FEDERATION OF
FOLLIFOOT & SPOFFORTH
CHURCH OF ENGLAND PRIMARY SCHOOLS
Love Learn Thrive

Progression of skills in Design Technology

Progression in Designing

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Area	**End of Key Stage One**		**End of lower Key Stage Two**		**End of upper Key Stage Two**	
Cooking and Nutrition	• Know which healthy food combinations which work well together		• Knows how to design a biscuit within a given budget, drawing upon previous taste testing and considering the taste, texture, smell and appearance		• Knows how to adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients • Knows how to write an amended method for a recipe to incorporate the relevant changes to ingredients • Knows how to design appealing packaging to reflect a recipe • Knows how to write a recipe, explaining the key steps, method and ingredients •	
Mechanisms	• Knows how to adapt mechanisms, using guides to control the movement • Knows how to design a moving story book for a given audience • Knows how to design a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move • Knows how to create clearly labelled drawings which illustrate movement • Knows how to creating design criteria for a project/task • Knows how to select appropriate materials based on their properties •		• Know how to designing a toy which uses a pneumatic system • Know how to develop design criteria from a design brief • Knows how to generate ideas using sketches and diagrams • Know that different types of drawings are used in design to explain ideas clearly • Know how to design a shape that reduces air resistance		• Designing a pop-up book which uses a mixture of structures and mechanisms • Naming each mechanism, input and output accurately • Storyboarding ideas for a book • After experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to • create a desired movement • Understanding how linkages change the direction of a force • Making things move at the same • time	
Structures	• Knows the importance of clear design criteria • Knows how to include individual preferences and requirements in a design • Knows how to show ideas using sketching and modelling • Knows about different structures found in the natural and manmade world		• Knows how to designing a stable pavilion structure with key features to appeal to a specific person/ purpose • Knows how to draw and labelling a design using 2D shapes, labelling: • Knows the 3D shapes that will create the features - • Knows how to design a frame structures designed to support weight		• Knows how to design a stable structure that is able to support weight • Knows how to design a frame structure with focus on triangulation • Knows how to design a playground featuring a variety of different structures, giving consideration to how the structures will be used	
Textiles	• Knows how to use a template to design a puppet • Knows how to designing a simple pouch		• Knows how to design and making a template from an existing cushion and applying individual design criteria • Knows how to writie design criteria for a product, articulating decisions made		• Knows to consider proportions of individual components • Knows how to design a waistcoat in accordance to specification linked to set of design criteria • Knows how to annotate designs	
Electrical Systems	•		• Knows how to designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas		• Knows how to design a steady hand game with a simple electrical circuit identifying and naming the components required • Knows how to draw a design from three different perspectives	

