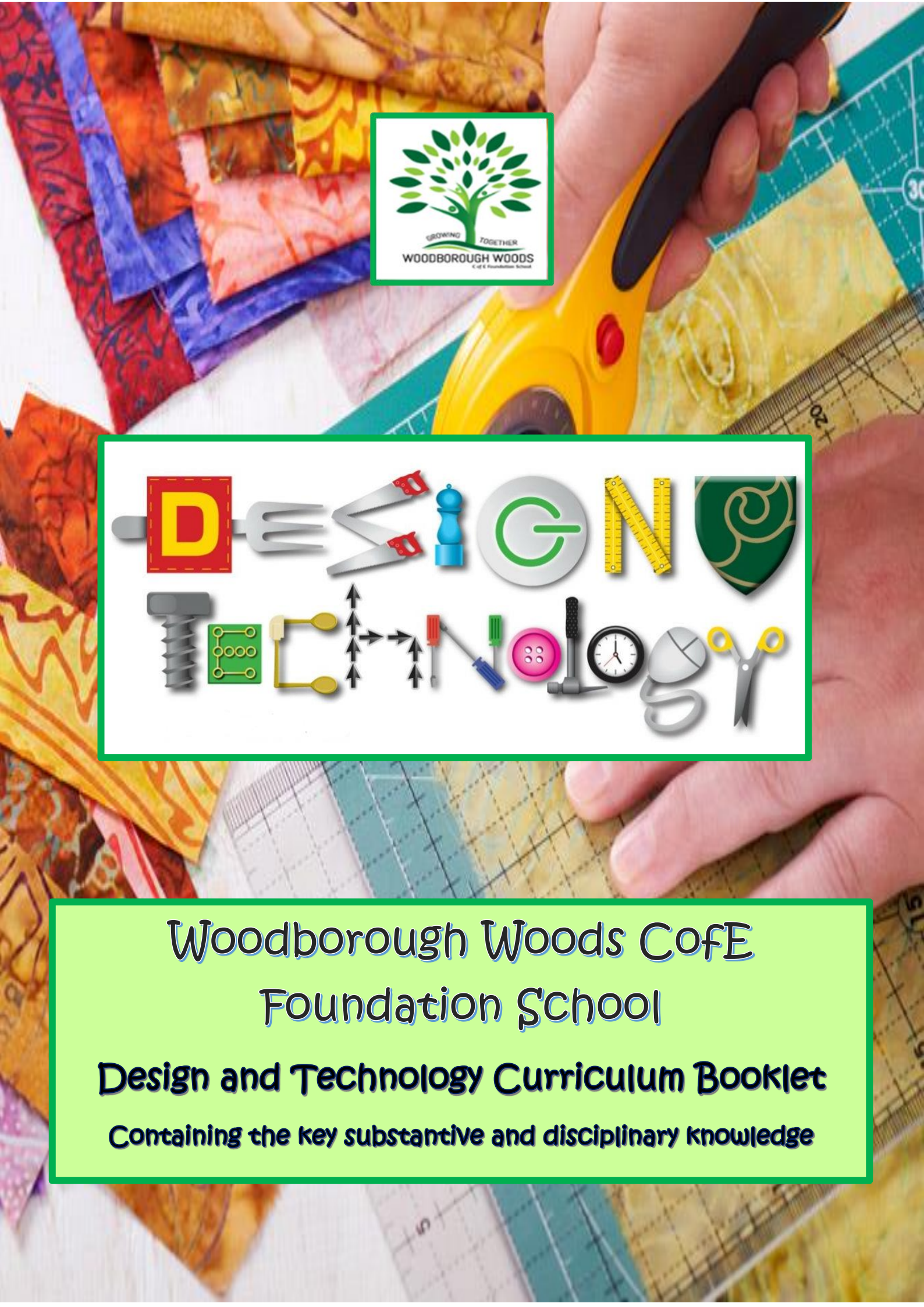


Woodborough Woods CofE Foundation School

Design and Technology Curriculum Booklet

Containing the key substantive and disciplinary knowledge

Our School Vision

Woodborough Woods is a school with a Christian foundation, which seeks to express its Christian character by serving families in the local community and by providing a Christian ethos where children and their families can feel valued. There is an opportunity to experience the meaning of the Christian faith in the welcome that is offered to all and in the relationships of love and respect that characterise the shared life of the school. Designed to be sequential, this curriculum enables pupils to build knowledge and skills by making links with previous learning; this is shown in our progression documents. By fostering an enjoyment of learning, our children are given the opportunity to develop as independent, resilient pupils who are equipped with the ability to use their knowledge and skills to make wise choices as they take their place in the world.

