



Ridgmont Lower School Design and Technology Curriculum

Intent:

Design and Technology is an inspiring and practical subject. Our curriculum allows opportunities for pupils to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Learners are encouraged to take risks, become resourceful, innovative and enterprising. We believe that design and technology gives young people the skills and abilities to engage positively with the designed and made world and to harness the benefits of technology. We want our children to learn how products and systems are designed and manufactured, how to be innovative and to make creative use of a variety of resources including digital technologies, to improve the world around them.

Implementation:

- Pupils experience D&T skills planned to allow pupils to acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing & art
- Pupils begin all design projects by gathering research and evaluating existing products
- Pupils are taught how to effectively evaluate past and present designs and develop a critical understanding of its impact on the wider world. They also learn the importance of the target audience and the relevance of market research
- Pupils learn how to write design specifications, developing their ability to plan for products that are fit for purpose
- Pupils are given the opportunity to develop the key skill being taught through focused practical tasks
- Pupils make end products from selecting and using a wider range of tools and equipment to perform practical tasks
- Pupils choose from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. Throughout the design and making process, pupils learn how to develop their ability to critique, evaluate and test their ideas and products and the work of others. They do this through peer and self-assessment

Impact:

Ridgmont Lower School will have engineers and chefs who:

- Are passionate and enjoy designing constructing and evaluating
- Develop a desire to learn about technological innovation, products and systems
- Take and link learning from other subjects and apply it logically
- Take safe, creative risks
- Are independent and who work constructively with others
- Analyse and evaluate
- Make mistakes, share them and learn from them

National Curriculum Coverage

Early Years	Key Stage 1	Lower Key Stage 2
Exploring and Using Media and Materials <ul style="list-style-type: none"> • Manipulate materials to achieve a planned effect • Constructs with a purpose in mind, using a variety of resources • Selects appropriate resources and adapts work where necessary • Selects tools and techniques needed to shape, assemble and join materials they are using. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function 	Design <ul style="list-style-type: none"> • Seaside Snacks • Puppets • Moving Minibeasts • Kites Make <ul style="list-style-type: none"> • Seaside Snacks • Puppets • Moving Minibeasts • Vehicles Evaluate <ul style="list-style-type: none"> • Seaside Snacks • Puppets • Moving Minibeasts • Kites • Vehicles • Balanced Diet Technical Knowledge <ul style="list-style-type: none"> • Moving Minibeasts • Vehicles Cooking & Nutrition <ul style="list-style-type: none"> • Seaside Snacks • Balanced Diet 	Design <ul style="list-style-type: none"> • Greenhouses • Moving Monsters • Packaging • Alarms • Pencil Cases Make <ul style="list-style-type: none"> • Greenhouses • Moving Monsters • Packaging • Alarms • Pencil Cases Evaluate <ul style="list-style-type: none"> • Greenhouses • Moving Monsters • Packaging • Alarms • Pencil Cases Technical Knowledge <ul style="list-style-type: none"> • Greenhouses • Moving Monsters • Packaging • Alarms • Pencil Cases Cooking & Nutrition <ul style="list-style-type: none"> • Seasonal & Savoury


Skills Progression

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
STRUCTURES	Begin to select appropriate materials Begin to cut accurately Experiment with glue and sticky tape to join components together	Discuss what makes a building 'strong' (eg. with reference to houses) Select appropriate materials (which can be cut or shaped, eg. cardboard) Use cutting, gluing, tying, taping to shape and join materials Test models Suggest ways they could be strengthened and improved	Explore existing freestanding structures & identify features that make them strong Generate design ideas for a given context (eg. Vehicle to carry an apple) Agree design criteria Measure, mark-out, cut and shape materials Select tools / methods for cutting, joining and assembling	Investigate and evaluate shell structures (boxes, packaging, nets of shapes etc) Develop practical ideas to solve a real-world problem (eg. packaging foods / toys) Select materials and tools appropriate to the task Measure, shape, cut and join materials with some accuracy Use art and design skills to finish the product attractively	Create models to further understanding in other areas of the curriculum (eg. greenhouses) Use annotated sketches to develop and share ideas Select materials based on their properties and availability Use a wider range of techniques to shape and join materials (eg. saws, glue guns)	Please refer to your child's chosen middle school's curriculum	

