Our Approach to the Design Technology Curriculum

Discover Learn Develop

DISCOVER	LEARN	DEVELOP
INTENT: **Curriculum Design, Coverage and Appropriateness** **(Policy, Culture, Scope)**	**IMPLEMENTATION:** **Curriculum delivery, Teaching and Assessment** **(Pedagogy, Components , Sequencing)**	**IMPACT:** **Attainment and Progress** **(Memory, Assessment, Systems)**
At St Kew, we love getting stuck in with designing, creating, building and evaluating. Using our creative skills to design and make products aimed at real and relevant problems. We believe that Design & Technology should be about supporting pupils to take risks, becoming innovative citizens for the world in which they live. Through the evaluation of Design and Technology we want to inspire children to understand the impact of design and technology and its essential contribution to the creativity, culture, wealth and well-being of the nation. At St Kew, we aim to provide children with a DT education that is relevant in our rapidly changing world. We want to encourage our children to become problem solvers who can work creatively on a shared project. We believe that high-quality DT lessons will inspire children to think independently, innovatively and develop creative, procedural and technical understanding. Children will be exposed to a wide range of media including textiles, food and woodwork; through this, children will develop their skills, vocabulary and resilience.	Our DT curriculum provides children with opportunities to research, represent their ideas, explore and investigate, develop their ideas, make a product and evaluate their work. Children learn about Design & Technology through a variety of projects, linked to their topic learning in class or with a 'product' in mind for marketing and selling at the annual Christmas or Summer Fayre in collaboration with 'Helping Hands', our Parent & Teacher Association.. Through the development of skills children begin designing appealing products for themselves before linking this understanding to the future design of purposeful and functional projects. Children are encouraged to evaluate existing products and discuss improvements to their designs and products.	Our pupils 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. The impact of our curriculum is based on the reflection on standards achieved against planned outcomes; pupil discussions about their learning (their thoughts, ideas and processes) and the evaluations of their work. As designers, children develop skills and attributes they can use beyond school and into adulthood.

LEARNING TO LEARN SKILLS

At St Kew, we are passionate about active learning and believe that children learn and develop best by 'doing'. Learning is a life-long experience and our 'learning to learn skills' help pupils to investigate and experience things, 'have a go', concentrate and keep on trying if they encounter difficulties, enjoy achievements, have and develop their own ideas, make links between these ideas, and develop strategies for doing things. This builds a foundation for igniting their curiosity and enthusiasm for learning. In Design Technology, all Learning to Learn skills are used but the following skills are utilised in particular.

READINESS	RESPONSIBILITY	RELATIONSHIPS	RESILIENCE	RESOURCEFULNESS	REFLECTIVENESS
I ensure I have everything I need.	I ensure I play my part in a group project.	I can work as part of a group to create a product.	I can work out how to improve my design or creation.	I can use research to help me design and make my product.	I can evaluate my product against a set of criteria.

Rolling Programme

Newton (Year 1)		Armstrong (Year 2, 3 & 4)			Einstein (Year 4, 5 & 6)		
Cycle A	**Cycle B**	**Cycle A**	**Cycle B**	**Cycle C**	**Cycle A**	**Cycle B**	**Cycle C**
Xmas Christmas craft (PTA sale)	**Xmas** Christmas craft (PTA sale)	**Xmas** Food: biscuits	**Xmas** Electrical circuits: Rudolph light up decoration	**Xmas** Textiles: sewing decorations	**Christmas** Research/design and make a box of sweets (to include the presentation box and sweets e.g. truffles/ peppermint creams)	**Christmas** Light up sign for Rudolph or Santa (Electrical systems)	**Christmas** Puppet/decorations (Textiles - sewing)

	Moving Parts Traditional Tales						

Construction Bug Hotels		**Fire Engines** Mechanical systems	**Pizzas** Italian food	**Vikings** Woodwork (throne)	**WW2** Cooking – rations **Summer Fayre** Research, design and make a game for the fayre	**Healthy Week** Plan and cook a savoury dish **Summer Fayre** Research, design and make a game for the fayre	**Ancient Greeks** Plan a menu **Summer Fayre** Research, design and make a game for the fayre

Design and Technology Skills Progression

EYFS Understanding the World – The Natural World
3 and 4 year olds:
Personal, Social and Emotional Development: Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.
Physical Development: Use large-muscle movements to wave flags and streamers, paint and make marks. Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors.
Understanding the World: Explore how things work.
Expressive Arts and Design: Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.

Reception:
Physical Development: Progress towards a more fluent style of moving, with developing control and grace. Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.
Expressive Arts and Design: Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.

ELG:
Physical Development Fine Motor Skills: Use a range of small tools, including scissors, paintbrushes and cutlery.
Expressive Arts and Design 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.