The school's direction stems from its Vision Statement: 'Grow Together' following Jesus' example to *'Love your neighbour as you love yourself'* (Matthew 22:37-39) because through love for one another, we can build a strong learning community ensuring that everyone has the opportunity to flourish. It recognises the importance of the community it serves, and seeks to build relationships based on kindness and respect. It will strive to be a place where Christian priorities and values inform every subject in the curriculum and are reflected in the day to day life of the school.
We believe that the children are the centre of all our work here and we strive to ensure our school is one with a happy and caring environment. We take pride in promoting the highest standards of conduct and achievement allowing children the security and confidence to reach their full potential.

As a Church of England Voluntary Aided school, our aim is to provide this secure environment, firmly rooted in Christian values. We believe that the education of children is a partnership, one between parents, teachers and governors all working together to provide the best interests for the children in our care.

GROWING TOGETHER
WOODBOROUGH WOODS
C of E Foundation School

Our Design and Technology Vision

At Woodborough Woods, a DT curriculum that allows children to express their individuality and ingenuity to design, make and evaluate their own product is important. Choosing suitable contexts for children's learning is essential if they are to work confidently. It is important to select contexts based on the local community, industry and the wider environment that are meaningful and relevant to children's learning.
We hope that the pupils' at Woodborough Woods C of E Foundation School learn how to take risks and will become resourceful, innovative, enterprising, and capable citizens which prepares them for their future.

Intent

Through our provision it is our aim that every child:

- will develop the knowledge and understanding of different types of designers and engineers looking at who, what, when and the how of DT. This will influence the use of tools, generation of ideas and how to create their intended outcome.
- can use a wide range of materials and components including construction materials and kits, textiles, food ingredients, mechanical components and electrical components to assemble, combine and join materials and components whilst also following procedures for safety and hygiene.
- can generate multiple ideas for good practice and can evaluate existing products they have explored and evaluated. This draws together designing and evaluating in a coherent way that makes sense to children and reflects DT in the wider world.

Features of effective Design and Technology teaching and learning

At Woods Foundation, we believe these features demonstrate best practice in the teaching and learning of Design and Technology. Whilst not every lesson may exhibit every feature, over the course of their learning in a Design and Technology unit, all of the following features would be evident.

Teachers are enthusiastic about the subject and communicate the value of DT to pupils well.
Teachers have a confident level of expertise and use this to plan purposeful lessons.
Teaching draws upon breadth and depth of subject knowledge to ensure all lessons are informative and inspiring.
Practical skills and designing strategies are taught effectively so that pupils have the opportunity to experience the design, make and evaluate process.
Learning fits into the sequence of analyse, design evaluate and make.
Pupils of different abilities make equally good progress with their knowledge and skills.
Teachers use questioning and manage discussions, skillfully, to check pupils' understanding and to challenge their thinking.
Pupils take responsibility of their own design problems and are supported and challenged to be innovative and creative.
A series of lessons contribute well to delivering Design and Technology.

