Design and Technology Long Term Plan: Overview of units

KS2			
	Autumn	**Spring**	**Summer**
A	Food – sandwiches	Making moving books	Stuffed Toys
B	Bread	Moving cars	CAMS (linked to forces in science)
C	Yule Logs	Hand Puppets	Recycling/ Repurposing: Shopping Bag
D	Edible Houses	Electircity – moving fairground rides	Memory Keepsake

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. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:

Design:

- 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:

- 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:

- 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 structures that are more complex

- 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

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Key stage 2

- 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.

COGL: Design and Technology - Long Term Planning

DT- CYCLE A-AUTUMN

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y3	Food - Sandwiches Design Make Evaluate Technical Knowledge	• Awareness of food available – seasonality, production methods. • Developing knowledge and ability to use kitchen equipment independently • Understanding of sweet and savoury • Secure understanding of instructions and how to follow	• To follow a step-by-step plan choosing the right equipment and materials Design • Research sandwiches according to a brief (Santa clause sandwich, wartime sandwich, sweet sandwich, healthy sandwich) • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. • understand and apply the principles of a healthy and varied diet Make • Select the most appropriate tools and techniques for the given task Evaluate • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Technical Knowledge • Describe how different food and ingredients come together	Children will design and make a sandwich How and why do the available ingredients differ? Pupils should show understanding of nutrition, cooking methods and availability of ingredients.

DT- CYCLE A-SPRING

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y3	Moving books Design Make Evaluate Technical Knowledge	*NC: 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. They should work in a range of relevant context* • Different materials have different properties • Products with the same use can have different designs • Different tools are necessary for different jobs	*NC: 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. They should work in a range of relevant contexts.* • Compare different designs of same objects and evaluate. • 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 • Select from a range of tools for different tasks • Select and give reasons for choice of materials and components. • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • How to strengthen, stiffen and reinforce more complex structures. • Understand and use mechanical systems in their products (gears pulleys, cams, levers and linkages)	• Design, make and evaluate a moving book

DT- CYCLE A-SUMMER

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y3	Stuffed toys Design Make Evaluate Technical Knowledge	*NC: 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. They should work in a range of relevant context* • Different materials have different properties • Products with the same use can have different designs • Different tools are necessary for different jobs	*NC: 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. They should work in a range of relevant contexts.* • Compare different designs of same objects and evaluate. • Annotate different products and their design features and evaluate • Select from a range of tools for different tasks • Select and give reasons for choice of materials and components. • 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 • apply their understanding of how to strengthen, stiffen and reinforce more complex structures	• Design, make and evaluate a stuffed toy (using running stitch)

DT- CYCLE B-AUTUMN

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y4	Bread Design Make Evaluate Technical Knowledge	• Awareness of food available – seasonality , production methods. • Developing knowledge and ability to use kitchen equipment independently • Understanding of sweet and savoury • Secure understanding of instructions and how to follow	• 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 • To follow a step-by-step plan choosing the right equipment and materials • To select the most appropriate tools and techniques for a given task • understand how key events and individuals in design and technology have helped shape the world • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Describe how different food and ingredients come together • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	Children will design and make and evaluate bread How and why do the available ingredients differ? Pupils should show understanding of nutrition, cooking methods and availability of ingredients.

DT- CYCLE B-SPRING

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y4	Moving cars Design Make Evaluate Technical Knowledge	*NC: 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. They should work in a range of relevant context* • Different materials have different properties • Products with the same use can have different designs • Different tools are necessary for different jobs	*NC: 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. They should work in a range of relevant contexts.* • Compare different designs of same objects and evaluate. • Annotate different products and their design features and evaluate • Select from a range of tools for different tasks • Select and give reasons for choice of materials and components. • 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 • How to strengthen, stiffen and reinforce more complex structures. • Understand and use mechanical systems in their products (gears pulleys, cams, levers and linkages)	Design, make and evaluate a moving car

DT – CYCLE B - SUMMER

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y5	Cams – links to forces in science Design Make Evaluate Technical Knowledge	Investigate products/images to collect ideas. Sketch and model alternative ideas. Record ideas using annotated diagrams. Make prototypes. Use found information to inform decisions. **Understand** how key events and individuals have helped shape the world **Research** a range of innovative, functional, appealing products and determine whether they are fit for purpose **Explore**, investigate and analyse a range of existing products **Evaluate** a product against the design criteria **Understand** a product should be well finished in a way that would appeal to users. **Listen and respond** to the views of others on how to improve their work	**Construction** Join materials using appropriate methods. Use a cam to make an up and down mechanism. Build frameworks using a range of materials to support mechanisms. E.g. wood, corrugated card and plastic. Use a glue gun with close supervision. Understand and use mechanical components such as gears, pulleys, levers in a product. • 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 • select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • 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 • apply their understanding of how to strengthen, stiffen and reinforce more complex structures • understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]	Explore the range of mechanisms. Produce design criteria for product Produce a project folder. Design a product. Create a product using a range of mechanisms. • Evaluate product.