MECHANISMS	To use a variety of construction toys to make models with moving parts	<p>Explore and evaluate books and products with moving parts, including those with sliders and levers</p> <p>Develop understanding of the way sliders levers and pivot mechanisms can create movement</p> <p>Develop & share design ideas</p> <p>Use cutting, gluing & taping to shape and join materials</p> <p>Use art & design techniques to create a finished product</p>	<p>Explore different vehicles - what is similar and different about them? Identify wheels, axles, chassis etc.</p> <p>Build models from construction kits / materials (eg. Lego, Knex)</p> <p>Explore ways of joining wheels to allow movement</p> <p>Build models and suggest ways they could be tested out</p>	<p>Investigate the use of levers and linkages to create more complex movement (eg. in pop-up books or greetings cards)</p> <p>Explore the effect of fixed and loose pivots on movement</p> <p>Develop design ideas linked to a specific purpose</p> <p>Measure, shape, cut and join materials with some accuracy</p> <p>Identify strengths and areas for improvement in products</p>	<p>Examine and disassemble a simple battery-powered product, identifying key parts of the electrical circuit</p> <p>Explore and make different types of simple switches</p> <p>Know how to use electricity safely</p> <p>Design and make a battery powered product (eg. an alarm)</p> <p>Evaluate using design criteria</p>	
TEXTILES	Begin to use a wide range of materials	<p>Generate ideas for a product by drawing on their own experiences</p> <p>Say how the product will suit its intended user</p> <p>Cut, shape and join materials to make a product with a particular purpose (eg. a puppet)</p> <p>Say what they like and dislike about finished products</p>	<p>Design a functional, appealing product for a chosen user</p> <p>Use templates to mark-out materials for cutting</p> <p>Choose materials based on their functional and aesthetic properties</p> <p>Join fabrics using a running stitch (eg. to make a puppet)</p> <p>Suggest how products could be improved</p>	<p>Develop ideas for a real-world design problem (eg. money containers or shopping bags) by gathering information on the wants and needs of users</p> <p>Share and model ideas using sketches and diagrams</p> <p>Justify choice of materials</p> <p>Measure, shape, cut and join materials with some accuracy</p> <p>Sew on buttons, handles, tags etc to finish the product</p>	<p>Analyse items of clothing linked to another area of the curriculum (eg. religious festival or historical period) using annotated sketches</p> <p>Identify design features & develop design criteria</p> <p>Use measurement and pattern pieces to create clothing fitted to a specific user</p> <p>Evaluate finished pieces using agreed design criteria</p>	
COOKING AND NUTRITION	<p>Begin to learn about healthy eating</p> <p>Use tools to prepare their own snacks</p> <p>Begin to understand and explore where food comes from</p>	<p>Know that all food comes from plants or animals</p> <p>Talk about what foods we should eat to stay healthy</p> <p>Prepare fruit and vegetables for eating safely and hygienically (without using a heat source)</p> <p>Compare the taste and texture of different foods</p> <p>Use kitchen skills to make sandwiches, edible boats, fruit sculptures and wraps</p>	<p>Know that food can be farmed, grown elsewhere (eg. at home) or caught</p> <p>Name and sort foods into the five groups shown in the Eatwell Guide</p> <p>Use cutting, peeling and grating to prepare ingredients</p>	<p>Use home-grown ingredients in cooking (eg. tomatoes, beans, strawberries)</p> <p>Make breads using kneading and baking, and compare different breads from around the world</p> <p>Know a range of appropriate ingredients, and whether they are grown, reared or caught</p>	<p>Know that, to be active and healthy, food and drink are needed to provide energy for the body</p> <p>Prepare savoury dishes using peeling, chopping, slicing and mixing</p> <p>Recognise the steps needed to prepare food safely and hygienically</p> <p>Plan, carry out and record evaluations of food produced</p>	