The Design Technology Long Term Plan

R	**Exploring Construction** Create items of personal interest. Building blocks/enclosures - Creating enclosures within imaginative play, joining construction pieces together to build and balance.	**Being Imaginative** Creating objects for a given purpose and functionality. Knows when to use specific adhesives, applying this to paper and joining in different ways. Reflects on their projects and says what worked well.	**Building Blocks and Bridges** Showing an understanding of stability and balance when adding 3D components together. Explaining processes, they have gone through whilst making and the choices they made, often evaluating and evaluating their work.
1	**Toy Puppets** Explore a range of puppets, their features, what materials are used and what they are used for. Use skills to design their own puppet and follow designs to create puppet. Share, demonstrate and evaluate puppets.	**Flying Kites** Explore different types of kites and why people make them. Learn about kites made in different countries and what they are used for. Children will use colours, shapes and patterns to decorate a kite template. Explore materials that could be used to make different kites. Carry out tests to see which materials are more suitable for kite making. Use a range of materials to follow plan and make a diamond kite. Children will evaluate the kite-making process.	**Homes and Habitats** Explore and investigate the various types of houses people live in around the world, as well as the shapes you find in houses. Think about what materials and tools to use as well as how to join them. Follow designs to create houses with a moving mechanism e.g. moving door. Consider the safety and problems that may occur when building the structure of the house. Children to evaluate their work.
2	**Circus Model** Explore existing circus tent models and ferris wheels. Understand what materials are traditionally used to make a circus tent. Explore how to include moving parts and cams on the model. Children to test the moving parts and to evaluate finished product.	**Great British Dishes** Children will develop their understanding of what a traditional afternoon tea is. Children to discuss and explore different foods and know what are traditionally eaten in an afternoon tea. Use knowledge of healthy and balanced food choices using an 'eatwell plate' and taste different types of foods using appropriate vocabulary to describe them. Understand safety and hygiene needed when preparing food. Children to make an afternoon tea, taste it and evaluate it.	**A Vehicle to India** Explore existing modes of transport in India. Explore and discuss a variety of different vehicles, their features and what they are used for. Understand how different parts of a vehicles help to make them work. Follow designs to create and make vehicles using a range of craft materials, attaching wheels to axles and chassis. Children will evaluate their vehicle and test the vehicle to ensure the wheels are working and that the chassis is strong.

3	**Super Strong Structures** Explore the properties of different materials and think about which ones are suitable for each section of their stable structure. Children will follow their own design plans and use the helpful resources provided to build their own stable structures.	**Breads from around the world** Which seeds can be used in breads? Children will learn about different types of bread and the cultures and/or regions from which they originate. They will then taste and describe a variety of breads. Children will learn about the ingredients of bread and how they may be used. Children will taste and evaluate their own bread recipes.	**Packaging** Explore a variety of packaging for food and other products. Children will examine and deconstruct cardboard packaging before designing their own packaging. Children will make packaging boxes and will evaluate both their design process and their finished product.
4	**Green Houses** Find out the purpose of a greenhouse, and how it can help plants to grow. Children will make their mini greenhouses according to their plans and design criteria. Children will evaluate their own completed mini greenhouse.	**Torches** Explore different types of torches, the materials they are made out of and their varied uses, as well as investigating how torches work by creating simple circuits.	**Money Purses** Children will explore different types of money containers and their features, and practise their sewing skills, before designing making and evaluating their own money containers for a particular purpose.
5	**Cushion Covers** Analyse a range of cushions based on their functional and aesthetic features. Children will investigate how to join two pieces of fabric together. Explore the different fastenings that could be used for cushion covers. Children will make their cushion cover. Children will evaluate their finished product.	**Pizza, pizza, pizza!** Children to explore and discuss what pizza bases are made from and where they would be placed on the balanced diet plate. They will explore a variety of bread-based products and decide which would make a good base for a pizza. Children to make their pizza following their designs, being sure to work safely and hygienically. They will evaluate their pizzas once they have been made.	**Brilliant Bridges** Build bridge structures and test their strength with a weight bearing activity. Children will learn about how simple bridges are constructed using beams, pillars or piers, then make and test beam bridge designs. Before making final product, children will draw designs in cross sectional and exploded views and will create prototypes to show ideas with junk modelling.
6	**WW2 Cooking** Children will learn about the restrictions that were placed upon people and their diets during the war because of rationing. They will discover how wartime families were creative with the ingredients they could obtain and made many different recipes to use every bit of food they had and not let anything go to waste. The children will try make dishes following their own recipe, evaluating the dishes after making them	**Viking Longboat** Research the design and shape of Viking long boats. Investigate how sails have been used to power travel on water in different cultures. Use trial and error to get better results and evaluate the impact of changes to their design.	

