Coley Primary School Curriculum Overview

Design Technology

(EYFS-Year 6)

Overview and Progression in Design technology

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	**Mechanisms:** **Moving Pictures** To develop their understanding of mechanisms. Follow instructions on how to make different mechanisms, such as levers, wheels and sliders.		**Cooking:** **Sensational Salads** With close adult supervision, learn to use measuring spoons, zesters and juicers. Apply these skills when combining ingredients to prepare healthy dishes.		**Textiles:** **Fabric Bunting** Evaluate a range of existing bunting. Create a design and template for bunting. Cut out a bunting shape and use a simple running stitch.	
Year 2	**Textiles:** **Our Fabric Faces** Become familiar with the names of different fabrics Learn how to choose and manipulate fabrics to create different effects.		**Structures:** **Pirate Paddy's Packed Lunch Problems** Develop their understanding of structures. Explore different types of lunch boxes. Develop own ideas from existing products. Create models from reclaimed materials. Gain a basic understanding about how structures can be made stronger, stiffer and more stable.		**Cooking:** **Dips and Dippers** Good food hygiene rules. Use kitchen equipment to prepare food safely. Evaluate dips and dippers.	
Year 3	**Electronics:** **Battery Operated Lights** Gain knowledge about electric circuits in a purposeful way by designing and making a battery-operated light controlled by a homemade switch.		**Textiles:** **Juggling Balls** Design and make a circus themed juggling ball. Learn how to do a hemming and overcast stitch. Learn about decoration techniques.		**Cooking:** **Edible Garden** Learn where and how a variety of ingredients are grown. Learn to cook with different ingredients safely and hygienically.	
Year 4	**Cooking:** **The Great Bread Bake Off** Investigate and evaluate existing and own bread products. Use simple kitchen tools, knead dough and prove bread.		**Mechanisms:** **Mechanical Posters** To develop their understanding of mechanisms. Follow instructions on how to make different types of levers and linkage mechanisms. Make prototypes. Create Lever and Linkage Posters.		**Structures:** **Let's Go Fly a Kite** Understanding frame structures and how they can be strengthened and stiffened. Learn from existing kites to develop simple frame structures.	
Year 5	**Computer Programming:** **Programming Adventures** Create obstacles for a floor robot to avoid whilst the robots move on an adventure map.		**Cooking:** **Super Seasonal Cooking** Understand seasonal ingredients. Create dishes with seasonal ingredients. Follow recipes and use a wide range of preparation and cooking techniques.		**Mechanisms:** **Automata Animals** Cut materials accurately and safely by selecting appropriate tools. Assemble a simple cam mechanism as part of the design. Use tools with some accuracy and finish their automata animal in a design that they have prepared with some assistance. Use design criteria to evaluate,	
Year 6	**Textiles:** **Felt Phone Cases** Write own design criteria.		**Cooking:** **Global food** Follow a simple recipe.		**Structures:** **Marbulous Structures** Develop complex free-standing structures and how they can be strengthened and reinforced.	

	Design products thinking about aesthetics and functionality. Make a paper template and how to sew a running stitch, backstitch, whip stitch and blanket stitch.	Use some basic food skills, such as grating and chopping, to prepare simple savoury dishes.	Select tools and equipment to join and shape materials together. Design and build a simple marble run. Test and evaluate against a design criteria.

	Year 1 & 2	Year 3 & 4	Year 5 & 6
Aims:			
National Curriculum	**Design** Pupils should be taught to: • design purposeful, functional, appealing products for themselves and other users based on design criteria; • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. **Make** Pupils should be taught to: • select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]; • select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. **Evaluate** Pupils should be taught to: • explore and evaluate a range of existing	**Design** Pupils should be taught to: • 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; • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** Pupils should be taught to: • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately; • 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. **Evaluate** Pupils should be taught to: • investigate and analyse a range of existing products; • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work; • understand how key events and individuals in design and technology have helped shape the world. **Technical Knowledge** • apply their understanding of how to strengthen, stiffen and reinforce more complex structures;	