FIRST YEAR

Subject Content Design & Technology		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 and school, garden and playgrounds, the local community, industry and the wider environment].					
Subject Content Cooking & Nutrition		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 affordable and well, now and in later life.					
		Autumn	Spring	Summer			
National Curriculum		Cooking & Nutrition	Design Make Evaluate	Design Make Evaluate Technical Knowledge			
Stimulus		Food Technology ~ Seaside Snacks		Puppets			
YEAR 1	DESIGN			With support, design purposeful, functional, appealing products for themselves and other users based on a design criteria.			
	MAKE			With support, generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.			
	EVALUATE			With support, select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].			
	TECHNICAL KNOWLEDGE			With support, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.			
YEAR 2	DESIGN			To begin to explore and evaluate a range of existing products.		Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	
	MAKE			With support, evaluate their ideas and products against design criteria.		Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	
	EVALUATE					Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.	
	TECHNICAL KNOWLEDGE					Evaluate their ideas and products against design criteria and suggest areas for improvement.	
Vocabulary Technical Topic specific		Instructions Evaluate Hygienically Dehydrated Sweet Prepare Edible Appetising	Savoury Fish Balanced plate Healthy fats Dairy products Salad Vitamin A Fibre Avocado Cantaloupe melon Aubergines Pepper Sweet potatoes Vitamin C Vitamin B6 Kiwi Star fruit Meat Courgettes	Investigate Discuss Techniques Evaluate Features Explore Develop Practice Purpose Components Features Improve	Template Sewing skills Overstitch Needle Glove puppet Running stitch Materials Fabric Thread		
What children will have learnt by the end of the topic				Materials Explore Discuss Equipment Join Explain Combine Create Design Components	Sliding mechanism Levers Pivots Wheel mechanism Moving mechanism Moving picture		
				<p>How a sliding mechanism works</p> <p>How to make their own moving pictures using a sliding mechanism</p> <p>How to evaluate the sliding mechanisms they have made, and identify areas where they could be improved</p> <p>What the terms 'lever' and 'pivot' mean</p> <p>How to combine and join materials to make their own lever and pivot mechanisms</p> <p>How their lever and pivot mechanism works</p> <p>What a pivot is?</p> <p>How to cut out and join components to create a wheel mechanism</p> <p>How to evaluate their work and identify areas for future development</p> <p>To design their own moving picture</p> <p>To choose a suitable moving mechanism for their design</p> <p>To explain how the mechanism will make their picture move</p> <p>How to follow a design to create a picture with a moving mechanism</p>			

			a variety of materials and tools To evaluate their own finished products and say what they think and feel about them To comment on the work of others and offer their opinions Ways in which they could improve their work in the future	How to work safely with a variety of tools and materials to create a moving mechanism How to identify ways in which they can improve their finished products What it means to evaluate Ways to improve their moving picture
COOKING AND NUTRITION What children will have learnt by the end of the topic	For the children accessing this in Year 1: To know we need food and drink to stay alive To know that people need food and drink to stay alive. To know that food and drink help us to grow, be active and stay healthy. To know we need more of some foods than others. To know that everyone should eat at least 5 portions of fruit and vegetables every day. To talk about foods they like and dislike and explain why. To know that we eat different foods depending on the time of day, occasion and our lifestyle In addition to the above, for the children accessing this in Year 2: To know we need a variety and balance of food (and drinks) to stay healthy, as depicted in the Eatwell Guide To recognise the Eatwell Guide as a model which shows how to eat healthily. To sort a selection of foods into the five Eatwell Guide food groups. To put together a simple, balanced meal (and include a drink) by choosing foods from the Eatwell Guide. To know that different people eat or avoid certain foods for different reasons and I can give some of these reasons, e.g. allergy, intolerance, religious belief			
Cross Curricular Links	❖ PSHE ❖ History ❖ Music ❖ Science	❖ Science ❖ PSHE	❖ Music ❖ Science	
Building on from... 	<ul style="list-style-type: none"> Knowing what object need a push or a pull Deciding what to build before it is built Exploring what be done or used to fix things Understanding how to handle a product so it does not get broken 			

