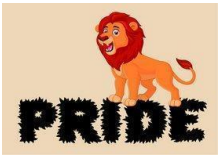
Design & Technology Curriculum Intent

Our Vision & Rationale

At St. Marks CofE Primary school we want every pupil to develop their creativity, pride and risk taking when exploring the world of design and technology. We want to give children the chance to be imaginative, creative and practical learners. We will do this by focusing on making the learning relevant to the children and their lives and exposing them to the following skills: design, construction, cooking and nutrition, use of tools, exploring mechanisms, electrical systems, computing and evaluating existing products. Our teaching will ensure DT learning is a process, where children are presented with a problem to solve, given time to research and then design a solution, learn a key skill and then apply it to their own design and then their model, all whilst encouraging creativity and independence. Once the product is completed, evaluating in DT should encourage children to become more resilient learners, giving them the opportunity to learn from mistakes and improve their models.

An effective design engineer

DESIGN	**MAKE**	**EVALUATE**	**TECHNICAL KNOWLEDGE**
Understands the problem at hand, including: contexts, users and purposes and existing ideas. Generates, draws, models and communicates ideas.	Can plan the creation of ideas, create prototypes, and has the practical skills and techniques to create.	Can critically evaluate own ideas and products, as well as those which already exist. Has an understanding of the historical development of products.	Understands the strengths and issues of different materials and tools Understands how to products physically work (e.g. Cams) Can use tools carefully and accurately.
These learning behaviours are particularly helpful in becoming an effective design engineer:			

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims
The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Attainment targets
By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

SEND
Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Teachers will consider support needed for children moving up from Year R into Year 1 with low Physical Development and this will continue to be a consideration throughout the School. Unit based assessments will indicate areas individual children across the cohort will need support with to ensure they can access the learning in the next Year Group. Teachers to look at passports/learning plans at the beginning of each unit of work to identify how we can adapt the planning to meet the needs of the child.

DIVERSITY
Details of inclusions of Diversity are identified within appropriate units of work on Medium Term Plans.

Design & Technology Early Years

Early Learning Goal updated from New Curriculum 2021:

Expressive Arts and Design:

3-4 Years:

- Join different materials and explore different textures.
- Create closed shapes with continuous lines, and begin to use these shapes to represent objects.

- Draw with increasing complexity and detail, such as representing a face with a circle and including details.

Reception:

- Return to and build on their previous learning, refining ideas and developing their ability to represent them.
- Create collaboratively sharing ideas, resources and skills.

Early Learning Goal:

Creating with materials

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- Share their creations, explaining the process they have used.

Learning Areas where children can explore DT: Creative Area, Construction Area, Outdoor Big Build Area.

Key Skills DT:

Plan	**Make (EAD)**	**Evaluate**
Linked to Understanding the World: Can they make observations about the features of objects? Can they use their sense to explore and describe objects? Can they think of some ideas of their own? **Linked to Creating with materials** Can they choose how best to approach a task?	**Linked to Communication, Language and Literacy:** Can they explain what they are making? Can they explain which tools they are making and why? Can they say what they like about their model and how they would make it better? **Linked to Creating with materials** Can they select appropriate resources and tools? Can they use tools to manipulate materials?	**Characteristics of Effective Learning:** Can they identify success and next steps? Can they check how well their activity is going? Can they change their strategy as needed? Can they review how well their approach worked?

	Linked to Physical Development (Fine Motor Control) Can they begin to show accuracy and care when drawing a design? Can they use a range of small tools safely and effectively?	

Key Skills FT:

Growing	**Cooking**	**Nutrition**	**Enjoying Food**
Linked to Understanding the World (The World): Do they understand what plants need to grow?	**Linked to Creating with materials** Can they select and use appropriate tools needed for a recipe? **Linked to Physical Development – Fine Motor Control** Can they use tools effectively and safely? Can they complete basic hygiene tasks? (e.g. wash hands)	**Linked to PSED – Managing self** Do they understand that food is a basic requirement for life? Do they understand that we need food to grow, be active and maintain health? (ELG) **Linked to Understanding the World :** Can they identify and talk about a range of fruits and vegetables?	**Linked to PSED – Managing self**Can they talk about foods they like and dislike with reason? Are they willing to try new foods? **Linked to Understanding the world (People and Communities)** Can they discuss the food that they eat during special occasions or cultural celebrations?

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These learning behaviours are particularly helpful in becoming an effective design engineer:			

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- —critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Design & Technology Key Stage One

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.

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.

