to Knowledge and Understanding of the World • use a knife to cut and a spoon to mix when preparing food and ingredients. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • understand where food comes from and understand the need for a variety of foods in a diet • group familiar food products e.g. fruit and vegetables; • use the basic principles of a healthy and varied diet to prepare dishes • begin to develop a food vocabulary using taste, smell, texture and feel • cut, peel, grate and chop a range of ingredients with support • know how to prepare simple dishes safely and hygienically, without using a heat source; • measure and weigh ingredients using non-statutory measures e.g. spoons, cups. 	<p>Pupils can:</p> <ul style="list-style-type: none"> • explain what seasonality means and know when different fruit and vegetables are in season in the UK • know how some different foods are grown e.g. herbs, tomatoes and strawberries • Begin to develop sensory vocabulary/ knowledge by looking at existing products and using, smell, taste, texture and feel to analyse them • begin to select from and use a wider range of tools and equipment to prepare and cook a variety of savoury dishes • join, prepare and combine ingredients using appropriate cooking utensils e.g. cutting, chopping, mixing, spreading, grating, peeling, kneading, • measure and weigh ingredients using statutory measures e.g. gm and ml. • explain that a healthy diet is made up of a variety and balance of different foods and drink and be able to apply these principles when planning and preparing dishes • start to independently follow a recipe • follow hygiene procedures 	<p>Pupils can:</p> <ul style="list-style-type: none"> • understand seasonality and know when and where some foods are grown in the UK, Europe and the wider world e.g. tomatoes, cucumber • explain where, when and how a variety of ingredients are reared, caught and processed into ingredients that can be eaten or used in cooking • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques; cut and shape ingredients independently choosing appropriate tools/equipment e.g. grating, chopping • use a range of techniques to join and combine ingredients appropriately e.g. beating, kneading, rubbing in • select ingredients according to functional and aesthetic qualities and prepare food for a purpose • explain that foods contain different substances, such as protein, that are needed for a healthy diet and be able to apply these principles when planning and preparing dishes • mainly independently follow a recipe and weigh and measure ingredients accurately using standard measures • work safely and hygienically

Design & Technology Projects - 2 Year Cycle

Cycle A	Autumn	Spring	Summer
KS1	<p style="text-align: center;">Sensational Salads</p> <p>Key Skills: Begin to develop a food vocabulary using taste, smell, texture and feel; group familiar food products e.g. fruit and vegetables; cut, peel, grate and chop a range of ingredients with support; understand the need for a variety of foods in a diet; know where food comes from; use the basic principles of a healthy and varied diet to prepare dishes; know how to prepare simple dishes safely and hygienically, without using a heat source; evaluate products against their simple design criteria</p>	<p style="text-align: center;">Vehicles</p> <p>Key Skills: design purposeful, functional, appealing products for themselves and other users based on design criteria; explore and create products using mechanisms e.g. wheels and axles; select from and use a range of tools and equipment to perform practical tasks e.g. cut dowel using a hacksaw; select from and use a wide range of materials and components, including construction materials according to their characteristics e.g. wheels and axles; join appropriately for different materials and situations e.g. glue, tape; see glue gun used by an adult; begin to use ICT to create models. (Purplemash 2DIY); evaluate products against their simple design criteria</p>	<p style="text-align: center;">Moving Pictures</p> <p>Key Skills: design purposeful, functional, appealing products for themselves and other users based on design criteria; fold, tear and cut paper and card; roll paper to create tubes; cut along lines, straight and curved; use a hole punch; use linkages, hinges and simple pop ups; use and begin to make templates and mock ups of their ideas in card and paper; Investigate different methods of joining materials which are temporary, fixed and moving; evaluate products against their simple design criteria</p>
LKS2	<p style="text-align: center;">Battery Operated Lights/Torches</p> <p>Key Skills: use research to develop design criteria; investigate and analyse a range of existing products; develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups; understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]; create a shell or frame structure; strengthen frames with diagonal struts; create nets; evaluate product against original design criteria</p>	<p style="text-align: center;">Moving Monsters</p> <p>Key Skills: use research to develop design criteria; apply their understanding of how to strengthen, stiffen and reinforce more complex structures; create nets; with growing independence measure, mark out, cut, score and assemble components with more accuracy; cut slots in paper/card and cut internal shapes; create levers and linkages; use linkages to make movement larger or more varied; use and explore complex pop ups;; evaluate product against original design criteria</p>	<p style="text-align: center;">Sandwich Snacks</p> <p>Key Skills: use research to develop design criteria; begin to develop sensory knowledge by looking at existing products using, smell, taste, texture and feel; understand and apply principles of a healthy diet; join and combine a range of ingredients; begin to select from and use a wider range of tools and equipment e.g. cutting, chopping, grating, peeling; work safely and hygienically; measure and weigh ingredients using statutory measures.; evaluate product against original design criteria</p>
UKS2	<p style="text-align: center;">Global Food</p> <p>Key Skills: know where and how a variety of foods are grown in the world; begin to develop a sensory food vocabulary; use research to develop design criteria taking into account the properties of the ingredients and sensory characteristics; understand and apply the principles of a healthy diet when designing a product; weigh and measure ingredients accurately using scales; cut and shape ingredients independently choosing appropriate tools/equipment e.g. grating, chopping; join and combine food ingredients appropriately e.g. beating, rubbing in; mainly independently follow a recipe; work safely and hygienically</p>	<p style="text-align: center;">Programming Adventures</p> <p>Key skills: use research to develop design criteria for products functional, innovative and fit for purpose aimed at individuals or groups ; apply their understanding of computing to program, monitor and control their products; generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design; select and use a wider range of materials and components according to their functional properties and aesthetic qualities; evaluate product against original design criteria taking into account the views of others.</p>	<p style="text-align: center;">Automata Animals</p> <p>Key Skills: use research to develop design criteria for products functional, innovative and fit for purpose aimed at individuals or groups; know how simple cam mechanisms work and use mechanical systems in their products to make a product move; select materials according to their functional properties; build a framework, accurately using a wider range of tools and equipment; evaluate ideas and products against their design criteria and consider the views of others; evaluate product against original design criteria taking into account the views of others.</p>