National Curriculum Area and Aim		Y1	Y2	Y3	Y4	Y5	Y6
DESIGN	Develop the creative, technical and practical expertise needed to perform everyday tasks confidently.	I can research other designs similar to my own. I can plan a purposeful and appealing product. I can describe and explain the purpose of my design to others.	I can research designs similar to my own, discussing the advantages and disadvantages of my findings. I can plan a purposeful, functional and appealing product. I can draw and discuss my plan, making adjustments when necessary.	I can complete and discuss a detailed plan using research, such as information about the target audience to inform my own ideas. I can think of innovative ideas different to existing designs. I can create a design criteria that is functional and fit for the purpose of a particular individual or group. I can complete a detailed and annotated sketch, or prototype, which can be described in detail to others.	I can plan and clarify my ideas through discussion and detailed research on the target audience. I can think of an innovative design, which will be developed and reviewed alongside the design criteria. I can create a detailed design criteria that is functional and fit for the purpose of particular individuals or groups. I can complete annotated sketches and prototypes that can be communicated clearly to others.	I can think of innovative ideas using detailed research to help inform my own plan, including surveys, interviews, or questionnaires as well as discussion with peers. I can plan and design an innovative, functional, appealing product fit for purpose for the intended individual or group based on the design specification. I can annotate different design criteria, including sketches, prototypes, cross sectional diagrams, and where appropriate computer-aided design, that can be communicated clearly to others.	I can gather appropriate information including extensive research, such as surveys, interviews and questionnaires to inform my own original ideas. I can develop a detailed design criteria for an innovative, functional, appealing products that are fit for purpose. I can generate and develop innovative ideas and share these through discussion. I can create annotated design criteria including draft and final sketches, prototypes, cross sectional and exploded diagrams, as well as computer- aided design to develop and communicate their ideas.

MAKE	To apply and develop the skill to create products that solve real and relevant problems.	I can select and use simple tools to perform practical tasks for example cutting and joining. I can select from and use a wide range of materials, including construction blocks and textiles.	I can plan my next step and suggest what to do next. I can select and effectively use tools and equipment, apply different skills and techniques to perform practical tasks (cutting, shaping, joining and finishing) as well as explaining their methods and choices. I can select from and use a wide range of materials and components, including construction materials and textiles according to their characteristics.	I can plan the main stages of making my product. I can select from and use a wider range of tools and equipment accurately, which are suitable for the task, to perform practical tasks, including cutting, shaping, joining and finishing. I can select from and use a wider range of materials and components, including construction materials and textiles according to their functional properties.	I can plan and order the main stages of making. I can select from and use a wide range of tools and equipment accurately to measure, mark up, cut, score, and shape. I can explain my choice of materials, according to their function and aesthetic qualities. I can select from and use a wide range of materials successfully, including construction and electrical components, according to their function and properties.	I can plan and write up the main stages of making (instructions), including a detailed plan stating the equipment and materials needed to complete the task. I can select from and use a range of appropriate tools and equipment accurately to measure, mark up, cut, score and shape combining appropriate materials and resources. I can explain and evaluate my choice of materials, utensils, equipment, according to their function properties and aesthetic qualities.	I can write up and communicate my plan and step-by-step instructions, including a list of equipment, tools, materials and components needed to complete the task. I can competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, as well as securely connect electrical components. I can consider and apply finishing and decorative techniques that would make the product more aesthetically appealing. I can competently explain and evaluate my choice of materials, utensils, equipment, according to their function properties and aesthetic qualities.
EVALUATE	Learning the importance of critical evaluation.	I can explore and evaluate some existing products similar to my own. I can evaluate my ideas and products against design a criteria. I can talk about my design ideas and what I am making. I can discuss and consider the purpose of different products, thinking about what I like and dislike and how the products will be used.	I can explore and evaluate a range of existing products similar to my own. I can evaluate my ideas and products against a design criteria. I can make simple judgements about my own ideas and products against a design criteria. I can suggest how my designs and products can be improved, considering my likes and dislikes as well as how products work, how they are used and by whom.	I can investigate and analyse a range of existing products, considering how well the products have been designed and made, and if they meet the audiences' needs and wants. I can use the design criteria to test my own ideas and products. I can consider the views of others in order to improve my work. I have a basic understanding inventors, designers, engineers and manufacturers.	I can investigate and analyse a range of existing products, considering different aspects of design, such as how well the products have been designed and made, why particular materials have been chosen, when and how products were made and whether they can be recycled or reused. I can use the design criteria to test and evaluate my ideas and products, with the intended user and purpose in mind. I can evaluate the strengths and areas for development in my own ideas and products, as well as considering the views of others including intended users to improve my work. I am aware of different inventors, designers, engineers and manufacturers and have an understanding of the products they have invented and developed.	I can investigate and critically analyse a range of existing products linked to my final product, considering different aspects of design, such as how well the products have been designed and made, why particular materials have been chosen, when and how products were made and whether they are innovative and sustainable. I can use the design criteria to test and evaluate my ideas and products with the intended user in mind, considering the quality of the design, manufacture, and functionality and whether it is fit for purpose. I can critically evaluate the strengths and areas for development in my own ideas and products, as well as considering the views of others including intended users to improve my work. I can discuss different inventors, designers, engineers and manufacturers and have an understanding of the products they have invented and developed.	I can investigate and critically analyse a range of existing products linked to their final product, considering how well the products have been designed and made, why particular materials have been chosen, when and how products were made and whether they are innovative, cost effective and sustainable and the impact of products beyond their intended purpose. I can use the design criteria to continually test and evaluate my ideas and products with the intended user in mind, considering the quality of the design, manufacture, functionality and whether it is fit for purpose. I can critically evaluate the strengths and areas for development in my own ideas and products throughout the design process, whilst constantly considering the views of others including intended users to improve my work. I can discuss and compare different inventors, designers, engineers and manufacturers and have an understanding of the products they have invented and developed.

