

Eastfield Primary School



DT Long Term Curriculum Plan 2019-2020

Key Stage 1
Programme of Study

D1 Design

- A. design purposeful, functional, appealing products for themselves and other users based on design criteria
- B. generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

D2 Make

- A. select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- B. select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

D3 Evaluate

- A. explore and evaluate a range of existing products
- B. evaluate their ideas and products against design criteria

D4 Technical knowledge

- A. build structures, exploring how they can be made stronger, stiffer and more stable
- B. explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products

D5 Cooking and Nutrition

- A. use the basic principles of a healthy and varied diet to prepare dishes
- B. understand where food comes from

	Design D1 (A,B)	Make (A,B)	Evaluate D3 (A,B)	Technical Knowledge D4 (A)
Year 1 DT	Textiles: Design, make and evaluate a toy hand puppet.			
	Materials/Construction: Design and build a functional structure (<u>Treasure Chest</u>) for other users, using card.			
	<ul style="list-style-type: none"> • Select pictures to help develop ideas and explain what they are making and which materials they are using • Discuss their work as it progresses • say whether their products are for themselves or other users • describe what their products are for • generate ideas by drawing on their own experiences 	<ul style="list-style-type: none"> • Select materials from a limited range that will meet the design criteria • Name the tools they are using 	Evaluate Existing Products: <ul style="list-style-type: none"> • what products are • who products are for • what products are for • Say what they like and do not like about the product they have made and why • Talk about their design and identify good and bad points 	Textiles <ul style="list-style-type: none"> • Join their fabrics with glue or by using running stitch, staples or over-sewing • Decorate their puppet with buttons, beads, sequins, braids and ribbons Materials <ul style="list-style-type: none"> • Measure and mark out card to be cut using a template • Join the card to make a 3D container using glue and tape • Cut materials safely using tools provided. • Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).

	Design D1 (A,B)	Make D2 (A,B)	Evaluate D3 (A)	Technical Knowledge D4 (A,B) D5 (A)
Year 2 DT	Mechanics: Design and make a Card using a lever to move an object			
	Food: Design and Make a Healthy Sandwich			
	Structures/Construction: Create a picture frame using wood and strengthening corners			
	<ul style="list-style-type: none"> Use pictures and words to convey what they want to make Use drawings to record ideas as they are developed Add notes to drawings to help explanations say how their products will work say how they will make their products suitable for their intended users use knowledge of existing products to help come up with ideas 	<ul style="list-style-type: none"> Plan out the sequence of techniques using adverbs of time to signify chronology Select and name the tools they need Select ingredients and explain why ingredients were chosen 	<p>Evaluate Existing Products:</p> <ul style="list-style-type: none"> what products are who products are for what products are for how products work how products are used where products might be used what materials products are made from what they like and dislike about products Describe the purpose of the product Evaluate how well it does its job (shows movement) Discuss how closely their finished product meets their design criteria. 	<p>Food</p> <ul style="list-style-type: none"> Understanding the basic principles of a healthy diet <ul style="list-style-type: none"> that all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught how to name and sort foods into the five groups in The eatwell plate that everyone should eat at least five portions of fruit and vegetables every day Developing a food vocabulary using taste, smell, touch and texture Grate and chop a range of ingredients Measure and weigh food items using non-statutory measures such as cups Demonstrate how to work safely and hygienically Assemble or cook ingredients. <p>Construction</p> <ul style="list-style-type: none"> Cut wood using a hacksaw Glue wood to strengthening corners Measure and mark out to the nearest centimetre. Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Use wood to practise drilling, screwing, gluing and nailing materials to make products <p>Mechanisms</p> <ul style="list-style-type: none"> Create a mechanism using a lever Use the lever to move an object/picture

Key Stage 2 Programme of Study

D6 Design

- A. use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- B. generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

D7 Make

- A. select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- B. 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

D8 Evaluate

- A. investigate and analyse a range of existing products
- B. evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- C. understand how key events and individuals in design and technology have helped shape the world

D9 Technical knowledge

- A. apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- B. understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- C. understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- D. apply their understanding of computing to program, monitor and control their products

D10 Cooking and Nutrition

- A. understand and apply the principles of a healthy and varied diet
- B. prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- C. understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