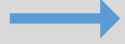
KS1

SECOND YEAR

		Autumn	Spring	Summer
National Curriculum		Design Evaluate	Cooking & Nutrition	Design Make Evaluate Technical Knowledge
Stimulus		Kites	Food Technology ~ Balanced Diet	Vehicles
YEAR 1	DESIGN	With support, design purposeful, functional, appealing products for themselves and other users based on a design criteria With support, generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	(This area is a large diagonal line across the Spring column, indicating a transition or shared content between the Spring and Summer columns.)	To independently design purposeful, functional, appealing products for themselves and other users based on a design criteria To independently generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
	MAKE	With support, select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] With support, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics		Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] and explain their choice Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics and explain their choice.
	EVALUATE	To begin to explore and evaluate a range of existing products With support, evaluate their ideas and products against design criteria		With support, explore and evaluate a range of existing products Evaluate their ideas and products against design criteria and suggest areas for improvement
	TECHNICAL KNOWLEDGE	Build structures, and with support, explore how they can be made stronger, stiffer and more stable		Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products
YEAR 2	DESIGN	Design purposeful, functional, appealing products for themselves and other users based on a design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology		To independently design purposeful, functional, appealing products for themselves and other users based on a design criteria To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology and explain the reason/s behind their choices; support peers with their projects.
	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		Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] and explain and justify their choice Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics and explain and justify their choice

	EVALUATE	Independently explore and evaluate a range of existing products Evaluate their ideas and products against design criteria			Work collaboratively to explore and evaluate a range of existing products and share ideas. Evaluate their ideas and products against design criteria, suggest areas for improvement and explain the difference the improvements might make.	
	TECHNICAL KNOWLEDGE	Build structures, exploring how they can be made stronger, stiffer and more stable; make an appropriate choice for the chosen product			Build structures, exploring how they can be made stronger, stiffer and more stable; make an appropriate choice for the chosen product and explain and justify how it might be an improvement.	
	Vocabulary Technical Topic specific Explore Colours Shapes Patterns Notes Suitable Recognise Understand Prediction Images Aesthetic Construct Plan Successful Attractive Failure Created Discuss	Template Materials Test Observations Carp Kite Festival Japan Children's Day Diamond Kite Design Equipment Evaluate Process Creation	Appearance Fruit Smell Combination Design Evaluate Review Feel	Chopping board Design brief Carbohydrates Proteins Table knife Dairy Diet Ingredients Spreads Balanced Grate Menu Snip Cut Grater Oils Taste	Investigate Technique Experiment Criteria Identify Attaching Materials Create Draw Make Product Evaluate Amend Compare Improve Design Label Types Variety	Wheels Axels Body Tools Chassis Modelling equipment Vehicles Features
What children will have learnt by the end of the topic	What a kite is To understand the history and uses for kites To design a kite for a particular use To recognise some materials used to make kites That different materials to make kites are better than others How to make a prediction and test it How to make a simple kite by following instructions How to evaluate a simple kite What kite shapes would fly better than others How to design a kite? How to describe the materials and equipment needed to make a kite How to make a kite look aesthetically pleasing How to construct a kite by following a plan How to choose appropriate materials to construct a kite How to use colours and patterns to make a kite look attractive How to evaluate a piece of work they designed and created from scratch What evaluation means How to evaluate and discuss other people's designs and creations				To identify a variety of different types of vehicles To identify the main features of a variety of vehicles To identify the uses for a variety of vehicles What wheels, axles and chassis are There are two different ways of attaching wheels to axles To experiment with a range of materials and techniques to combine wheels, axles and chassis To choose materials to use as the body of a vehicle To identify different ways of combining materials to create the body of a vehicle To identify different ways of decorating the body of a vehicle including ICT To design a vehicle to include wheels, axles, chassis and bodies Which materials and tools they will need to make their vehicles To discuss their designs and say what they think and feel about them To follow a design to create a vehicle To use a variety of materials and tools safely and effectively to create a vehicle Ways in which they could improve their products and amend accordingly To evaluate a finished product by identifying what they did well To evaluate a finished product by identifying what could be improved Identify ways in which they could improve their work with DT in the future	
COOKING AND NUTRITION What children will have learnt by the end of the topic	For the children accessing this in Year 1: To know we need food and drink to stay alive To know that people need food and drink to stay alive. To know that food and drink help us to grow, be active and stay healthy. To know we need more of some foods than others. To know that everyone should eat at least 5 portions of fruit and vegetables every day. To talk about foods they like and dislike and explain why. To know that we eat different foods depending on the time of day, occasion and our lifestyle In addition to the above, for the children accessing this in Year 2: To know we need a variety and balance of food (and drinks) to stay healthy, as depicted in the Eatwell Guide To recognise the Eatwell Guide as a model which shows how to eat healthily. To sort a selection of foods into the five Eatwell Guide food groups. To put together a simple, balanced meal (and include a drink) by choosing foods from the Eatwell Guide. To know that different people eat or avoid certain foods for different reasons and I can give some of these reasons, e.g. allergy, intolerance, religious belief					
Cross Curricular Links	❖ History ❖ RE ❖ PSHE	❖ PSHE ❖ Science				

