Bleak Hill Primary School Design and Technology Portfolio







Whole School Overview

	Autumn	Spring	Summer
Reception	Models Joining techniques experimenting	Creating houses Planning and evaluating	Towers and Bridges
Year 1	Materials/Structure	Textiles	Food Technology
	Moving Pictures	Fabric Faces	Picnic snack
Year 2	Food Technology	Textiles	Mechanism/Structure
	Dips and Dippers	Fabric Bunting	Tudor Houses
Year 3	Mechanism/Structure	Textiles	Food Technology
	Let's go fly a kite	Juggling Balls	Edible Garden
Year 4	Mechanism/Structure	Food Technology	Electronics
	Making Mini Greenhouses	American Food	Battery operated lights
Year 5	Food Technology	Mechanism/Structure	Textiles
	Bread	Marble Runs	Felt Phone Cases
Year 6	Mechanism/Structure	Food Technology	Electronics
	Building Bridges	Global Food	Fairground ride
Materials/ Structur	e Textiles	Food Technology	Electronics

Design and Technology Concepts

Concept	What does it mean and why do we learn it?
Textiles	The word textile commonly means woven or knitted Cloth. Lace, felt, and many other kinds of Cloth are considered textiles, too. Even nets, rope, and yarn may be called textiles. People use textiles to make Clothing, towels, sheets, table linens, Carpets, boat sails, flags, and many other things. The Children will explore a range of textiles and their potential uses depending on their features.
Mechanics	A mechanism modifies input forces and movement into a set of output forces and movement that the user desires. It is simply a system or structure of moving parts that perform some function.
Materials	A material is any substance that has a name, for example, Chalk, paper, wood, iron, air, water, Clay, plastic. Everything is made up of materials. When we want to make something, we need to pick the most suitable material for the job.
Structures	A structure can be defined as the arrangement of parts. Structures may rfer to buildings, machines and other man-made items as well as the structure of say a rock or mineral. Children at Bleak Hill will explore structures and learn how to make them stronger and more effective.
Food technology	Food technology allows for Cross-Curricular development of a range of skills including planning, designing, evaluating, preparing and Creating. Being able to learn about nutrition helps children to develop key life skills including food safety skills and other skills such as measuring using different units of measure.
Electronics	Referring to the branch of technology which sits within the branch of physics in science. Including using circuits and electrical parts. These components control the electricity. Electronics are taught from year 4 up as this is when the concept is first explored in science lessons.
	Key areas covered in every topic
Inspira t ion	Children will view a range of Current products. From these they will draw influence and try to stimulate ideas from them.
Design	A plan or drawing produced to show the look and function or workings of a building, garment or other object before it is made. The pupils at Bleak Hill will explore the concept of design in every topic, whether this be a drawing, an explanation of features, a recipe or a mini model.
Маке	This is where Children apply their knowledge, skills and understanding, to try and make a product. This Could be a first product, or after some evaluating, a final product.
Evalua te	To evaluate is the act or the result of evaluating a situation that requires Careful Consideration to determine the value, nature, Character, or quality of something.









Key Stage End Points	To use one-handed tools and equipment, e.g. makes snips in paper with child scissors. To understand that equipment and tools have to be used safely. To show an interest in technological toys with knobs or pulleys, or real objects. To show skill in making toys work by pressing parts or lifting flaps to achieve effects, such as sound, movements ornew images. use various construction materials. To beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. To join construction pieces together tobuild and balance. To realise that tools can be used for apurpose. To talk about a healthy range of foodstuffs and understands need for variety in food.	To use simple tools to effect changes to materials. To handle tools, objects, construction and malleable materials safely and with increasing control. To show understanding of the need for safety when tackling new challenges and consider and manage some risks. To show understanding of how to transport and store equipment safely. To practise some appropriate safety measures without direct supervision. To explore what happens when they mixcolours. To experiment to create different textures. To understand that different media can be combined to create new effects. To manipulate materials to achieve a planned effect. To construct with a purpose in mind, using a variety of resources. To use simple tools and techniques competently and appropriately.	To handle equipment and tools effectively, including pencils for writing. To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture,form and function. To use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. To talk about a healthy range of foodstuffsand understands need for variety in food.
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Towers and Bridges

Children created bridges and test how strong they are. Can you make it stronger.