Whole School Progression Document

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	- Know how to create items of personal interest. - Knows the environment/images can be used to support the decision of what to create. - Knows what they are going to make before doing so and what it will look like. - Knows how to create objects for a given purpose. - Knows how to explain what they have created and what it is for.	- Know how to generate ideas and recognise familiar products - Know how to use pictures and words to describe their designs.	- Know how to design purposeful and functional products for themselves and others based on a criteria. - Know how to generate, develop, model, and communicate ideas through talking, drawing and templates.	- Know how to demonstrate that their design meets a range of requirements. - Know how to complete a plan that shows the order and equipment/ tools needed to make product.	- Know how to demonstrate that their design meets a range of requirements. - Know how to complete a plan that shows the order and equipment/ tools needed to make product. - Know how to explain how the selected materials and components are appropriate quality.	- Know how 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. - Know how to create prototypes to show ideas (this can be done with junk modelling). - Know how to draw designs in cross sectional and exploded views.	- Know how to use market research to inform plans. - Know how to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer aided designs.
Make	- Knows how to close spaces and how to create enclosures. - Knows expanding building can take up larger areas of space.	- Know how to select from a range of tools and equipment to perform practical tasks (e.g. scissors, glues) - Choose materials and explain why.	- Know how to select from and use a wide range of materials and components including textiles, ingredients and construction materials.	- Know how to select from a wider range of tools and equipment to perform practical tasks accurately (e.g. saws, sanding, craft knives).	- Know how to explain how the materials and components chosen have contributed to the aesthetics of the finished product. - Know how to select from a wider range of tools and equipment to	- Know how to use tools and materials precisely. - Know how to select from and use a wider range of materials and components, including construction materials, textiles and ingredients,	- Know how to make modifications to the original design as they proceed. - Know how to cut and join with accuracy to ensure a high-quality finish to the product.

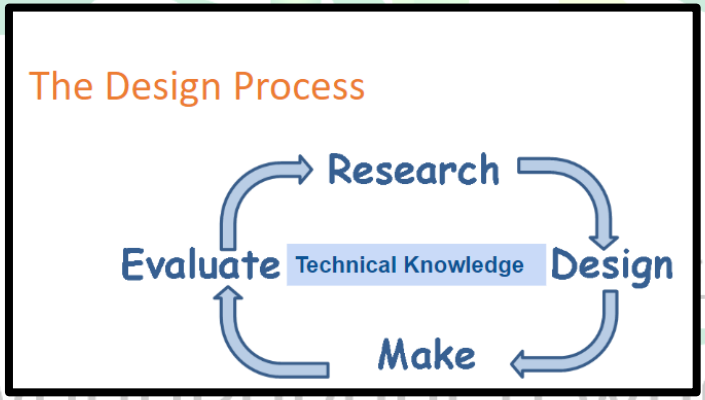
	- Knows enclosures and bridges can become the scenery/props for imaginative play. - Begins to cut a curved line. - Knows which pieces to select due to their size and shape to add symmetry and pattern. - Adds accessories to their structures. - Cut around circles, squares and images changing cutting direction and the angle of hold. - Uses small construction materials that join in different ways.		(e.g. hot glue guns, stitching and hinges.) - Know how to choose materials and explain why they are being used. - Know how to join materials together as part of a moving structure.		perform practical tasks accurately (e.g. saws, sanding, craft knives). - Know how to join and combine materials and components accurately (e.g. hot glue guns, wood glue, super glue, different stitching etc.)	according to their functional properties & aesthetic qualities.	- Know how to 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	- Know their creations can be used for play/purpose. - Knows they have achieved	- Know how to evaluate your own products using simple sentences.	- Know how to research and evaluate existing products to inform designs.	- Know how to investigate and analyse a range of existing products.	- Know how to investigate and analyse similar products to the one to be made for the criteria.	- Know how to evaluate their ideas and products against the design criteria and consider the views of others	- Know how to evaluate their ideas and products against the design criteria and

	the intended goal and label for safe keeping. - Reflects on their product and can say what worked well.		- Know how to evaluate their ideas and products against design criteria.	- Know how to evaluate their ideas and products against design criteria (has it met the criteria or not and why).	- Know how to consider how the finished product might be improved and how well it meets the needs of the user based on the criteria given.	to improve their work.	consider the views of others to improve their work. - Know and understand how key events and individuals in design and technology have helped shape the world.
Technical Knowledge	- Knows how to and can join construction pieces together to build and balance. - Knows when to use specific adhesives and uses them effectively. - Knows that paper can be joined in several ways and applies this knowledge in their creative work. - Knows construction pieces can be used due to their aesthetics, size or function.	- Use mechanical - focus on levers and sliders.	- Use mechanical focus on wheels and axles. - Know how to build structures, exploring how they can be made stronger, stiffer and more stable.	- Know how to strengthen frames using simple methods. - Use mechanical - focus on cams, levers and linkages.	- Know how to use a simple circuit in their product. - Know how to use mechanical systems in their product (focus on gears, and pulleys). - Know, understand and use electrical systems in their products e.g. series circuits incorporating switches, bulbs, buzzers and motors.	- Know and apply understanding of how to strengthen, stiffen and reinforce more complex structures.	- Know and apply understanding of how to strengthen, stiffen and reinforce more complex structures.