Overall project	**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 ● 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.

DT Learning Journey	YEAR 1	

National Curriculum Requirements

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, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:

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.

	Autumn		Spring		Summer	
Units		Fruit and vegetable smoothie		Wheels and Axles	Constructing a windmill	Making a seed pouch
POS Focus		Cooking and Nutrition		Mechanisms		Textiles
Technical Vocabulary		● Blender ● Carton ● Fruit ● Healthy ● Ingredients ● Peel ● Peeler ● Recipe ● Slice ● Smoothie ● Stencil ● Template ● Vegetable		● Axle ● Axle holder ● Chassis ● Design ● Evaluation ● Fix ● Mechanic ● Mechanism ● Model ● Test ● Wheel	Client ● Design ● Evaluation ● Net ● Stable ● Strong ● Test ● Weak ● Windmill	● Decorate ● Design ● Fabric ● Glue ● Model ● Hand puppet ● Safety pin ● Staple ● Stencil ● Template

Skills by Unit		**Design:** I can design smoothie carton packaging by-hand or on ICT software. **Make:** I can chop fruit and vegetables safely to make a smoothie. I can identify if a food is a fruit or a vegetable. I can learn where and how fruits and vegetables grow. **Evaluate:** I can taste and evaluate different food combinations. I can describe appearance, smell and taste. I can suggest information to be included on packaging. **Technical Knowledge:** I can understand the difference between fruits and vegetables. I can describe and group fruits by texture and taste.		**Design:** I can explain how to adapt mechanisms, using bridges or guides to control the movement. I can design a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move. I can create clearly labelled drawings which illustrate movement. **Make:** I can adapt mechanisms. **Evaluate:** I can test a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. I can review the success of a product by testing it with its intended audience. I can test mechanisms, identify what stops wheels from turning, and know that a wheel needs an axle in order to move. **Technical Knowledge:**	**Design:** I can use a template to create a design for a seed pouch. **Make:** I can cut fabric neatly with scissors. I can use joining methods to decorate a seed pouch. I can sequence steps for construction. **Evaluate:** I can reflect on a finished product, explain likes and dislikes. **Technical Knowledge:** I can learn different ways in which to join fabrics together: pinning, stapling, gluing.	.**Design:** I can learn the importance of a clear design criteria I can include individual preferences and requirements in a design. **Make:** I can make stable structures from card, tape and glue. I can follow instructions to cut and assemble the supporting structure of a windmill. I can make functioning turbines and axles which are assembled into a main supporting structure. **Evaluate:** I can evaluate a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't. I can suggest points for improvements. **Technical Knowledge:** I can describe the purpose of

				I can use the vocabulary: up, down, left, right, vertical and horizontal to describe movement. I can identify what mechanism makes a toy or vehicle roll forwards. I can learn that for a wheel to move it must be attached to an axle.		structures, including windmills. I can learn how to turn 2D nets into 3D structures. I can learn that the shape of materials can be changed to improve the strength and stiffness of structures. I can understand that cylinders are a strong type of structure that are often used for windmills and lighthouses. I can understand that windmill turbines use wind to turn and make the machines inside work. I can understand that axles are used in structures and mechanisms to make parts turn in a circle. I can develop an awareness of different structures for different purposes.

SEND/	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for children moving up from Year R with low Physical Development.					
DIVERSITY	Children will have exposure to fruits and vegetables from around the world.				Children will have exposure to structures from different cultures (bridges/windmills etc)	

DT Learning Journey				**YEAR 2**	
National Curriculum Requirements					
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, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to: **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.					
	Autumn		**Spring**		**Summer**	
Units	Puppets (Running stitch)		A balanced diet			Making a moving monsters (could be an alien/space man)
POS Focus	Textiles		Cooking and Nutrition			Mechanisms