Year 1	人utumn	Spring	Şummer
Theme	Moving Pictures	Our Fabric Faces	Picnic Snacks
	(Mechanics)	(Textiles)	(Food)
Key Stage 1 End Points	Create products using levers and wheels and winding mechanisms. Make products refining the design as work progresses. Use software to design. Explore how products have been created.	Demonstrate a range of joining techniques. Join textiles using a running stitch. Make products, refining the design as work progresses. Explore how products have been created.	Cut, peel or grate ingredients safely andhygienically. Measure or weigh using measuring cups. Design products that have a clear purposeand an intended user. Suggest improvements to existing designs.
Knowledge	Explore and use mechanisms such	Select a material and shape it.	Select from and use a range of
	as sliders, wheels, axels and levers	Join textiles using running stitch.	tools and equipment to perform
	in a product.	Select from and use a range of	practical tasks.
	Design purposeful, functional and	tools and equipment to perform	Follow a simple recipe.
	appealing products based on	practical tasks such as joining,	Prepare a tasty salad.
	design criteria.	using templates and cutting.	Prepare and make a healthy salad
	Design a working product thinking	Join fabrics together and attach	madefrom root vegetables.
	about who it is for and what it	different materials.	Use the basic principles of a healthy
	needs.	Cut on a line.	andvaried diet to design and prepare
	Generate, develop, model and	Select appropriate fabric materials	dishes. Understand where food
	communicate their ideas through	for a product from a range.	comes from in the context of
	talking, drawing, templates and	Design purposeful, functional,	looking at different fruits and
	mock-ups.	appealing products.	vegetables.
	Make decisions about a product	Create and follow a design criteria.	Explain where some food grows.
	design and use an annotated	Generate, develop, model and	Explore and evaluate existing
	sketch to show them.	communicate ideas through talking,	products.









Year 2	Autumn	Spring	Summer
Theme	Dips and Dippers Food	Bunting (Textiles/Computing)	Tudor Houses (Materials/Construction)
Key Stage 1 End Points	Measure or weigh using electronic scales. Assemble or cook ingredients. Make and design products Explore products that have been created.	Colour and decorate textiles using atechnique Cut materials safely using tools pro-vided. Shape textiles using templates. Model designs using software. Design products that have a clear purpose Explore objects and designs	Measure and mark out to the nearestcentimetre. Demonstrate cutting and shaping techniques Demonstrate a range of cutting andshaping techniques Design products that have a clear purpose an intended user. Explore objects and designs to identifylikes and dislikes of the designs.
Knowledge	 Select and use a range of tools and equipment to perform practical tasks. Measure or weigh using electronic scales. Make products following a design or plan. Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate ideas through talking and drawings. 	Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping and finishing) in the context of cutting a template and using it to shape a piece of fabric. Use a paper template to help cut out a fabric shape. Generate, develop, model and communicate ideas through talking, drawing, templates, mock-ups and, where appropriate, information and	Safely perform practical tasks such as cutting and joining. Select from and use a range of tools and equipment to perform practical tasks. Demonstrate a range of cutting and shaping techniques Design, make and evaluate a musical instrument. Use materials to make a musical instrument. Decorate a product to provide an appropriate finish.