Design & Technology Projects - 2 Year Cycle

Cycle B	Autumn	Spring	Summer
KS1	<p align="center">Kites</p> <p>Key Skills: research and develop simple design criteria; fold, tear and cut paper and card; cut along lines, straight and curved; investigate strengthening sheet materials and joining materials using temporary, fixed and moving joins e.g. glue, tape; use a template; begin to use simple finishing techniques to improve the appearance of their product; evaluate products against their simple design criteria</p>	<p align="center">Puppets</p> <p>Key Skills: research and develop simple design criteria; select from and use a wide range of materials including construction textiles according to their characteristics; join fabrics using running stitch; decorate fabrics with buttons, beads, sequins, braids, ribbons and fix using glue or tape; make templates and mock ups of their ideas in card and paper; evaluate products against their simple design criteria</p>	<p align="center">Teddy Bears Picnic</p> <p>Key Skills: begin to develop a food vocabulary using taste, smell, texture and touch; group familiar food products e.g. fruit and vegetables; research and develop simple design criteria; cut, peel, grate, and chop a range of ingredient with support; begin to work safely and hygienically; use the basic principles of a healthy and varied diet to design and prepare dishes; measure and weigh food items, using non-statutory measures e.g. spoons, cups; know where food comes from; evaluate products against their simple design criteria</p>
LKS2	<p align="center">Bread</p> <p>Key Skills: use research to develop design criteria; begin to develop sensory vocabulary/knowledge using, smell, taste, texture and feel; analyse the taste, texture, smell and appearance of a range of different breads; follow instructions; join and combine a range of ingredients to make a product by mixing and kneading; work safely and hygienically; measure and weigh ingredients using scales (gm/kg); evaluate product against original design criteria</p>	<p align="center">Photograph Frames</p> <p>Key Skills: use research to develop design criteria; strengthen, stiffen and reinforce structures; measure, mark out, cut, score and assemble components with more accuracy; make structures more stable by giving them a wide base; start to work safely and accurately with a range of simple tools; start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work; evaluate product against original design criteria</p>	<p align="center">Cushions</p> <p>• Key Skills: use research to develop design criteria; cut around a template and use a running stitch to create a hem ; join fabrics using appropriate stitches e.g. running stitch, whipstitch; prototype a product e.g. j cloth or binca; Begin to select and use different finishing techniques to improve the appearance of a product; evaluate product against original design criteria</p>
UKS2	<p align="center">Felt Mobile Cases</p> <p>Key Skills: use research to develop design criteria for products functional, innovative and fit for purpose aimed at individuals or groups ; generate a range of design ideas and clearly communicate final design; begin to create simple patterns and understand the need for patterns; make a prototype or template; explore different types of stitches (running, backstitch, whipstitch, catch stitch, hemming stitch); pin and tack fabric together; select decorative techniques and fastenings according to their functional properties and aesthetic qualities (hook and eye, button, ribbon); evaluate product against original design criteria taking into account the views of others.</p>	<p align="center">Super Seasonal Cooking</p> <p>Skills and Knowledge: explain what seasonality means and know when different fruit and vegetables are in season in the UK; explain where, when and how a variety of ingredients are reared, caught and processed; taste and evaluate seasonal foods; know the importance of protein in a varied diet; select ingredients according to functional and aesthetic qualities; use research to develop design criteria for products functional, innovative and fit for purpose aimed at individuals or groups ; generate, develop and communicate ideas through annotated sketches; refine recipe ideas and take feedback to improve a design; evaluate product against original design criteria taking into account the views of others..</p>	<p align="center">Marbulous Structures</p> <p>Skills and Knowledge: use research to develop design criteria for products functional, innovative and fit for purpose aimed at individuals or groups; Investigate and analyse a range of existing products with free standing structures; know how to strengthen, stiffen and reinforce more complex structures; select from and use a wider range of tools and equipment to cut, shape, join and finish; select materials and components according to their functional properties and aesthetic qualities; evaluate product against original design criteria taking into account the views of others.</p>