	Design D6 (A,B)	Make D7 (A,B)	Evaluate D8 (A,B)	Technical Knowledge D9 (A) D10 (A,B,C)
Year 3 DT	Materials/construction: Design, make and evaluate a clay pot			
	Food and nutrition: Design, Make and Evaluate a Healthy Salad using seasonal produce.			
	<ul style="list-style-type: none"> Investigate products to the one being made to give a starting point for design Draw/sketch product to help understand how they are made Think ahead about the order of their work describe the purpose of their products 	<ul style="list-style-type: none"> Decide upon the tools to be used Create instructions for others to follow to aid preparation Join and combine ingredients according to their aesthetic and functional properties Selecting an increasing number of tools such as a knife, grater and spiralizer to suit the design of the dish 	<p>Evaluate existing products</p> <ul style="list-style-type: none"> where products were designed and made when products were designed and made whether products can be recycled or reused Discuss how well the product meets the design criteria and how well it meets the needs of the user Evaluate their product and consider and explain how it could be improved. 	<p>Construction</p> <ul style="list-style-type: none"> Use the coiling technique with clay to build a pot Join coils accurately using tools selected. Understand how a wide base of a 3D object makes it more stable <p>Food</p> <ul style="list-style-type: none"> Build on their food vocabulary acquired in key stage 1 by increasing their sensory vocabulary and knowledge around how foods feel, smell and taste Make healthy eating choices from an understanding of a balanced diet when designing their product. Know that to be active and healthy, food and drink are needed to provide energy for the body Say how and why they need to work safely and hygienically by providing examples they have used when preparing the food using utensils use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Understand seasonality and which products can be grown locally and which can't. Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world Measure ingredients to the nearest gram accurately. Follow a recipe. Assemble or cook ingredients

	Design D6 (A,B)	Make D7 (A,B)	Evaluate D8 (A,C)	Technical Knowledge D9 (A,B,C)
Year 4DT	Textiles: Design, make and evaluate a survival bag using cross-stitch to write initials			
	Electrics/computing: Design, make and evaluate a revolving windmill using electrics and computing components			
	Mechanisms: Design, make and evaluate an Egyptian mechanism for lifting objects using a pulley			
	D8 (C) Building the pyramids and other buildings in Ancient Egyptian times.			
	<ul style="list-style-type: none"> investigate and analyse a range of existing functional survival products and draw/sketch products to help understand how and why they are made develop more than one design or adaptation of an initial design indicate the design features of their products that will appeal to intended users explain how particular parts of their products work 	<ul style="list-style-type: none"> select textiles according to their functional properties understand the need for a seam allowance create or adapt a simple pattern 	<p>Evaluate existing products</p> <ul style="list-style-type: none"> where products were designed and made when products were designed and made whether products can be recycled or reused <ul style="list-style-type: none"> evaluate against own design criteria consider the strengths and weaknesses of their work in relation to its function Understand how key events and individuals in design and technology have helped shape the world 	<p>Textiles</p> <ul style="list-style-type: none"> join textiles neatly using basic stitch techniques (running, back and oversewing) Decorate using cross stitch explore fastening and recreate some e.g. sew on buttons and create loops <p>Electronics</p> <ul style="list-style-type: none"> Understand and create an electrical circuit Create series and parallel circuits Know how simple electric circuits and components can be used to create functional products How to program a computer to control products <p>Mechanisms (Pulleys and Gears)</p> <ul style="list-style-type: none"> build on their scientific knowledge of the transference of forces in year 3 to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). draw on their knowledge of pulley systems to solve a problem to demonstrate how the Egyptians made it easier to lift rocks using pulleys build a wooden frame and strengthen this with diagonal struts measure, mark and cut the wood to 1cm Attach and construct the pulley system.