	products; • evaluate their ideas and products against design criteria. **Technical Knowledge** Pupils should be taught to: • build structures, exploring how they can be made stronger, stiffer and more stable; • explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. **Cooking and Nutrition** Pupils should be taught to: • use the basic principles of a healthy and varied diet to prepare dishes; understand where food comes from.	• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]; • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]; • apply their understanding of computing to program, monitor and control their products. **Cooking and Nutrition** Pupils should be taught to: • understand and apply the principles of a healthy and varied diet; • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques; understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	
EYFS	**30 – 50 months**	**40-60 months**	**ELG**
	Physical development **Moving and handling** To use one-handed tools and equipment, e.g. makes snips in paper with child scissors. **Health and self-care-** To understand that equipment and tools have to be used safely. **Understanding the world** **Technology** 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 or new images.	**Physical development** **Moving and handling** • To use simple tools to effect changes to materials. To handle tools, objects, construction and malleable materials safely and with increasing control. **Health and self-care** • 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	**Physical development** **Moving and handling** To handle equipment and tools effectively, including pencils for writing. **Expressive Arts and Design** **Exploring and using Media and Materials** To safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **Being imaginative** To use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas,

	Expressive Arts and Design **Exploring and using Media and Materials-** To enjoy joining in with dancing and ring games. To begin to moverhythmically. To imitate movement in response to music. To tap out simple repeated rhythms. **Being imaginative** To develop preferences for forms of expression. To use movement to express feelings. To create movement in response to music. To capture experiences and responses with a range of media, such as music, dance and paint and other materials or words.	equipment safely. To practise some appropriate safety measures without direct supervision. **Expressive Arts and Design** **Exploring and using Media and Materials** • To explore what happens when they mix colours. • 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 select appropriate resources and adapt work where necessary. To select tools and techniques needed to shape, assemble and join materials they are using. **Being imaginative** • To create simple representations of events, people and objects. To choose particular colours to use for a purpose.	thoughts and feelings through design and technology, art, music, dance, role play and stories.

		Year 1&2	Year 3 & 4	Year 5 & 6
DESIGN		**KS1 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. Children design purposeful, functional, appealing products for themselves and other users based on design criteria. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Children can: a use their knowledge of existing products and their own experience to help generate their ideas; b design products that have a purpose and are aimed at an intended user; c explain how their products will look and work through talking and simple annotated drawings; d design models using simple	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Children can: a identify the design features of their products that will appeal to intended customers; b use their knowledge of a broad range of existing products to help generate their ideas; c design innovative and appealing products that have a clear purpose and are aimed at a specific user;	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. Children 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. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. Children can: a use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market; b use their knowledge of a broad range of existing products to help generate their ideas; c design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; d explain how particular parts of their products work; e use annotated sketches, cross-sectional

		computing software e plan and test ideas using templates and mock-ups f understand and follow simple design criteria; g work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	d explain how particular parts of their products work; e use annotated sketches and cross-sectional drawings to develop and communicate their ideas; f when designing, explore different initial ideas before coming up with a final design; g when planning, start to explain their choice of materials and components including function and aesthetics; h test ideas out through using prototypes; i use computer-aided design to develop and communicate their ideas (see note on p. 1); j develop and follow simple design criteria; work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.	drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; f generate a range of design ideas and clearly communicate final designs; g consider the availability and costings of resources when planning out designs; work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.
MAKE		**KS1 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making. Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components,	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making. Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately. They select from and use a wider range	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making. Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional

