Design Technology

Colton Primary School

Progression map

Curriculum intent

At Colton Primary School we aim for Design and Technology to equip children with usable skills for future life. Children will design, make and evaluate products creatively and technically with a purpose using a wide variety of tools and materials. Through the study of Design and Technology children will draw upon knowledge from subjects, such as mathematics, science, computing and art. By exploring the man-made world and discussing how we live and work within it children will learn how to become innovative, resourceful and enterprising risk takers who can tackle real life problems. Children will understand and apply principles of nutrition and learn how to cook, preparing them for adult life and educating them on healthy eating. Whilst partaking in Design and Technology children will learn about health and safety and protective measures that need to be followed.

Colton Primary Design Technology Taught

Year group	Autumn Term	Spring Term	Summer Term
1	Structures/ Storm resistant dens	Traditional food from Britain/ Balanced plate	Wind chime/ bird feeder
2	Structures and Tudor architecture	Kites	Medieval weapons
3	Shop design	Pulley systems	Traditionally Yorkshire food
4	Chariots/ Wheel and axels	French and British traditional dishes	Medieval houses construction
5	Viking diet – typical meal	Long ships	Rucksacks
6	Inventions	Clothes	Exploring traditional dishes – focusing on nutrition and seasonality

Progression of knowledge and skills in Design and Technology

Strand	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Design	Share, their creations, explaining the process they have used.	Use their knowledge of existing products and their own experience to help generate their ideas; design products that have a purpose and are aimed at an intended user; explain how their products will look and work through talking and simple annotated drawings; design models using simple computing software; plan and test ideas using templates and mock-ups;	Use their knowledge of existing products and their own experience to help generate their ideas; design products that have a purpose and are aimed at an intended user; explain how their products will look and work through talking and simple annotated drawings; design models using simple computing software; plan and test ideas using templates and mock-ups;	Identify the design features of their products that will appeal to intended customers; use their knowledge of a broad range of existing products to help generate their ideas; design innovative and appealing products that have a clear purpose and are aimed at a specific user; explain how particular parts of their products work; use annotated sketches and cross-sectional drawings to develop and	Identify the design features of their products that will appeal to intended customers; use their knowledge of a broad range of existing products to help generate their ideas; design innovative and appealing products that have a clear purpose and are aimed at a specific user; explain how particular parts of their products work; use annotated sketches and	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; use their knowledge of a broad range of existing products to help generate their ideas; design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user;	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; use their knowledge of a broad range of existing products to help generate their ideas; design products that have a clear purpose and indicate the design features of their products that will appeal

		understand and follow simple design criteria; work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	understand and follow simple design criteria; work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	communicate their ideas; when designing, explore different initial ideas before coming up with a final design; when planning, start to explain their choice of materials and components including function and aesthetics; test ideas out through using prototypes; use computer-aided design to develop and communicate their ideas; 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	cross-sectional drawings to develop and communicate their ideas; when designing, explore different initial ideas before coming up with a final design; when planning, start to explain their choice of materials and components including function and aesthetics; test ideas out through using prototypes; use computer-aided design to develop and communicate their ideas; develop and follow simple design criteria; work in a broader range of relevant contexts, for example entertainment,	explain how particular parts of their products work; use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; generate a range of design ideas and clearly communicate final designs; 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,	to the intended user; explain how particular parts of their products work; use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; generate a range of design ideas and clearly communicate final designs; consider the availability and costings of resources when planning out designs; work in a broad range of relevant contexts, for example

				wider environment.	the home, school, leisure, food industry and the wider environment.	leisure, culture, enterprise, industry and the wider environment.	conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.
Make	Use a range of small tools, including scissors, paintbrushes and cutlery. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	With support, follow a simple plan or recipe; begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; select from a range of materials, textiles and components according to their characteristics;	With support, follow a simple plan or recipe; begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer; select from a range of materials, textiles and components according to their characteristics;	With growing confidence, carefully select from a range of tools and equipment, explaining their choices; select from a range of materials and components according to their functional properties and aesthetic qualities; place the main stages of making in a systematic order;	With growing confidence, carefully select from a range of tools and equipment, explaining their choices; select from a range of materials and components according to their functional properties and aesthetic qualities; place the main stages of making in a systematic order;	Independently plan by suggesting what to do next; with growing confidence, select from a wide range of tools and equipment, explaining their choices; select from a range of materials and components according to their functional properties and aesthetic qualities; create step-by-step plans as a guide to making.	Independently plan by suggesting what to do next; with growing confidence, select from a wide range of tools and equipment, explaining their choices; select from a range of materials and components according to their functional properties and aesthetic qualities; create step-by-step plans as a guide to making.

Practical skills and techniques	Use a range of small tools, including scissors, paintbrushes and cutlery. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; use a range of materials and components, including textiles and food ingredients; with help, measure and mark out; cut, shape and score materials with some accuracy; assemble, join and combine materials, components or ingredients; demonstrate how to cut, shape and join fabric to make a simple product; manipulate fabrics in simple ways to create the desired effect;	Learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures; use a range of materials and components, including textiles and food ingredients; with help, measure and mark out; cut, shape and score materials with some accuracy; assemble, join and combine materials, components or ingredients; demonstrate how to cut, shape and join fabric to make a simple product; manipulate fabrics in simple ways to create the desired effect;	Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; with growing independence, measure and mark out to the nearest cm and millimetre; cut, shape and score materials with some degree of accuracy; assemble, join and combine material and components with some degree of accuracy;	Learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; with growing independence, measure and mark out to the nearest cm and millimetre; cut, shape and score materials with some degree of accuracy; assemble, join and combine material and components with some degree of accuracy;	Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; independently take exact measurements and mark out, to within 1 millimetre; use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; cut a range of materials with precision and accuracy; shape and score materials with precision and accuracy; assemble, join and combine materials and	Learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures; independently take exact measurements and mark out, to within 1 millimetre; use a full range of materials and components, including construction materials and kits, textiles, and mechanical components; cut a range of materials with precision and accuracy; shape and score materials with precision and accuracy; assemble, join and combine