Technical Vocabulary	● Accurate ● Fabric ● Knot ● Pouch ● Running-stitch ● Sew ● Shape ● Stencil ● Template ● Thimble		●Alternative ● Diet ● Balanced diet ● Evaluation ● Expensive ● Healthy ● Ingredients ● Nutrients ● Packaging ● Refrigerator ● Sugar ● Substitute			● Evaluation ● Input ● Lever ● Linear motion ● Linkage ● Mechanical ● Mechanism ● Motion ● Oscillating motion ● Output ● Pivot ● Reciprocating motion ● Rotary motion ● Survey
Year 2						
Skills by Unit	**Design:** I can design a pouch. **Make:** I can select and cut fabrics for sewing. I can decorate a puppet using fabric glue or running stitch. **Evaluate:** I can troubleshoot scenarios posed by the teacher. I can evaluate the quality of the stitching on others' work. I can discuss as a class, the success of their stitching against the success criteria. I can identify aspects of my peers' work that I particularly like and why. **Technical knowledge:** I can join items using fabric glue or stitching		**Design:** I can design a healthy wrap based on a food combination which works well together. **Make:** I can slice food safely using the bridge or claw grip. I can construct a wrap that meets a design brief. **Evaluate:** I can describe the taste, texture and smell of fruit and vegetables. I can taste test food combinations and final products. I can describe the information that should be included on a label. I can evaluate which grip was most effective.			**Design:** I can create a class design criteria for a moving monster. I can design a moving monster for a specific audience in accordance with a design criteria. I can select a suitable linkage system to produce the desired motions. **Make:** I can make linkages using card for levers and split pins for pivots. I can experiment with linkages adjusting the widths, lengths and thicknesses of card used.

	Identifying benefits of these techniques. I can thread a needle. I can sew running stitch, with evenly spaced, neat, even stitches to join fabric. I can neatly pin and cut fabric using a template.		**Technical knowledge:** I can understand what makes a balanced diet. I know where to find the nutritional information on packaging. I know the five food groups.			I can cut and assemble components neatly. I can select materials according to their characteristics. I can follow a design brief. **Evaluate:** I can evaluate my own designs against design criteria. I can use peer feedback to modify a final design. I can evaluate different designs. I can test and adapt a design. **Technical knowledge:** I can learn that mechanisms are a collection of moving parts that work together in a machine. I can learn that there is an input and output in a mechanism. I can identify mechanisms in everyday objects. I can learn that a lever is something that turns on a pivot.

						I can learn that a linkage is a system of levers that are connected by pivots.
SEND	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for chidlren with low physical development / support with fine motor control.					
Diversity				Children will have exposure to fruits and vegetables from around the world.		Children will be exposed to a range of structures from different communities from around the world.

Design & Technology Key Stage Two					
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. 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.					
Overall Project	**Design:** ● use research and develop design criteria to inform	**Make:** ● select from and use a wider range of tools and	**Evaluate:** ● investigate and analyse a range of existing products	**Technical Knowledge:** ● apply their understanding of how to strengthen,	**Food Technology:**

	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	equipment to perform practical tasks 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 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	stiffen and reinforce more complex structures ● understand and use mechanical systems in their products ● understand and use electrical systems in their products ● apply their understanding of computing to program, monitor and control their products.	● 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.

DT Learning Journey	**YEAR 3**	

National Curriculum Requirements

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. **Food 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.						
	Autumn		**Spring**		**Summer**	
Units		Pneumatic toys (Iron Man's head)		Eating Seasonally	Making a cushion	
POS Focus		Mechanisms (Mechanical systems)		Food and Nutrition	Textiles	
Technical Vocabulary		● Exploded-diagram ● Function ● Input ● Lever ● Linkage ● Mechanism ● Motion ● Net ● Output ● Pivot ● Pneumatic system ● Thumbnail sketch		● Climate ● Dry climate ● Exported ● Imported ● Mediterranean climate ● Nationality ● Nutrients ● Polar climate ● Recipe ● Seasonal food ● Seasons ● Temperate climate ● Tropical climate	● Accurate ● Applique ● Cross-stitch ● Cushion ● Decorate ● Detail ● Fabric ● Patch ● Running-stitch ● Seam ● Stencil ● Stuffing ● Target audience ● Target customer ● Template	
Year 3						
Skills by Unit		**Design:** I can design a toy which uses a pneumatic system. I can develop design criteria from a design brief.		**Design:** I can create a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and	**Design:** I can design and make a template from an existing passport cover and apply individual design criteria. **Make:**	