		including construction materials, textiles and ingredients, according to their characteristics. Children can: Planning a with support, follow a simple plan or recipe; b begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; c select from a range of materials, textiles and components according to their characteristics; Practical skills and techniques d learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; e use a range of materials and components, including textiles and food ingredients; f with help, measure and mark out; g cut, shape and score materials with some accuracy; h assemble, join and combine materials, components or ingredients; i demonstrate how to cut, shape and join fabric to make a simple product; j manipulate fabrics in simple ways to create the desired effect; k use a basic running stich;	of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Children can: Plan a with growing confidence, carefully select from a range of tools and equipment, explaining their choices; b select from a range of materials and components according to their functional properties and aesthetic qualities; c place the main stages of making in a systematic order; Practical skills and techniques d learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; e use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; f with growing independence, measure and mark out to the nearest cm and millimetre; g cut, shape and score materials with some degree of accuracy; h assemble, join and combine material and components with some degree of accuracy; i demonstrate how to measure, cut,	properties and aesthetic qualities. Children can: Planning a independently plan by suggesting what to do next; b with growing confidence, select from a wide range of tools and equipment, explaining their choices; c select from a range of materials and components according to their functional properties and aesthetic qualities; d create step-by-step plans as a guide to making; Practical skills and techniques e learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; f independently take exact measurements and mark out, to within 1 millimetre; g use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; h cut a range of materials with precision and accuracy; i shape and score materials with precision and accuracy; j assemble, join and combine materials and components with accuracy; k demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; l join textiles using a greater variety of

		l cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; m begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.	shape and join fabric with some accuracy to make a simple product; j join textiles with an appropriate sewing technique; begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics	stitches, such as backstitch, whip stitch, blanket stitch; refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.
EVALUATE		**KS1 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. Children can: a explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations; b explain positives and things to improve for existing products; c explore what materials products are made from; d talk about their design ideas and what they are making; e as they work, start to identify strengths and possible changes they might make to refine their	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. Children can: a explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; b explore what materials/ingredients products are made from and suggest reasons for this;	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world. Children can: a complete detailed competitor analysis of other products on the market; b critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; evaluate their ideas and products against the original design criteria, making changes as needed.

		existing design; f evaluate their products and ideas against their simple design criteria; start to understand that the iterative process sometimes involves repeating different stages of the process.	c consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; d evaluate their product against their original design criteria; evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.	
TECHNICAL KNOWLEDGE		**KS1 Design and Technology National Curriculum** Children build structures, exploring how they can be made stronger, stiffer and more stable. They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Children can: a build simple structures, exploring how they can be made stronger, stiffer and more stable; b talk about and start to understand the simple working characteristics of materials and components; explore and create products using mechanisms, such as levers, sliders and wheels.	**KS2 Design and Technology National Curriculum** Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a understand that materials have both functional properties and aesthetic qualities; b apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of	**KS2 Design and Technology National Curriculum** Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; b understand and demonstrate that mechanical and electrical systems have an input, process and output; c explain how mechanical systems, such as

	products; c understand and demonstrate how mechanical and electrical systems have an input and output process; d make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; e explain how mechanical systems such as levers and linkages create movement; use mechanical systems in their products.	cams, create movement and use mechanical systems in their products; apply their understanding of computing to program, monitor and control a product.
COOKING AND NUTRITION	**KS2 Design and Technology National Curriculum** Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. They apply their understanding of computing to program, monitor and control their products. Children can: a apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; b understand and demonstrate that	**KS2 Design and Technology National Curriculum** Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; b understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; c with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of	**KS2 Design and Technology National Curriculum** Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Children can: a know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world; b understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; c understand that food is processed into ingredients that can be eaten or used in cooking; d demonstrate how to prepare and cook a

	mechanical and electrical systems have an input, process and output; c explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; apply their understanding of computing to program, monitor and control a product.	the hob and/or oven; d use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; e explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes; f understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body; g prepare ingredients using appropriate cooking utensils; h measure and weigh ingredients to the nearest gram and millilitre; i start to independently follow a recipe; start to understand seasonality.	variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; e demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; f explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes; g adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; h alter methods, cooking times and/or temperatures; i measure accurately and calculate ratios of ingredients to scale up or down from a recipe; j independently follow a recipe.