TECHNICAL KNOWLEDGE	Understanding the importance of 'how' and 'why' technical objects work.	I have a basic understanding about the working characteristics of materials and components. I can build a structure, exploring how it can be made stronger, stiffer and more stable. I can explore and use some mechanisms in my product, for example a lever or a slider.	I have an understanding about the simple working characteristics of materials and components. I can build different structures, exploring and understanding how it can be made stronger, stiffer and more stable. I can evaluate and explain how I made my structure more stable, whilst beginning to use the correct technical vocabulary. I can explore and use mechanisms in my product, including levers, sliders, wheels and axels.	I can apply my understanding of how to strengthen and stiffen more complex structures. I can evaluate and explain how I made my structure more stable, using the correct technical vocabulary. I understand and can use some mechanical systems in my products, for example, gears, pulleys, cams, levers or linkages. I know how different mechanical systems such as levers and linkages create movement. I have a basic understanding of electrical systems which can be applied to my products, for example, incorporating switches or buzzers. I can apply my understanding of computing to program, attempting to monitor and control my product.	I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures, and explain the process using the correct technical vocabulary. I understand and can use a range of mechanical systems in my products, including gears, pulleys, cams, levers and linkages. I know and can explain how different mechanical systems such as levers and linkages create movement. I know how most electrical systems work and can apply them to my products, for example, using switches, bulbs, buzzers or motors. I know how to compute a basic program and can monitor and control my products.	I can apply and explain my understanding of how to strengthen, stiffen and reinforce complex structures, explaining the process in detail using the correct technical vocabulary. I can understand and use the different mechanical systems in my products, such as gears, pulleys, cams, levers and linkages. I know and can explain mechanical systems such as cams or pulleys or gears create movement. I know how a range of electrical systems work and can apply them to my products, including series circuits, incorporating switches, bulbs, buzzers and motors. I can apply my knowledge and understanding of computing to a program, and can monitor and control my products.	I can understand the properties of materials and can apply my knowledge to my products, strengthening and stiffening complex structures, explaining and evaluating the process using technical vocabulary. I can understand and accurately use the common mechanical systems in my products, including gears, pulleys, cams, levers and linkages and begin to understand how more advanced mechanical system are used. I know how the different electrical systems work and can apply them to my products, including series circuits, incorporating switches, bulbs, buzzers and motors, and have a basic understanding on how more advanced electrical systems can be powered. I can apply my in depth knowledge of computing to program, and can monitor and control my products.
FOOD AND NUTRITION	Apply the principles of nutrition and healthy eating. Instil a love of cooking as an expression of creativity and as a crucial life skill.	Begin to understand that all food comes from plants or animals. Begin to develop peeling and chopping skills Use the basic principles of a healthy and varied diet to prepare dishes	Understand where food comes from. Know that food has to be farmed, grown elsewhere (e.g. home) or caught. Understand how to name and sort foods into the five groups in 'The Eat-Well plate.' Begin to use techniques such as cutting, peeling and grating	Understand that some food is processed and evaluate the effect on diet. Understand how to prepare a simple dish to eat independently Develop knife skill techniques safely	Understand that food is grown, reared, caught and traded in the UK, Europe and the wider world. Understand how to prepare and cook predominantly savoury dishes safely and hygienically. Further develop skills including mixing, kneading and baking	Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. Gain confidence in the skills of peeling, chopping, slicing, grating, mixing, kneading and baking	Understand and apply the principles of a healthy and varied diet Know how to prepare and cook a variety of more complex dishes safely and hygienically. Select the appropriate skill for food preparation from those known.