		use a basic running stich; cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.	use a basic running stich; cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups; begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.	demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; 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.	demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product; 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.	components with accuracy; demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; join textiles using a greater variety of 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.	materials and components with accuracy; demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product; join textiles using a greater variety of 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	Share, their creations, explaining the process they have used.	Explore and evaluate existing products mainly through discussions,	Explore and evaluate existing products mainly through discussions,	Explore and evaluate existing products, explaining the purpose of the	Explore and evaluate existing products, explaining the purpose of the	Complete detailed competitor analysis of other	Complete detailed competitor analysis of other

		comparisons and simple written evaluations; explain positives and things to improve for existing products; explore what materials products are made from; talk about their design ideas and what they are making; as they work, start to identify strengths and possible changes they might make to refine their existing design; 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.	comparisons and simple written evaluations; explain positives and things to improve for existing products; explore what materials products are made from; talk about their design ideas and what they are making; as they work, start to identify strengths and possible changes they might make to refine their existing design; 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.	product and whether it is designed well to meet the intended purpose; explore what materials/ingredients products are made from and suggest reasons for this; 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; 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.	product and whether it is designed well to meet the intended purpose; explore what materials/ingredients products are made from and suggest reasons for this; 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; evaluate their product against their original design criteria; evaluate the key events, including technological developments, and designs of individuals in design and technology that	products on the market; 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.	products on the market; 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.

					have helped shape the world.		
Technical Knowledge	Use a range of small tools, including scissors, paintbrushes and cutlery. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	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, such as levers, sliders and wheels.	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, such as levers, sliders and wheels.	Understand that materials have both functional properties and aesthetic qualities; apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate how mechanical and electrical systems have an input and output process; make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;	Understand that materials have both functional properties and aesthetic qualities; apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate how mechanical and electrical systems have an input and output process; make and represent simple electrical circuits, such as a series and parallel, and components to	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate that mechanical and electrical systems have an input, process and output; explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; apply their understanding of computing to program, monitor	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; understand and demonstrate that mechanical and electrical systems have an input, process and output; explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; apply their understanding of computing to program,

				explain how mechanical systems such as levers and linkages create movement; use mechanical systems in their products.	create functional products; explain how mechanical systems such as levers and linkages create movement; use mechanical systems in their products.	and control a product.	monitor and control a product.
Cooking and Nutrition	Understand the importance of healthy food choices	Explain where in the world different foods originate from; understand that all food comes from plants or animals; understand that food has to be farmed, grown elsewhere (e.g. home) or caught; name and sort foods into the five groups in the Eatwell Guide; understand that everyone should eat at least five portions of fruit	Explain where in the world different foods originate from; understand that all food comes from plants or animals; understand that food has to be farmed, grown elsewhere (e.g. home) or caught; name and sort foods into the five groups in the Eatwell Guide; understand that everyone should eat at least five portions of fruit	Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; with support, use a heat source to cook ingredients showing awareness of the need to control the	Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world; Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically; with support, use a heat source to cook ingredients showing awareness of the need to control	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; understand about seasonality, how this may affect the food availability and plan recipes according to seasonality;	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; understand about seasonality, how this may affect the food availability and plan recipes according to seasonality;

		and vegetables every day and start to explain why; use what they know about the Eatwell Guide to design and prepare dishes.	and vegetables every day and start to explain why; use what they know about the Eatwell Guide to design and prepare dishes.	temperature of the hob and/or oven; use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; 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; understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body; prepare ingredients using appropriate cooking utensils; measure and weigh ingredients to the	the temperature of the hob and/or oven; use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; 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; understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body; prepare ingredients using	understand that food is processed into ingredients that can be eaten or used in cooking; demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; 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;	understand that food is processed into ingredients that can be eaten or used in cooking; demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source; demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling; explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning

				nearest gram and millilitre; start to independently follow a recipe; start to understand seasonality.	appropriate cooking utensils; measure and weigh ingredients to the nearest gram and millilitre; start to independently follow a recipe; start to understand seasonality.	adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; alter methods, cooking times and/or temperatures; measure accurately and calculate ratios of ingredients to scale up or down from a recipe; independently follow a recipe.	and preparing dishes; adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma; alter methods, cooking times and/or temperatures; measure accurately and calculate ratios of ingredients to scale up or down from a recipe; independently follow a recipe.

DT- Key Vocabulary

Key Stage	Vocabulary
Food and Nutrition	Cut, peel, grate, ingredients, hygiene, measure, weigh, scales, cook, healthy, boil, slice, wash, fry, grams, ounce, recipe, assemble, temperature, bake, healthy, diet, whisk, knife, fork, spoon, mix, fold, pour, tray, simmer, spatula, flavour, flour, butter, sugar, eggs, milk, stir
Textiles and Materials	Cut, sew, needle, material, fold, finish, button, thread, cotton, scissors, shape, fabric, tear, glue, template, stitch, colour, decorate, print, dyeing, sequin, seam, textiles, pin
Electronics	Battery, fault, diagnose, circuit, series, electronics, components, bulbs, buzzers, motors, switches, circuits
Mechanisms	Wheel, hinge, screw, levers, sliders, wheels, axles, gears, pulleys, cams, construct, stronger, stiffer, stable, purpose, function, aesthetics, design criteria, model, evaluate, tools, techniques, materials, components, cut, assemble, join, combine