Progression in Making

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Area	**End of Key Stage One**		**End of lower Key Stage Two**		**End of upper Key Stage Two**	
Cooking and Nutrition	• Identifying if a food is a fruit or a vegetable • Know where and how some fruits and vegetables grow • Know how to peel, chop and slice fruit and vegetables safely using the bridge or claw grip		• Knows how to prepare themselves and a work space to cook safely in • Knows the basic rules to avoid food contamination • Knows to follow the instructions within a recipe • Knows to follow basic hygiene rules • Knows simple ways to adapt a recipe		• Knows how to use equipment safely, including knives, hot pans and hobs • Knowing how to avoid cross contamination • Knows how to follow a step by step method carefully to make a recipe • Knows how to follow a recipe, including using the correct quantities of each ingredient • Knows how to adapt a recipe based on research • Knows how to working safely and hygienically with independence	
Mechanisms	• Knows how to follow a design to create a moving model using leavers and sliders • Knows how to simply adapt mechanisms • Knows how to use linkages using card for levers and split pins for pivots • Knows how to follow a design plan • Knows how to select materials according to their characteristics		• Knows how to use a pneumatic system to create a desired motion • Knows how to build secure housing for a pneumatic system • Knows how to use syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy • Knows how to select materials due to their functional and aesthetic characteristics • Knows how to manipulate materials to create different effects by cutting, creasing, folding, weaving • Knows how to measure, marking, cutting and assembling with increasing accuracy		• Knows how to follow a design brief to make a n automated toy • Knows how to make/use mechanisms and/ or structures using sliders, pivots and folds to produce movement • Knows how to use layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result • Knows how to measure, marking and checking the accuracy • Knows how to cut components accurately using a ruler and scissors • Knows how to assemble components accurately to make a stable frame • Knows that for a frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles • Knows how to select appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set	
Structures	• Knows how to make stable structures from card, tape and glue • Knows how to follow instructions to cut and assemble the supporting structure of a windmill • Knows how to make functioning turbines and axles which are assembled into a main supporting structure • Knows how to make a structure according to design criteria • Knows how to create joints and structures from paper/card and tape		• Knows how to construct a range of 3D geometric shapes using nets • Knows special features for individual designs • Knows how to create a range of different shaped frame structures • • Knows how to make a variety of free-standing frame structures of different shapes • Knows how to select appropriate materials to build a strong structure and for the cladding • Knows how to reinforcing corners to strengthen a structure • Knows how to create a design in accordance with a plan		• Knows how to use triangles to create truss bridges that span a given distance and supports a load • Knows how to independently measure and mark accurately • Knows how to selecting appropriate tools and equipment for particular tasks • Knows the correct techniques to saw safely • Knows where a structure needs reinforcement	
Textiles	• Knows how to cut fabric neatly with scissors • Knows joining methods to decorate a puppet • Knows how to decorate a pouch using fabric glue or running stitch		• Knows to follow design criteria to create a cushion • Knows how to select and cut fabrics using fabric scissors • Knows cross stitch to join fabric • Knows how to make and test a paper template • Knows how to measure, mark and cut fabric • Knows stitch style to join fabric, working neatly sewing small neat stitches • Knows how to incorporating fastening to a design		• Knows how to measure, marking and cut fabric accurately and independently • Knows how to create strong and secure blanket stitches when joining fabric • Knows how to use template pinning panels onto fabric • Knows how to use strong running stitch, making small, neat stitches and following the edge • • Knows how to tie strong knots • Knows how to attach objects using thread and adding a secure fastening	
Electrical Systems			• Knows how to make a torch with a working electrical circuit and switch • Knows how to use appropriate equipment to cut and attach materials • Knows how to assemble a torch according to the design and success criteria		• Knows how to make a working circuit • Knows how to construct a stable base for an electromagnetic game • Knows how to decorate the base of the game to a high-quality finish • Knows how to testing a circuit	

Progression in Evaluating

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Area	**End of Key Stage One**		**End of lower Key Stage Two**		**End of upper Key Stage Two**	
Cooking and Nutrition	• Know how to describe appearance, smell and taste of some fruits and vegetables • Know what information might be included on packaging for a smoothie • Know the taste of common fruits and vegetables • Know which grip was most effective when peeling, chopping and slicing.		• Knows simple design criteria to help test and review • Knows how to evaluate a recipe, considering: taste, smell, texture and appearance • Knows the impact of the budget on the selection of ingredients		• Knows how to Identify the nutritional differences between different products and recipes • Knows and describes healthy benefits of food groups • Knows how to evaluate a recipe, considering: taste, smell, texture and food group • Knows how to taste test and score final products • Knows how to suggest points of improvements in productions • Knows evaluating health and safety in production to minimise cross contamination	
Mechanisms	• Knows how to test a finished product seeing if it moves as planned • Knows how to explain how to fix a product that is not working • Knows how to review the success of a product • Knows how to test mechanisms • Knows how to give and receive per feedback and act on it adapting product		• Knows how to use the views of others to improve designs • Knows to use testing to modifying the outcome, suggesting improvements • Knows how to evaluate the speed of a final product based on: the affect of shape on speed and the accuracy of workmanship on performance		• Knows how to evaluate the work of others and receive feedback on own work • Knows how to act on points of improvements • Knows how to describe changes they would make/ do if they were to do the project again	
Structures	• Knows how to evaluate a windmill according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't • Knows how to suggest points for improvements • Knows the features of structures • Knows how to compare the stability of different shapes • Knows how to testing the strength of structures • Knows how to identifyi the weakest part of a structure • Knows how to evaluate the strength, stiffness and stability of own structure		• Knows how to evaluate own work and the work of others based on the aesthetic of the finished product and in comparison to the original design • Knows how to suggesting points for modification of the individual designs • Knows how to evaluate structures made by the class • Knows what characteristics of a design and construction made it the most effective • Knows effective and ineffective designs		• Knows how to adapt and improve own structures by identifying points of weakness and reinforcing them as necessary • Knows how to suggest points for improvements for own structures and those designed by others • Knows how to improve a design plan based on peer evaluation • Knows testing and adapting a design can improve it	
Textiles	• Knows how to reflect on a finished product, explaining likes and dislikes • Knows how to evaluate the quality of the stitching on others' work • Knows how to identify aspects of their peers' work that they particularly like and why		• Knows how to evaluate an end product and thinking of other ways in which to create similar items • Knows how to test and evaluating an end product against the original design criteria • Knows how many of the criteria should be met for the product to be considered successful • Knows how to suggest modifications for improvement		• Knows how to test and evaluating an end product and giving point for further improvements • Knows evaluating work continually as it is created can help improve it	
Electrical Systems			• Knows to give constructive criticism on own work and the work of others • Knows testing the success of a product against the original design criteria and justifying opinions help improve •		• Knows how to evaluate a completed product against the original design sheet and looking at modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of electronic device, eg: buzzer • Testing own and others finished games, identifying what went well and making suggestions for improvement	