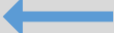
What comes next...



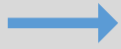
- Knowing how to create series and parallel electrical circuits to control movement.
- Using learnt knowledge of forces to make a mechanism perform a function
- Exploring what joining techniques can be used to ensure materials are securely joined together
- Appreciating accurate measuring is crucial to ensure a perfect finished product
- Understanding that measuring time is important when cooking a product
- Understanding the importance of following a recipe in order

FIRST YEAR

Subject Content Design & Technology		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].							
Subject Content Cooking & Nutrition		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.							
		Autumn		Spring		Summer			
National Curriculum		Cooking & Nutrition		Design Make Evaluate Technical Knowledge		Design Make Evaluate Technical Knowledge			
Stimulus		Food Technology ~ Seasonal & Savoury		Greenhouses		Moving Monsters			
YEAR 3	DESIGN			With support, begin 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.		To begin 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.			
	MAKE			With support, generate and develop their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.		With support, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.			
	EVALUATE			With support, select from and use a wide range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.		With support, select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.			
	TECHNICAL KNOWLEDGE			With support, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.		With support, 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.			
YEAR 4	DESIGN			With support and in a group, investigate and analyse a range of existing products.		With support and in a group, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.		With support, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	
	MAKE			To develop their understanding of how to strengthen, stiffen and reinforce basic structures.		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.		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 and explain their rationale.	
	EVALUATE			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.		To generate and develop their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.		To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	
	TECHNICAL KNOWLEDGE			To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.		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 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 explaining their rationale.	
Vocabulary Technical Topic specific		Healthy Caught Process Equipment		Fruit Vegetables Mixing Baking Unhealthy Food groups Processed Protein Kneading Grown Reared Ingredients Dairy Grains 'Farm to fork' Proving pouring techniques		Protection Control Environment Assess Explore Light Water Differences Similarities Constant supply Mass production Consumer Evaluate			
What children will have learnt by the end of the topic				Tiberius – Roman Emperor Sunlight Nutrients Regulated Circulate Frame Stable structure Kibble Palace Temperature Transparent Air Palm House Overheat Selenite Ventilate Victorian era Eden Project Design criteria Finished product Design		Investigate Familiar Objects Examine Describe Object Recognise Complex Control Movement Develop Annotate Design Demonstrate Evaluate Safely Effective			
				Air Sketch Label Technique Pneumatic system Equipment Joining Fixing Components Materials Tools					
				What a greenhouse is used for How a greenhouse helps plants grow To analyse and discuss different types of greenhouses What the term 'stable' means in relation to construction Factors that make a structure stable How to make a structure more/less stable How identify suitable materials for a mini greenhouse Why certain materials are suitable Ways of joining these two materials together To apply their knowledge of stable structures and suitable materials when designing a mini		To recognise familiar objects that use air to make them work To describe how the objects use air to make them work To suggest alternative uses for these familiar objects How simple pneumatic systems work and explain this using appropriate vocabulary To create simple pneumatics systems To suggest ways of using these pneumatic systems in moving monsters To investigate ways of using pneumatic systems with other materials to control movement			

