



Design and Technology

Curriculum Overview: Year 1



Textiles	Mechanism	Cooking and Nutrition
Puppets	Wheels and Axes	Fruit and Vegetables
Design - Using a template to create a design for a puppet. Make - Cutting fabric neatly with scissors. - Using joining methods to decorate a puppet. - Sequencing steps for construction. Evaluate - Reflecting on a finished product, explaining likes and dislikes. Technical Knowledge - Learning different ways in which to join fabrics together: pinning, stapling, gluing.	Design - Explaining how to adapt mechanisms, using bridges or guides to control the movement. - Design a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move. - Creating clearly labelled drawings which illustrate movement Make - Following a design to create moving models that use levers and sliders. - Adapting mechanisms Evaluate - Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. - Reviewing the success of a product by testing it with its intended audience. - Testing mechanisms, identifying what stops wheels from turning, knowing that a wheel needs an axle in order to move. Technical Knowledge - Learning that levers and sliders are mechanisms and can make things move. - Identifying whether a mechanism is a lever or slider and determining what movement the mechanism will make. - Using the vocabulary: up, down, left, right, vertical and horizontal to describe movement. - Identifying what mechanism makes a toy or vehicle roll forwards. - Learning that for a wheel to move it must be attached to an axle.	Design - Designing smoothie carton packaging by-hand or on ICT software Make - Chopping fruit and vegetables safely to make a smoothie. - Identifying if a food is a fruit or a vegetable. - Learning where and how fruits and vegetables grow Evaluate - Tasting and evaluating different food combinations - Describing appearance, smell and taste. - Suggesting information to be included on packaging Technical Knowledge - Understanding the difference between fruits and vegetables - Describing and grouping fruits by texture and taste



Design and Technology

Curriculum Overview: Year 2



Textiles	Woodcraft	Cooking and Nutrition
Pouch	Hoop Games	A Balanced Diet
Design - Design a pouch Make - Selecting and cutting fabrics for sewing - Decorating a pouch using fabric glue or running stitch Evaluate - Troubleshooting scenarios posed by teacher - Evaluating the quality of the stitching on others' work - Discussing as a class, the success of their stitching against the success criteria - Identifying aspects of their peers' work that they particularly like and why Technical Knowledge - Joining items using fabric glue or stitching - Identifying benefits of these techniques - Threading a needle - Sewing running stitch, with evenly spaced, neat, even stitches to join fabric - Neatly pinning and cutting fabric using a template	Design - Generate ideas based on a simple design criterion and their own experiences, exploring what they could make. - Develop, model and communicate their ideas through talking, mock-ups and drawings. Make - Plan by suggesting what to do next. - Select and use tools, skills and techniques, explaining their choices. - Select new and reclaimed materials to build their product. - Use simple finishing techniques suitable for the product they are creating. Evaluate - Evaluate the product by discussing how well it works in relation to its purpose, the user and whether it meets the original design criteria. Technical Knowledge - Know how to make the product stronger, stiffer and more stable.	Design - Designing a healthy wrap based on a food combination which work well together Make - Slicing food safely using the bridge or claw grip - Constructing a wrap that meets a design brief Evaluate - Describing the taste, texture and smell of fruit and vegetables. - Taste testing food combinations and final products. - Describing the information that should be included on a label. - Evaluating which grip was most effective. Technical Knowledge - Understanding what makes a balanced diet - Knowing where to find the nutritional information on packaging. - Knowing the five food groups



Design and Technology
Curriculum Overview: Year 3



Woodcraft	Digital World	Cooking and Nutrition
Mark Making Tools	Electronic Charms	Eating Seasonally
Design - Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. - Develop ideas through the analysis of existing mark making tools Make - Plan the order of the main stages of making. - Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. - Explain their choice of materials according to functional properties and aesthetic qualities. Evaluate - Investigate and evaluate a range of mark making including the materials, components and techniques that have been used. - Test and evaluate their own products against design criteria and the intended user and purpose. Technical Knowledge - Develop and use knowledge of how to construct strong, stiff products. - Know and use technical vocabulary relevant to the project.	Design - Problem solving by suggesting potential features on a Micro: bit and justifying my ideas. - Developing design ideas for a technology pouch. - Drawing and manipulating 2D shapes, using computer-aided design, to produce a point of sale badge. Make - Using a template when cutting and assembling the pouch. - Following a list of design requirements. - Selecting and using the appropriate tools and equipment for cutting, joining, shaping and decorating a foam pouch. - Applying functional features such as using foam to create soft buttons. Writing a program to control (button press) and/or monitor (sense light) that will initiate a flashing LED algorithm. Evaluate - Analysing and evaluating an existing product. - Identifying the key features of a pouch. Technical Knowledge - To understand that, in programming, a 'loop' is code that repeats something again and again until stopped. - To know that a Micro:bit is a pocket-sized, codeable computer.	Design - Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish Make - Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination - Following the instructions within a recipe Evaluate - Establishing and using design criteria to help test and review dishes - Describing the benefits of seasonal fruits and vegetables and the impact on the environment - Suggesting points for improvement when making a seasonal tart Technical Knowledge - Learning that climate affects food growth - Working with cooking equipment safely and hygienically - Learning that imported foods travel from far away and this can negatively impact the environment - Learning that vegetables and fruit grow in certain seasons - Learning that each fruit and vegetable gives us nutritional benefits