		I can generate ideas using thumbnail sketches and exploded diagrams. I can learn that different types of drawings are used in design to explain ideas clearly. **Make:** I can create a pneumatic system to create a desired motion. I can build secure housing for a pneumatic system. I can use syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. I can select materials due to their functional and aesthetic characteristics. I can manipulate materials to create different effects by cutting, creasing, folding, weaving. **Evaluate:** I can use the views of others to improve designs. I can test and modify the outcome,		appearance of the dish. **Make:** I can prepare myself and a workspace to cook safely in, learning the basic rules to avoid food contamination. I can follow the instructions within a recipe. **Evaluate:** I can establish and use design criteria to help test and review dishes. I can describe the benefits of seasonal fruits and vegetables and the impact on the environment. I can suggest points for improvement when making a seasonal tart. **Technical knowledge:** I can learn that climate affects food growth. I can work with cooking equipment safely and hygienically. I can learn that imported foods travel from far away and this can negatively impact the environment.	I can follow design criteria to create a cushion. I can select and cut fabrics with ease using fabric scissors. I can sew cross stitch to join fabric. I can decorate fabric using appliqué. I can complete design ideas with stuffing and sewing the edges. **Evaluate:** I can evaluate an end product and think of other ways in which to create similar items. **Technical knowledge:** I can thread needles with greater independence. I can tie knots with greater independence. I can sew cross stitch and appliqué. I can understand the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance. I can understand that fabrics can be layered for effect.	

		suggesting improvements. I can understand the purpose of exploded-diagrams through the eyes of a designer and their client. **Technical knowledge:** I can understand how pneumatic systems work. I can learn that mechanisms are a system of parts that work together to create motion. I can understand that pneumatic systems can be used as part of a mechanism. I can learn that pneumatic systems force air over a distance to create movement.		I can learn that vegetables and fruit grow in certain seasons. I can learn that each fruit and vegetable gives us nutritional benefits. I can learn how to use, store and clean a knife safely.		
Diversity						
SEND/	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for children with low physical development / support with fine motor control.					

DT Learning Journey	YEAR 4	

National Curriculum Requirements

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.

Food 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.

	Autumn		**Spring**		**Summer**	
Units		Fastenings	Adapting a recipe			(Roman) Pavilions
POS Focus		Textiles	Food and Nutrition			Structures
Technical Vocabulary		● Aesthetic ● Assemble ● Book sleeve ● Design criteria ● Evaluation ● Fabric ● Fastening ● Mock-up ● Net ● Running-stitch ● Stencil ● Target audience ● Target customer ●	● Adapt ● Budget ● Cooling rack ● Creaming ● Equipment ● Evaluation ● Flavour ● Ingredients ● Method ● Net ● Packaging ● Prototype ● Quantity ● Recipe ● Rubbing ●			● Aesthetic ● Cladding ● Design criteria ● Evaluation ● Frame structure ● Function ● Inspiration ● Pavilion ● Reinforce ● Stable ● Structure ● Target

		Template	Sieving ● Target audience ● Unit of measurement ● Utilities			audience ● Target customer ● Texture ● Theme
Year 4						
Skills by Unit		**Design:** I can write design criteria for a product, articulating decisions made. I can design a personalised Book sleeve **Make:** I can make and test a paper template with accuracy and in keeping with the design criteria. I can measure, mark and cut fabric using a paper template. I can select a stitch style to join fabric, working neatly sewing small neat stitches. I can incorporate a fastening to a design **Evaluate**: I can test and evaluate and end product against a design criteria. I can decide how many points of my design criteria should be met to be successful.	**Design:** I can design a biscuit within a given budget, drawing upon previous taste testing. **Make:** I can follow a baking recipe. I can cook safely, following basic hygiene rules. I can adapt a recipe. **Evaluate:** I can evaluate a recipe, considering: taste, smell, texture and appearance. I can describe the impact of the budget on the selection of ingredients. I can evaluate and compare a range of products. I can suggest modifications. **Technical knowledge:** I can understand the impact of the cost and importance of budgeting while planning ingredients for biscuits.			**Design:** I can design a stable pavilion structure that is aesthetically pleasing and select materials to create a desired effect. I can build frame structures designed to support weight. **Make:** I can create a range of different shaped frame structures. I can make a variety of free standing frame structures of different shapes and sizes. I can select appropriate materials to build a strong structure and for the cladding. I can reinforce corners to strengthen a structure. I can create a design in

		I can suggest modifications for improvement. I can articulate the advantages/disadvantages for different fastening types. **Technical knowledge:** I can understand that there are different types of fastenings and what they are. I can articulate the benefits and disadvantages of different fastening types.	I can understand the environmental impact on future product and cost of production.			accordance with a plan. I can learn how to create different textural effects with materials. **Evaluate:** I can evaluate structures made by the class. I can Describe what characteristics of a design and construction made it the most effective. I can consider effective and ineffective designs. **Technical knowledge:** I know what pavilions are and their purpose. I can build on prior knowledge of net structures and broadening knowledge of frame structures. I know that architects consider light, shadow and patterns when designing. I can Implement frame and shell structure knowledge.