	- Knows to join simple components in 3D structures effectively using a selected method of joining (box modelling).						
Cooking & Nutrition			- Know where food comes from. - Know and make simple dishes safely and hygienically. - Know about healthy and varied diets - Know and deepen understanding of farming and importing. - Know how to sort foods into food groups. - Know preparation techniques (focus on cutting, spreading and mixing).	- Know and understand that seasons affect food availability. - Know how to prepare and cook a variety of mainly savoury dishes safely and hygienically. - Know and develop a range of techniques - focus on chopping, slicing, kneading and baking.	-Know how to prepare & cook a variety of mainly savoury dishes safely & hygienically -Know and understand that recipes can be adapted. -Know that food & drink provide energy the body needs.	- Know how to prepare & cook a variety of mainly savoury dishes safely and hygienically - Know how to use a range of ingredients in food practises. - Know about appropriate portion sizes. - Know and understand that recipes can be adapted. - Know that food & drink provide energy the body needs.	- Know how to prepare and cook a variety of mainly savoury dishes safely and hygienically - Know how to use information on food labels to inform decisions. - Know there are different nutrients in foods important for health. - Know and understand basic processes from farm to table.

Substantive and Disciplinary Knowledge

Mechanics	Textiles	Structures	Electrical/ Digital	Cooking and Nutrition
				
Pupils will gain an understanding of how different mechanisms work, evaluate products with different mechanisms and design and make working products to fit a design brief. They will gain the technical knowledge needed to make different mechanisms work effectively.	Pupils will gain the technical knowledge needed to work with textiles such as stitching, sewing and threading. They will study textile designs and how to make products which are practical as well as stylish and then apply this learning to their own designs and products.	Pupils will learn the technical knowledge used by designers to make structures which are strong and stable. They will learn and apply strengthening techniques, explore the benefits of different shapes and materials and apply this to their own designs and products.	Pupils will learn how electronics and digital technologies are used when designing and creating products. They will gain the technical knowledge needed to programme devises and to make use of electric circuits including switches to power and control a product.	Pupils will learn where food comes from and how nutritional information can be used to plan a balanced and healthy diet. They will also learn techniques needed to prepare and cook food safely and design dishes and meals for specific purposes.



Year 1

National Curriculum Aims:

Design-

- 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-

- 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-

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

Technical knowledge -

- 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-

- Use the basic principles of a healthy and varied diet to prepare dishes.

Understand where food comes from.

Toy Puppets	Flying Kites	Homes and Habitats
Explore a range of puppets, their features, what materials are used and what they are used for. Use skills to design their own puppet and follow designs to create puppet. Share, demonstrate and evaluate puppets.	Explore different types of kites and why people make them. Learn about kites made in different countries and what they are used for. Children will use colours, shapes and patterns to decorate a kite template. Explore materials that could be used to make different kites. Carry out tests to see which materials are more suitable for kite making. Use a range of materials to follow plan and make a diamond kite. Children will evaluate the kite-making process.	Explore and investigate the various types of houses people live in around the world, as well as the shapes you find in houses. Think about what materials and tools to use as well as how to join them. Follow designs to create houses with a moving mechanism e.g. moving door. Consider the safety and problems that may occur when building the structure of the house. Children to evaluate their work.
Sticky Knowledge	**Sticky Knowledge**	**Sticky Knowledge**
To know a puppet is a movable model of a person or animal. To know that a puppet is moved either by strings or by a hand. To know the different types of a puppet. To know how to follow a design criteria. To know that a joining technique means connecting two pieces of material together. To know that a template creates two identical shapes.	To know that fabrics can be joined using different techniques for various purposes. To know that textile products can be made from different fabrics (cotton, linen, denim). To know that fabrics are selected based on their properties (soft, hard, flexible, rigid, rough, smooth, shiny or dull). To know a range of finishing techniques (textiles paints, sequins and shiny fabrics or fabric crayons).	To know different types of houses that people live in around the world. To know what materials are suitable to build a house. To know examples of man-made structures are buildings, cars, and furniture. To know that a stable structure is one which is firmly fixed and unlikely to change or move. To know that the type of material will impact the strength of the structure.
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Textiles, fabrics, join, design, glue, pin, cut, join	Pattern, pieces, structure	Framework, weak, strong, stable, stiff, mechanism, freestanding

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
-Know how to generate ideas and	-Know how to select from a range of tools	-Know how to evaluate your own products	-Use mechanical - focus on levers and sliders.	

recognise familiar products -Know how to use pictures and words to describe their designs.	and equipment to perform practical tasks (e.g. scissors, glues) -Choose materials and explain why.	using simple sentences.		