			<p>greenhouse</p> <p>To follow a specific design criterion</p> <p>To identify possible challenging parts of their design/help others to find solutions</p> <p>To follow a design to create a successful product</p> <p>How to amend their design to improve a product/give suggestions to others as solutions to problems</p> <p>How to work safely and sensibly with a range of materials and tools</p> <p>To understand the importance of evaluating a finished product</p> <p>To identify what has been successful with their design</p> <p>To identify any improvements that could be made to the design</p>	<p>Different techniques for joining and fixing components</p> <p>How make effective pneumatic systems</p> <p>To use their knowledge of pneumatic systems to design a moving monster part</p> <p>What materials and components they will need to create their monster</p> <p>To identify areas that could be improved upon in their design</p> <p>To create a monster based on a design</p> <p>To construct an effective pneumatic system to control movement</p> <p>To work safely and effectively with a range of tools and techniques</p> <p>To identify successful areas of their finished products</p> <p>To identify areas that could be improved upon</p> <p>What they would do differently if they were to make their moving monster again</p>
<p>COOKING AND NUTRITION</p> <p>What children will have learnt by the end of the topic</p>	<p>For the children accessing this in Year 3:</p> <p>To know people around the world choose and combine different foods and drinks to make meals and snacks.</p> <p>To know that what people around the world eat depends on reasons such as availability, preference, resources, time, culture and religion.</p> <p>To know that what is eaten in different countries around the world can look different but it usually includes combinations of foods from the same the Eatwell Guide groups.</p> <p>To know that the word 'diet' means the amount and range of food eaten.</p> <p>To know that a variety and balance of food and drink is needed to make a healthy diet.</p> <p>To know that I need to have 6-8 drinks a day and more if it is hot or I am active.</p> <p>In addition to the above, for the children accessing this in Year 4:</p> <p>To know we need to eat foods in the proportions shown by the Eatwell Guide (as well as eating a variety of foods from within the groups) to have a healthy diet.</p> <p>To understand that the different proportions of the Eatwell Guide reflect the proportions of foods which should be eaten from each group.</p> <p>To identify and classify ingredients in composite dishes according to the Eatwell Guide food groups.</p> <p>To know how to use the Eatwell Guide model and messages to help me make healthy choices and plan healthy meals and menus for myself and others.</p> <p>To know that different factors can affect our food choices and I can give some examples of these. E.g. availability, cost, advertising, pressure</p>			
<p>Cross Curricular Links</p>		<ul style="list-style-type: none"> ❖ Science ❖ History ❖ PSHE 	<ul style="list-style-type: none"> ❖ Science ❖ Art 	
<p>Building on from...</p> 	<ul style="list-style-type: none"> • Basic cookery skills to more complex recipes • Rudimentary sewing skills to finer finished items • Basic moveable components to moveable parts with greater detail • Fundamental joining skills to a more refined finish 			