						I can consider effective and ineffective designs.
/ Diversity			Children will spend time discussing different budgets for buying their food, introducing an understanding of socio-economic diversity			Use examples of structures from around the world and different communities.
SEND	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for children with low physical development / support with fine motor control.					

DT Learning Journey	**YEAR 5**	

National Curriculum Requirements

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.

Food 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.

	Autumn		**Spring**		**Summer**	
Units		Bridges		What could be healthier?	Stuffed toys	
POS Focus		Structures		Food and Nutrition	Textiles	
Technical Vocabulary		● Abutment ● Accurate ● Arched bridge ● Beam bridge ● Coping saw ● Evaluation ● File ● Mark out ● Material properties ● Measure ● Predict ● Reinforce ● Research ● Sandpaper ● Set square ● Suspension bridge ● Tenon saw ● Test ● Truss bridge ● Wood		● Beef ● Cross-contamination ● Diet ● Ethical issues ● Farm ● Healthy ● Ingredients ● Method ● Nutrients ● Packaging ● Reared ● Recipe ● Research ● Substitute ● Supermarket ● Vegan ● Vegetarian ● Welfare	● Accurate ● Annotate ● Appendage ● Blanket-stitch ● Design criteria ● Detail ● Evaluation ● Fabric ● Sew ● Shape ● Stuffed toy ● Stuffing ● Template	
Year 5						
Skills by Unit (Make I can statements)		**Design:** I can design a stable structure that is able to support weight. I can create a frame structure with focus on triangulation. **Make:**		**Design:** I can adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients.	**Design:** I can design a stuffed toy considering the main component shapes required and creating an appropriate template. I can consider the proportions of	

		I can make a range of different shaped beam bridges. I can use triangles to create truss bridges that span a given distance and supports a load. I can build a wooden bridge structure Independently measuring and marking wood accurately. I can select appropriate tools and equipment for particular tasks. I can use the correct techniques to saws safely. I can identify where a structure needs reinforcement and use card corners for support. I can explain why selecting appropriate materials is an important part of the design process. I can understand basic wood functional properties **Evaluate:** I can adapt and improve my own bridge structure by identifying points of weakness and		I can write an amended method for a recipe to incorporate the relevant changes to ingredients. I can design appealing packaging to reflect a recipe. **Make:** I can cut and prepare vegetables safely. I can use equipment safely, including knives, hot pans and hobs. I know how to avoid cross-contamination. I can follow a step by step method carefully to make a recipe. **Evaluate:** I can identify the nutritional differences between different products and recipes. I can identify and describe healthy benefits of food groups. **Technical knowledge:** I can understand where food comes from - learning that beef is from cattle and how beef is reared and processed. I can understand what constitutes a balanced diet.	individual components. **Make:** I can create a 3D stuffed toy from a 2D design. I can measure, mark and cut fabric accurately and independently. I can create strong and secure blanket stitches when joining fabric. I can use applique to attach pieces of fabric decoration. **Evaluate:** I can test and evaluate an end product and give points for further improvements. **Technical knowledge:** I can learning to sew blanket stitch to join fabric I can apply blanket stitch so the space between the stitches are even and regular. I can thread needles independently.	

		reinforcing them as necessary. I can suggest points for improvements for own bridges and those designed by others **Technical knowledge:** I can explore how to create a strong beam Identifying arch and beam bridges and understanding the terms: compression and tension. I can identify stronger and weaker structures. I can find different ways to reinforce structures. I can understand how triangles can be used to reinforce bridges. I can articulate the difference between beam, arch, truss and suspension bridges.		I can learn how to adapt a recipe to make it healthier. I can compare two adapted recipes using a nutritional calculator and then identify the healthier option.		
I **Diversity**		Use examples of structures from around the world		Introducing children to culturally diverse food.	Consider the impact their model may have on people from diverse cultures and backgrounds, including, people with physical disabilities.	

SEND	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for children with low physical development/poor Fine motor control

DT Learning Journey	**YEAR 6**	

National Curriculum Requirements

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.

Food 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.