Year 2

National Curriculum Aims:

Design-

- 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-

- 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-

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

Technical knowledge -

- 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-

- Use the basic principles of a healthy and varied diet to prepare dishes.

Understand where food comes from.

Circus Model	Great British Dishes	A Vehicle to India
Explore existing circus tent models and Ferris wheels. Understand what materials are traditionally used to make a circus tent. Explore how to include moving parts and cams on the model. Children to test the moving parts and to evaluate finished product.	Children will develop their understanding of what a traditional afternoon tea is. Children to discuss and explore different foods and know what are traditionally eaten in an afternoon tea. Use knowledge of healthy and balanced food choices using an 'eatwell plate' and taste different types of foods using appropriate vocabulary to describe them. Understand safety and hygiene needed when preparing food. Children to make an afternoon tea, taste it and evaluate it.	Explore existing modes of transport in India. Explore and discuss a variety of different vehicles, their features and what they are used for. Understand how different parts of a vehicles help to make them work. Follow designs to create and make vehicles using a range of craft materials, attaching wheels to axles and chassis. Children will evaluate their vehicle and test the vehicle to ensure the wheels are working and that the chassis is strong.
Sticky Knowledge	**Sticky Knowledge**	**Sticky Knowledge**
To know the features of a ferris wheel include the wheel, frame, pods, a base an axle and an axle holder. To know the suitable material to make a ferris wheel. To know that it is important to test my design as I go along so that I can solve any problems that may occur.	To know that a healthy diet is important because it is essential for good health and nutrition. To know that food comes from plants or animals. To know that countries have national dishes which are recipes associated with that country. To know that flavour is how a food taste.	To know that the axle holder is the component through which an axle fits and rotates. To know wheels are round, rotate and move because they are attached to an axle. To know that there are a range of wheeled products made for different users and for different purposes. To know that the frame of the vehicle (the chassis) needs to be balanced.
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Stable, cams, base, strengthen, stable, frame, pods, axle holder.	Health, diet, recipe, bridge and claw, national dish	Vehicle, wheel, axle, axle holder, chassis, body, mechanism, fixed axle and free axle.

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
-Know how to design purposeful and functional products for themselves and	-Know how to select from and use a wide range of	-Know how to research and evaluate existing products to inform designs.	-Use mechanical focus on wheels and axles.	-Know where food comes from.

others based on a criteria. -Know how to generate, develop, model, and communicate ideas through talking, drawing and templates.	materials and components including textiles, ingredients and construction materials. (e.g. hot glue guns, stitching and hinges.) -Know how to choose materials and explain why they are being used. -Know how to join materials together as part of a moving structure.	-Know how to evaluate their ideas and products against design criteria.	-Know how to build structures, exploring how they can be made stronger, stiffer and more stable.	-Know and make simple dishes safely and hygienically. -Know about healthy and varied diets. -Know and deepen understanding of farming and importing. -Know how to sort foods into food groups. -Know preparation techniques (focus on cutting, spreading and mixing).

Year 3

National Curriculum Aims:

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 more complex structures.
- 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-

- 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.

Super Strong Structures!	Breads from around the world	Packaging
Explore the properties of different materials and think about which ones are suitable for each section of their stable structure. Children will follow their own design plans and use the helpful resources provided to build their own stable structures.	Which seeds can be used in breads? Children will learn about different types of bread and the cultures and/or regions from which they originate. They will then taste and describe a variety of breads. Children will learn about the ingredients of bread and how they may be used. Children will taste and evaluate their own bread recipes.	Explore a variety of packaging for food and other products. Children will examine and deconstruct cardboard packaging before designing their own packaging. Children will make packaging boxes and will evaluate both their design process and their finished product.
Sticky Knowledge	Sticky Knowledge	Sticky Knowledge
To know that structures can be made of different materials (e.g. metal, wood, plastic, stone and brick). To know that structures can present, protect or contain another product. To know that structures are hollow shapes made from nets. To know that a 3D shape is made from a net.	To know that foods can be grouped according to the Eatwell plate. To know that food and ingredients need to be prepared and mixed to create products. To know a range of ways to prepare and combine ingredients. To know that seasonality impacts food products as the products will be fresher, sweeter and perfectly ripe.	To know that a 3D shape is made from a net. To know that tabs are needed to join sides of a 3D shape. To know that materials have functional and aesthetic qualities. To know that materials can be combined and mixed to create more useful characteristics. Know how to stiffen shell structures.