Year 3	Autumn	Spring	Summer
Theme	Let's Go Fly a Kite (Materials/Construction)	Juggling Balls (Textiles/Materials)	Edible Garden (Food)
Key Stage 2 End Points	Cut materials accurately. Measure to the nearest millimetre. Choose suitable techniques to construct products to repair items. Strengthen materials using suitabletechniques. Design products Make products Identify designers Improve upon existing designs	Apply appropriate Cutting and shaping techniques that include Cuts within the perimeter of the material Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles Refine work and techniques as work progresses, continually evaluating theproduct design. Explore and evaluate a range of existing products.	Prepare ingredients hygienically usingappropriate utensils. Measure ingredients to the nearestgram accurately. Design products with purpose Make products by working efficiently. Improve upon existing designs, givingreasons for choices.
Knowledge	Measure and cut the body of the kite Join the kite to a structure. Strengthen a frame structure to support the kite. Use research and develop design criteria to inform the design of innovative, functional, appealing	Perform skills of cutting, shaping andhemming a juggling ball. Cut around a template and use a running stitch to create a hem. Use a functional technique to carefullydecorate my fabric. Perform tie-dye as a technique fordecorating my fabric.	Select from and use a wider range of tools and equipment to perform practicaltasks accurately Measure ingredients to the nearest gram accurately. Design, make and evaluate a product. Prepare and create a strawberrysmoothie.







Year 4

Year 4	Autumn	Spring	Summer
Theme	Making Mini Greenhouses Mechanism/Structure	American Food (Food)	Battery Operated Lights (Electricity)
Key Stage 2 End Points	Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product. Design with purpose by identifying opportunities to design. Make products by working efficiently Disassemble products to understand howthey work. Identify some of the great designers in allof the areas of study Improve upon existing designs, givingreasons for choices.	Follow a recipe. Assemble or cook ingredients controlling the temperature of the oven or hob, if cooking Refine work and techniques as work progresses. Use software to design and represent product designs. Improve upon existing designs, giving reasons for choices.	Create series circuits Create series and parallel circuits Refine work as work progresses Use software to design product design Explore and evaluate a range of existingproducts.









Year 5	Дutumn	Şpring	Summer
Theme	Bread (Food Technology)	Marbulous Structures (Materials)	Felt Phone Cases (Textiles)
Key Stage 2 End Points	Understand the importance of correctstorage and handling of ingredients using knowledge of micro-organisms Measure accurately Create and refine recipes, including ingredients, methods, cooking times and temperatures. Design with the user in mind, motivated by the service a product will offer. Make products through stages of prototypes Combine elements of design from a range of inspirational designers throughout history. Create innovative designs that improve upon existing products.	Cut and join materials with precision and refine the finish with appropriate tools Design with the user in mind. Combine elements of design from of inspirational designers throughout history Create innovative designs	Show an understanding of the qualities of materials to choose appropriate toolsto cut and shape Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles Use innovative combinations of computing in product designs. Ensure products have a highquality finish, using art skills where appropriate. Use prototypes and cross-sectional diagrams to represent designs. Evaluate the design of products so as tosuggest improvements to the user experience.







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Design Criteria	How did you achieve this?	How was it effective?
10-13 girls	Enderthe Colourful .	madeitbrighter
good stitching	strong outline stitch.	made it tighter
	blue on the Front, yellow	made it stand out.



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Felt Phone



















Skills Evaluation

Reflect on your own learning today. Answer each question as honestly as possible

List three new things you have learnt today:

some states blank er stitch 2 running stitch

3 backstitch

What did you find easy? The running stitch, because it was simple

What did you find difficult?

The backstitch, I kept forgetting to go back

What skill would you like to master before making your final product?

The running stitch, because it is easy.



Year 6	Autumn	Spring	Summer
Theme	Building Bridges (Mechanics)	Global Food (Food Technology)	Fairground Ride (Electricity)
Key Stage 2 End Points	Use innovative combinations of computing and mechanics in product designs. Convert rotary motion to linear using cams. Develop a range of practical skills to createproducts such as cutting, drilling and screwing, nailing, gluing, filing and sanding. Design with the user in mind, motivated by the service a product will offer rather than simply for profit. Make products through stages of prototypes, making continual refinements. Combine elements of design from a rangeof inspirational designers throughout history, giving reasons for choices. Create innovative designs that improve upon existing products.	Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Demonstrate a range of baking and cooking techniques. Ensure products have a high quality finish, using art skills where appropriate. Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. Evaluate the design of products so as to suggest improvements to the user experience.	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). Ensure products have a high-quality finish. Use prototypes to represent designs. Evaluate the design of products