	Autumn		**Spring**		**Summer**	
Units		Come Dine with me	Playgrounds	Linked in with playgrounds	Automata Toys (Cams)	
POS Focus		Food and Nutrition	Structures/electrical system link	Electrical systems	Mechanical systems	

Technical Voabulary		● Accompaniment ● Collaboration ● Cookbook ● Cross-contamination ● Equipment ● Farm ● Flavour ● Illustration ● Imperative-verb ● Ingredients ● Method ● Nationality ● Preparation ● Processed ● Reared ● Recipe ● Research ● Storyboard ● Target audience ● Top tips ● Unit of measurement	● Adapt ● Apparatus ● Bench hook ● Cladding ● Coping saw ● Design ● Dowel ● Evaluation ● Feedback ● Idea ● Jelutong ● Landscape ● Mark out ● Measure ● Modify ● Natural materials ● Plan view ● Playground ● Prototype ● Reinforce ● Sketch ● Strong ● Structure ● Tenon saw ● Texture ● User ● Vice ● Weak	● Assemble ● Battery ● Battery pack ● Benefit ● Bulb ● Bulb holder ● Buzzer ● Circuit ● Circuit symbol ● Component ● Conductor ● Copper ● Design ● Design criteria ● Evaluation ● Fine motor skills ● Fit for purpose ● Form ● Function ● Gross motor skills● Insulator ● LED ● User	● Accurate ● Assembly-diagram ● Automata ● Axle ● Bench hook ● Cam ● Clamp ● Component ● Cutting list ● Diagram ● Dowel ● Drill bits ● Exploded-diagram ● Finish ● Follower ● Frame ● Function ● Hand drill ● Jelutong ● Linkage● Mark out ● Measure ● Mechanism ● Model ● Research ● Right-angle ● Set square ● Tenon saw	
Year 6						
Skills by Unit		**Design:** I can write a recipe, explaining the key steps, method and ingredients. I can include facts and drawings from research undertaken. **Make:** I can follow a recipe, including using the correct quantities of each ingredient. I can adapt a recipe based on research. I can work to a given timescale. I can work safely and hygienically with independence.	**Design:** I can design a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs. **Make:** I can build a range of play apparatus structures drawing upon new and prior knowledge of structures. I can measure, mark and cut wood to	**Design:** I can design a steady hand game - identifying and naming the components required. I can draw a design from three different perspectives. I can generate ideas through sketching and discussion. I can model ideas through prototypes. I can understand the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'. **Make:**	**Design:** I can experiment with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. I can understand how linkages change the direction of a force. I can make things move at the same time. I can understand and draw cross-sectional diagrams to show the inner-workings of the automata. **Make:**	

		Evaluate: I can evaluate a recipe, considering: taste, smell, texture and origin of the food group. I can taste test and score final products I can suggest and write up points of improvements in productions. I can evaluate health and safety in production to minimise cross contamination. **Technical knowledge:** I can learn how to research a recipe by ingredient. I can record the relevant ingredients and equipment needed for a recipe. I can understand the combinations of food that will complement one another. I can understand where food comes from, describing the process of 'Farm to Fork' for a given ingredient.	create a range of structures. I can use a range of materials to reinforce and add decoration to structures. **Evaluate:** I can improve a design plan based on peer evaluation. I can test and adapt a design to improve it as it is developed. I can identify what makes a successful structure. **Technical knowledge:** I know that structures can be strengthened by manipulating materials and shapes I can identify the shell structure in everyday life (cars, aeroplanes, tins, cans) I can understand man made and natural structures	I can construct a stable base for a game. I can accurately cut, fold and assemble a net. I can decorate the base of the game to a high quality finish. I can make and test a circuit incorporating a circuit into a base. **Evaluate:** I can test my own and others finished games, identifying what went well and making suggestions for improvement. I can gather images and information about existing children's toys. I can analyse a selection of existing children's toys. **Technical knowledge:** I can learn that batteries contain acid, which can be dangerous if they leak. I can identify and name the circuit components in a steady hand game.	I can measure, mark and check the accuracy of the jelutong and dowel pieces required. I can measure, mark and cut components accurately using a ruler and scissors. I can assemble components accurately to make a stable frame. I can understand that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles. I can select appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set. **Evaluate:** I can evaluate the work of others and receive feedback on my own work. I can apply points of improvement. I can describe changes they would make/do if they were to do the project again.	

					Technical knowledge: I can use a bench hook to saw safely and effectively. I can explore cams, learning that different shaped cams produce different follower movements. I can explore types of motions and direction of a motion.	
Diversity		Introducing children to culturally diverse food. Discuss socio-economic diversity when planning meals.	Use examples of structures from around the world		Consider the impact their model may have on people from diverse cultures and backgrounds, including, people with physical disabilities	
SEND	Children identified with additional needs in specific areas of DT will receive support from adults to complete the tasks. As the focus on the DT units of work is practical, all children, regardless of their literacy/maths ability will be able to access the learning. Consider support needed for children with low physical development / support with fine motor control.					