Key Vocabulary	Key Vocabulary	Key Vocabulary
Shell structure, three-dimensional (3D) shape, stiffen, net, material, scoring, shaping, tabs, join and assemble	Seasonality, grown, harvested, health, varied diet, hygiene, hygienic, flat surface down and recipe.	Shell structure, three-dimensional (3-D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, corrugating, ribbing, lettering, text, graphics, decision, evaluating, design brief, design criteria, innovative, prototype

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
- Know how to demonstrate that their design meets a range of requirements. - Know how to complete a plan that shows the order and equipment/ tools needed to make product.	- Know how to select from a wider range of tools and equipment to perform practical tasks accurately (e.g. saws, sanding, craft knives).	- Know how to investigate and analyse a range of existing products. - Know how to evaluate their ideas and products against design criteria (has it met the criteria or not and why).	- Know how to strengthen frames using simple methods. - Use mechanical - focus on cams, levers and linkages.	- Know and understand that seasons affect food availability. - Know how to prepare and cook a variety of mainly savoury dishes safely and hygienically. - Know and develop a range of techniques - focus on chopping, slicing, kneading and baking.

Year 4

National Curriculum Aims:

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 more complex structures.
- 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-

- 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.

Mini Greenhouses	Torches	Money Purses
Find out the purpose of a greenhouse, and how it can help plants to grow. Children will make their mini greenhouses according to their plans and design criteria. Children will evaluate their completed mini greenhouses.	Explore different types of torches, the materials they are made out of and their varied uses, as well as investigating how torches work by creating simple circuits.	Children will explore different types of money containers and their features, and practise their sewing skills, before designing making and evaluating their own money containers for a particular purpose.
Sticky Knowledge	**Sticky Knowledge**	**Sticky Knowledge**
To know that a greenhouse is a structure that allow people to regulate climatic conditions, such as temperature and humidity. To know that greenhouses include larger areas of transparent material to capture light and heat of the sun. To know that a straight cut and a 45-degree cut can be used to join two pieces of wood together.	To know the features of a torch. To know a variety of metal components conduct electricity.	To know what features make an effective a money purse. To know that products need to be aesthetical pleasing. To know that a money purse contains a safety feature to keep the product purpose safe.
Key Vocabulary	**Key Vocabulary**	**Key Vocabulary**
Transparent, climate, structure, material, assemble	Control, input, output, switch, push-to-make switch, push-to-break switch, toggle switch, series circuit, input device, output device, system, monitor, control, fault, connection, battery, battery holder, bulb, bulb holder, crocodile clip and wire.	Pattern pieces, stitch, seam, seam allowance, needles, thread

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
- Know how to demonstrate that their design meets a range of requirements. - Know how to complete a plan that shows the order and equipment/ tools needed to make product. - Know how to explain how the selected materials and components are appropriate quality.	- Know how to explain how the materials and components chosen have contributed to the aesthetics of the finished product. - Know how to select from a wider range of tools and equipment to perform practical tasks accurately (e.g. saws, sanding, craft knives). - Know how to join and combine materials and components accurately (e.g. hot glue guns, wood glue, super glue, different stitching etc.)	- Know how to investigate and analyse similar products to the one to be made for the criteria. - Know how to consider how the finished product might be improved and how well it meets the needs of the user based on the criteria given.	- Know how to use a simple circuit in their product. - Know how to use mechanical systems in their product (focus on gears, and pulleys). - Know, understand and use electrical systems in their products e.g. series circuits incorporating switches, bulbs, buzzers and motors	

Year 5

National Curriculum Aims:

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 more complex structures.
- 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-

- 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.