		Autumn	Spring	Summer			
National Curriculum		Design Make Evaluate	Design Make Evaluate Technical Knowledge	Design Make Evaluate			
Stimulus		Packaging	Alarms	Pencil Cases			
YEAR 3	DESIGN	With support, begin 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. With support, generate and develop their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	To begin 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. With support, generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	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.			
	MAKE	With support, select from and use a wide range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. With support, select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	With support, 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 wide range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.			
	EVALUATE	With support and in a group, investigate and analyse a range of existing products. With support and in a group, evaluate their ideas and products against their own design criteria.	With support, investigate and analyse a range of existing products.	To evaluate their ideas and products against their own design criteria.			
	TECHNICAL KNOWLEDGE	With support, develop their understanding of how to strengthen, stiffen and reinforce basic structures.	To begin to understand electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	To develop their understanding of how to strengthen, stiffen and reinforce basic structures.			
YEAR 4	DESIGN	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. To generate and develop their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	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 and explain their rationale. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	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 and explain their rationale.			
	MAKE	To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. 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 select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, explaining their rationale.	Select from and use a wide range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately, demonstrate to a small group. 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 explaining and justifying their rationale.			
	EVALUATE	To investigate and analyse a range of existing products. With support, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	To investigate, analyse and explain about a range of existing products.	To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.			
	TECHNICAL KNOWLEDGE	To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	To understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	To apply and explain their understanding of how to strengthen, stiffen and reinforce more complex structures.			
Vocabulary Technical Topic specific		Investigate Range Examine Purpose Explain Graphics Design Evaluate Process	Product Deconstruct Cardboard Images Nets 3D 2D Structures Mark out Score Software Font	Investigate Activated Discuss Appropriate Scenarios Create Draw Annotate Model Improvement Evaluate Criteria Design	Switches Mains electricity Circuits System Components	Joined Evaluate Annotate Secure Criteria Compare Features	Fastenings Sewing Felt Pins Needles Embroidery thread Patterns Seams Whip stitch Buttons Poppers Toggles Sequins Embellishments Template Zip Running stitch Beads Back stitch Off cuts
What children will have learnt by the end of the topic		That packaging serves a variety of purposes How to deconstruct a packaging box and explain how it was put together The need to extend the net to incorporate tabs for joining That 3-D structures can be constructed from nets To mark out, cut, score and assemble a 3-D net To match different nets to certain product types How graphics are used to create effects That the graphics on a product reflect who and what the packaging is designed for To match a variety of fonts to an intended purpose To apply what they have learnt about packaging when designing their own packaging box To design a product that is suitable for the intended user To incorporate appropriate graphics in their design	To recognise the uses to which alarm systems can be put That switches work in different ways The dangers of mains electricity How a simple circuit works How to experiment with different ways of creating circuits and switches How to work safely with electricity To design an alarm system that is suitable for a particular purpose To apply what they have learnt about alarms, circuits and switches when designing their own alarm systems To discuss and finalise their designs To apply what they have learnt when making their alarm systems How to use a variety of electrical components accurately To discuss their work and suggest areas for improvement Why evaluation is an important part of the designing and making process To evaluate their own finished products fairly	The features of pencil cases To discuss how pencil cases are made and describe what features they have To compare pencil cases based on design criteria How to sew a running stitch How to sew a backstitch How to sew a whip stitch How to create a secure button fastening How to create a secure popper fastening How to create a secure toggle fastening Different ways of adding embellishments to fabric How to securely add patches to felt To use appropriate stitching to attach ribbons and fabric off cuts to felt To design a pencil case for a particular purpose How to draw and label a design appropriately, including the materials they will use To decide on a sensible sequence of steps to create a pencil case			

	<p>To follow a design to create a packaging box</p> <p>To work with care and accuracy</p> <p>To identify ways their product could be improved as they are making their packaging box</p> <p>How to evaluate their own product fairly</p> <p>How to comment on the work of others and say what they think and feel about them</p> <p>Ways in which they could improve their product if they were to make it again</p>	<p>To discuss their work and the work of others fairly</p>	<p>To follow a design accurately to make a pencil case</p> <p>To create a pencil case using sewn seams and sewn embellishments</p> <p>To evaluate their finished work fairly and accurately</p>
Cross Curricular Links	<ul style="list-style-type: none"> ❖ Science ❖ History ❖ PSHE 	<ul style="list-style-type: none"> ❖ PSHE ❖ Science ❖ PE ❖ Computing 	<ul style="list-style-type: none"> ❖ History ❖ French
<p>What comes next...</p> 	<p>Please refer to your child' chosen middle school curriculum</p>		