	Design D6 (A,B)	Make D7 (A,B)	Evaluate D8 (A,B)	Technical Knowledge D9 (B) D10 (A,B,C)
Year 5DT	Food: Create a savoury dish using typically South-American ingredients			
	Mechanisms: Convert rotary motion to linear using CAMS.			
	<ul style="list-style-type: none"> • make well-chosen decisions on how to prepare food products taking into account the properties of ingredients and sensory characteristics • select dishes for a particular purpose based on their knowledge of seasonality and typical South American ingredients. • sketch and model alternative ideas and record ideas using annotated diagrams with increasing detail • generate innovative ideas, drawing on research • carry out research, using surveys, interviews, questionnaires and web-based resources 	<ul style="list-style-type: none"> • Select tools and equipment to perform tasks such as cutting as well as shaping • Select from a wider range of ingredients based on knowledge of produce grown in South America • produce appropriate lists of tools, equipment and materials that they need • 	<p>Evaluate existing Products</p> <ul style="list-style-type: none"> • how much products cost to make • how innovative products are • how sustainable the materials in products are • what impact products have beyond their intended purpose <ul style="list-style-type: none"> • Consider the viewpoints of other when evaluating their work <ul style="list-style-type: none"> • Evaluate the process of design and making the product 	<p>Food</p> <ul style="list-style-type: none"> • Use scales to measure accurately • Cut and shape ingredients using appropriate tools and equipment • Decorate dishes based on knowledge of simple ingredients used to decorate dishes • Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Create and refine recipes, including ingredients, methods • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • that recipes can be adapted to change the appearance, taste, texture and aroma • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health <p>Mechanisms</p> <ul style="list-style-type: none"> • Build frameworks using a range of material to support mechanisms • Know how mechanical systems such as cams or pulleys or gears create movement • Convert rotary motion to linear using cams.

		Design D6 (A,B)	Make D7 (A,B)	Evaluate D8 (A,B)	Technical Knowledge D9 (C)
Year 6 DT	Textiles: Design, make and evaluate stitched household craft products				
	Electrics/Computing: Design, make and evaluate a moving vehicle using electronic kits				
	<ul style="list-style-type: none"> • make design decisions, taking account of constraints such as time, resources and cost • identify the needs, wants, preferences and values of particular individuals and groups 	<ul style="list-style-type: none"> • Select textiles according to their functional properties and aesthetic qualities (colour, texture, durability) • Make a seam allowance • Create or adapt a simple pattern of several pieces • Understand when to decorate materials before joining • formulate step-by-step plans as a guide to making 	<ul style="list-style-type: none"> • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make • Justify decisions about materials and methods of construction. 	<p>Textiles</p> <ul style="list-style-type: none"> • Join fabrics by pinning and tacking pieces together • Stitch using a range of stitches including blanket stitch • Create objects that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). <p>Electronics</p> <ul style="list-style-type: none"> • Draw on their knowledge of year 6 computing and science work on electrical circuits to design and create circuits using electronic kits that employ a number of components (such as resistor, LED's, transistors and chips) • Know how more complex electric circuits and components can be used to create functional products • Know how to program a computer to monitor changes in the environment and control their product 	

Design Technology at a glance at Eastfield Primary School			
	Autumn	Spring	Summer
Year 1 DT		Textiles: Design, make and evaluate a toy hand puppet.	Materials/Construction: Design and build a functional structure (<u>Treasure Chest</u>) for other users, using card.
Year 2 DT	Mechanics: Design and make a Card using a lever to move an object	Food: Design and Make a Healthy Sandwich	Structures/Construction: Create a picture frame using wood and strengthening corners
Year 3 DT	Materials/construction: Design, make and evaluate a clay pot		Food and nutrition: Design, Make and Evaluate a Healthy Salad using seasonal produce Knowledge also required to enhance understanding: Science - Nutrition
Year 4 DT	Textiles: Design, make and evaluate a survival bag using cross-stitch to write initials Knowledge also required to enhance understanding: Geography: Locational and place knowledge of extreme environments	Electrics/computing: Design, make and evaluate a revolving windmill using electrics and computing components Knowledge also required to enhance understanding: Science - Electricity	Mechanisms: Design, make and evaluate a mechanism for lifting objects using a pulley Knowledge also required to enhance understanding: History (Ancient Egypt) Understand how key events and individuals in design and technology have helped shape the world – Building the pyramids and other buildings in Ancient Egyptian times.
Year 5 DT	Food: Create a savoury dish using typically South-American ingredients		Mechanisms: Convert rotary motion to linear using CAMS. Knowledge also required to enhance understanding: Science - Forces
Year 6 DT	Textiles: Design, make and evaluate stitched household craft products Knowledge also required to enhance understanding: History – WW2 and the need for ‘Make do and Mend’		Electrics/Computing: Design, make and evaluate a moving chariot using electronic kits Knowledge also required to enhance understanding: Science – Electricity and y6 computer coding skills.

Eastfield Primary School - Long Term Plan by subject