Progression in Technical Knowledge

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Area	**End of Key Stage One**		**End of lower Key Stage Two**		**End of upper Key Stage Two**	
Cooking and Nutrition	Know the difference between fruits and vegetables Know how to describing and group fruits and vegetables by texture and taste Know what makes a balanced diet Knowing where to find the nutritional information on packaging Knowing the five food groups		• Knows how to working with cooking equipment safely and hygienically • Knows how to use, store and clean a knife safely • Knows the impact of the cost and importance of budgeting while planning ingredients for biscuits		• Knows where food comes from – e.g. learning that beef is from cattle and how beef is reared and processed • • Know what constitutes a balanced diet • Knows how to adapt a recipe to make it healthier • Knows the relevant ingredients and equipment needed for a recipe • Knows the combinations of food that will complement one another • Knows the process of 'Farm to Fork' for a given ingredient	
Mechanisms	• Knows that levers and sliders are mechanisms and can make things move • Knows the vocabulary up, down, left, right, vertical and horizontal to describe movement • Knows what mechanisms makes a toy move forward • Knows a wheel needs an axel to move • Knows a mechanisms is a collection of moving parts that work together and have input and output • Know a lever turns on a pivot • Know a linkage is a system of levers that are connected by pivots		• Knows how pneumatic systems work • Knows that mechanisms are a system of parts that work together to create motion • Knows that pneumatic systems can be used as part of a mechanism • Knows that pneumatic systems force air over a distance to create movement • Knows that products change and evolve over time • Knows that all moving things have kinetic energy • Knows that kinetic energy is the energy that something (object person) has by being in motion		• Knows that an input is the motion used to start a mechanism • Knows that output is the motion that happens as a result of starting the input • Knows that mechanisms control movement • Knows mechanisms that can be used to change one kind of motion into another • Knows that different shaped cams produce different follower movements	
Structures	• Knows how to describe the purpose of structures, including windmills • Knows that the shape of materials can be changed to improve the strength and stiffness of structures • Knows that cylinders are a strong type of structure that are often used for windmills and lighthouses • Knows that windmill turbines use wind to turn and make the machines inside work • Knows that that axles are used in structures and mechanisms to make parts turn in a circle • Knows that shapes and structures with wide, flat bases or legs are the most stable • Knows that the shape of a structure affects its strength • Knows the vocabulary: strength, stiffness and stability • Knows that materials can be manipulated to improve strength and stiffness		• Knows suitable materials to be selected and used for a pavilion considering weight, compression, tension • Knows wide and flat based objects are more stable • Knows the terminology of strut, tie, span, beam • Knows the difference between frame and shell structure • Knows what pavilions are and their purpose • Knows that architects consider light, shadow and patterns when designing • Knows effective and ineffective designs		• Knows stronger and weaker structures • Knows different ways to reinforce structures • Knows how triangles can be used to reinforce bridges • Knows that structures can be strengthened by manipulating materials and shapes • Knows man made and natural structures	
Textiles	• Knows different ways in which to join fabrics together: pinning, stapling, gluing • Knows benefits of techniques • Knows how to thread a needle • Knows running stitch, is evenly spaced, neat, even stitches to join fabric		• Knows how to thread needles with greater independence • Knows tying knots with greater independence • Knows cross stitch and appliqué • Knows the need to count the thread on a piece of even weave fabric in each direction to create uniform size and appearance • • Knows that fabrics can be layered for affect • Knows that there are different types of fastenings and what they are and the benefits and disadvantages of different fastening types		• Knows blanket stitch to join fabric • Knows the space between the stitches are even and regular • Knows how to threading needles independently • Knows different decorative stitches	
Electrical Systems			• Knows how simple electrical items work • Knows what electrical conductors and insulators are • Knows that a battery contains stored electricity and can be used to power products • Knows the features of a torch • Knows how a torch works • Knows the positives and negatives about different torches		• Learning the key components used to create a functioning circuit • Knows that breaks in a circuit will stop it from working • Knows that batteries contain acid, which can be dangerous if they leak	