DT- CYCLE C-AUTUMN

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y5	Yule logs Design Make Evaluate Technical Knowledge	Investigate products/images to collect ideas. Sketch and model alternative ideas. Record ideas using annotated diagrams. Make prototypes. Use found information to inform decisions. **Understand** how key events and individuals have helped shape the world **Research** a range of innovative, functional, appealing products and determine whether they are fit for purpose **Explore**, investigate and analyse a range of existing products **Evaluate** a product against the design criteria **Understand** a product should be well finished in a way that would appeal to users. **Listen and respond** to the views of others on how to improve their work	• To learn to cut, mix, spread, slice, blend, grate and chop ingredients with some accuracy using a variety of equipment and tools. • To time cooking and prep time with some accuracy for accurate results. • Describe food products in terms of taste, texture, flavour and relate this to the intended purpose of the food. • Understand that some foods may not be eaten raw, as it is unsafe/ Work in a safe and hygienic way. • To develop understanding of food groups, hygiene, healthy eating and a balanced plate.	• Understand products available and the use of decorative embellishment to sell products. • Evaluate locally available Yule logs. • Learn cake decorating techniques – Botham's link Use cake decorating techniques to produce an attractive Yule Log

DT- CYCLE C-SPRING

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y4	Hand puppets Design Make Evaluate Technical Knowledge	*NC: 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. They should work in a range of relevant context* • Different materials have different properties • Products with the same use can have different designs • Different tools are necessary for different jobs •	*NC: 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. They should work in a range of relevant contexts.* • Compare different designs of same objects and evaluate. • Annotate different products and their design features and evaluate • Select from a range of tools for different tasks • Select and give reasons for choice of materials and components. • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Design, make and evaluate a hand puppet

DT- CYCLE C-SUMMER

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y5	Recycling/repurposing Design Make Evaluate Technical Knowledge	Investigate products/images to collect ideas. Sketch and model alternative ideas. Record ideas using annotated diagrams. Make prototypes. Use found information to inform decisions. **Understand** how key events and individuals have helped shape the world **Research** a range of innovative, functional, appealing products and determine whether they are fit for purpose **Explore**, investigate and analyse a range of existing products **Evaluate** a product against the design criteria **Understand** a product should be well finished in a way that would appeal to users. **Listen and respond** to the views of others on how to improve their work	• To learn to mark out, use and cut simple patterns and templates, with some accuracy, using pencil/pen, ruler, tape measure, fabric crayons and scissors, fabric scissors and needles. • To use a variety of fabrics e.g. felt, calico, Hessian. • To learn to thread a needle with some accurately. • Cut accurately and safely to a marked line. • To measure ingredients with some accuracy using scales. • To time cooking and prep time with some accuracy for accurate results. • 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 • 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 • 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 • apply their understanding of how to strengthen, stiffen and reinforce more complex structures	• Complete a project folder for fabric recycling. • Produce a recycled shopping bag that can be used many times, reducing the need for plastic bags. • Forest School link: Make cakes on the campfire, as part of forest schools.

	Making forest school cakes		• Follow an increasingly detailed recipe. • Measure out ingredients by weight or quantity, using scales where appropriate / Understand that by varying, altering the weight and quantity of the ingredients from the recipe, the product will vary in taste and flavour. • Describe food products in terms of taste, texture, flavour and relate this to the intended purpose of the food. • Understand that some foods may not be eaten raw, as it is unsafe/ Work in a safe and hygienic way.	

DT- CYCLE D-AUTUMN

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y6	Edible Houses Design Make Evaluate Technical Knowledge	• Developing, planning and communicating ideas. • Working with tools, equipment, materials and components to make products. • To evaluate process and products. • Selecting ingredients	• Investigate existing products to inspire own designs. • Design a product that is fit for purpose, aimed at a specific audience. • Select ingredients, tools and equipment to create product. • evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Icing skills to decorate and construct design. • understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.	Create an edible house

DT- CYCLE D-SPRING

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y6	Electricity – moving fairground rides Design Make Evaluate Technical Knowledge	• Developing, planning and communicating ideas. • Working with tools, equipment, materials and components to make products. • To evaluate process and products. • Understand mechanical components – gears, levers, pulleys. • Understand electrical systems. •	• Investigate existing products to inspire own designs. • Understand how key individuals in design and technology have helped shape the world. • Design a product that is fit for purpose, aimed at a specific audience. • Select tools and equipment (including construction materials) to create product. • Evaluate own product against own design criteria and consider how to improve work. • Understand and use mechanical systems in designs. • Understand and use electrical systems in their designs.	Create a fairground ride.

DT- CYCLE D-SUMMER

	Context	Subject-specific knowledge	Subject- specific skill development	Key Expected Outcomes
DT Y6	Memory keepsake Design Make Evaluate Technical Knowledge	• Developing, planning and communicating ideas. • Working with tools, equipment, materials and components to make products. • Develop a range of stitches. • To evaluate process and products.	• Investigate existing products to inspire own designs. • Design a product that is fit for purpose, aimed at a specific audience. • generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design • Select tools and equipment to create product. • Evaluate own product against own design criteria and consider how to improve work. • Use a range of materials and stitches to join.	Create a memory keepsake.