Cushion Covers	Pizza, pizza, pizza!	Brilliant Bridges
Analyse a range of cushions based on their functional and aesthetic features. Children will investigate how to join two pieces of fabric together. Explore the different fastenings that could be used for cushion covers. Children will make their cushion cover. Children will evaluate their finished product.	Children to explore and discuss what pizza bases are made from and where they would be placed on the balanced diet plate. They will explore a variety of bread-based products and decide which would make a good base for a pizza. Children to make their pizza following their designs, being sure to work safely and hygienically. They will evaluate their pizzas once they have been made.	Build bridge structures and test their strength with a weight bearing activity. Children will learn about how simple bridges are constructed using beams, pillars or piers, then make and test beam bridge designs. Before making final product, children will draw designs in cross sectional and exploded views and will create prototypes to show ideas with junk modelling.
Sticky Knowledge	**Sticky Knowledge**	**Sticky Knowledge**
To know that some products are turned inside-out after sewing so the stitching is hidden. To know that small, neat stitches which are pulled taught are important to ensure that the cushion holds the stuffing securely. To know that the blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. To know that its important to design clothing with the clientele in mind.	To know that food ingredients have a range of qualities which can be used to alter a basic recipe (appearance, including size, shape, colour and consistency, texture, flavour and nutritional content). To know that utensils and cooking equipment including heat sources are needed to prepare and cook food. To know that cross-contamination means that bacteria and germs have been passed onto ready to eat foods and it happens when theses foods mix with raw meat or unclean objects.	To know that a curve adds strengths to a structure. To know that triangular shapes support a join. To know that a cross sectional diagram shows how a product can be assembled.

Key Vocabulary	Key Vocabulary	Key Vocabulary
Aesthetics, authentic, stitch, seam, seam allowance, hem, annotated drawings.	Hygiene, health, diet, processed, recipe	Frame structure, stability, strengthen, reinforce, stiffen, portable, permanent, triangulation, shape, join, authentic, mock-up and prototype.

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
- Know how 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. - Know how to create prototypes to show ideas (this can be done with junk modelling). - Know how to draw designs in cross sectional and exploded views.	- Know how to use tools and materials precisely. - Know how to select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties & aesthetic qualities.	- Know how to evaluate their ideas and products against the design criteria and consider the views of others to improve their work.	- Know and apply understanding of how to strengthen, stiffen and reinforce more complex structures.	- Know how to prepare & cook a variety of mainly savoury dishes safely and hygienically. - Know how to use a range of ingredients in food practises. - Know about appropriate portion sizes.

Year 6

National Curriculum Aims:

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 more complex structures.
- 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-

- 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.

WW2 Cooking	Viking Longboat
Children will learn about the restrictions that were placed upon people and their diets during the war because of rationing. They will discover how wartime families were creative with the ingredients they could obtain and made many different recipes to use every bit of food they had and not let anything go to waste. The children will try make dishes following their own recipe, evaluating the dishes after making them.	Research the design and shape of Viking long boats. Investigate how sails have been used to power travel on water in different cultures. Use trial and error to get better results and evaluate the impact of changes to their design.
Sticky Knowledge	**Sticky Knowledge**
To know that different foods have different substances needed for health (vitamins, minerals, protein, fats, water, diary and carbohydrates). To know that food has a nutritional value and a nutritional calculator can be used to see how healthy a food option is. To know that recipes can be adapted to make them healthier by substituting ingredients.	To know that structures can be made of different materials (e.g. metal, wood, plastic, stone and brick). To know that structures can present, protect or contain another product. To know how the surface area affects buoyancy.
Key Vocabulary	**Key Vocabulary**
Peeling, welfare, grating, harvested, vitamins, minerals, protein, fat, diary, carbohydrates.	Shell structure, buoyancy, stiffen, stability, strength

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
- Know how to use market research to inform plans. - Know how to generate,	- Know how to make modifications to the original design as they proceed.	- Know how to evaluate their ideas and products against the design criteria and consider the views of others	- Know and apply understanding of how to strengthen, stiffen and reinforce more	- Know how to prepare and cook a variety of mainly savoury dishes safely and hygienically.

develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer aided designs.	- Know how to cut and join with accuracy to ensure a high-quality finish to the product. - Know how to 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.	to improve their work. - Know and understand how key events and individuals in design and technology have helped shape the world.	complex structures.	- Know how to use information on food labels to inform decisions. - Know there are different nutrients in foods important for health.