Design and Technology
Curriculum Overview: Year 4



Textiles	Electrical Systems	Mechanical Systems
Mark Making Tools	Torches	Making a Slingshot Car
Design - Writing design criteria for a product, articulating decisions made. - Designing a personalised book sleeve. Make - Making and testing a paper template with accuracy and in keeping with the design criteria. - Measuring, marking and cutting fabric using a paper template. - Selecting a stitch style to join fabric. - Working neatly by sewing small, straight stitches. - Incorporating a fastening to a design. Evaluate - Deciding how many of the criteria should be met for the product to be considered successful. - Suggesting modifications for improvement. - Articulating the advantages and disadvantages of different fastening. Technical Knowledge - Learning to sew blanket stitch to join fabric - Applying blanket stitch so the space between the stitches are even and regular - Threading needles independently	Design - Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas Make - Making a torch with a working electrical circuit and switch. - Using appropriate equipment to cut and attach materials. - Assembling a torch according to the design and success criteria. Evaluate - Evaluating electrical products. - Testing and evaluating the success of a final product. Technical Knowledge - To understand that electrical conductors are materials which electricity can pass through. - To understand that electrical insulators are materials which electricity cannot pass through. - To know that a battery contains stored electricity that can be used to power products. - To know that an electrical circuit must be complete for electricity to flow. - To know that a switch can be used to complete and break an electrical circuit.	Design - Designing a shape that reduces air resistance. - Drawing a net to create a structure from. - Choosing shapes that increase or decrease speed as a result of air resistance. Personalising a design. Make - Measuring, marking, cutting and assembling with increasing accuracy. - Making a model based on a chosen design. Evaluate - Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance Technical Knowledge - To understand that all moving things have kinetic energy. - To understand that kinetic energy is the energy that something (object/person) has by being in motion. - To know that air resistance is the level of drag on an object as it is forced through the air. - To understand that the shape of a moving object will affect how it moves due to air resistance.



Design and Technology
Curriculum Overview: Year 5



Textiles	Cooking and Nutrition	Woodcraft
Stuffed Toys	What Could be Healthier	Stools
Design - Designing a stuffed toy considering the main component shapes required and creating an appropriate template - Considering the proportions of individual components Make - Creating a 3D stuffed toy from a 2D design - Measuring, marking and cutting fabric accurately and independently - Creating strong and secure blanket stitches when joining fabric - Using applique to attach pieces of fabric decoration Evaluate - Testing and evaluating an end product and giving point for further improvements Technical Knowledge - To know that a fastening is something which holds two pieces of material together. - To know that different fastening types are useful for different purposes.	Design - Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients - Writing an amended method for a recipe to incorporate the relevant changes to ingredients - Designing appealing packaging to reflect a recipe Make - Cutting and preparing vegetables safely - Using equipment safely, including knives, hot pans and hobs - Knowing how to avoid cross-contamination Following a step by step method carefully to make a recipe Evaluate - Identifying the nutritional differences between different products and recipes - Identifying and describing healthy benefits of food groups Technical Knowledge - Understanding where food comes from - learning that beef is from cattle and how beef is reared and processed - Understanding what constitutes a balanced diet - Learning to adapt a recipe to make it healthier - Comparing two adapted recipes using a nutritional	Design - Carry out research into user needs and existing products, using surveys, interviews, questionnaires, and web-based resources. - Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. - Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. Make - Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. - Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Use finishing and decorative techniques suitable for the product they are designing and making. Evaluate - Investigate and evaluate a range of existing products. - Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.

	calculator and then identifying the healthier option	Research key events and individuals relevant to the product. Technical Knowledge • Understand how to strengthen, stiffen and reinforce frameworks. • Know and use technical vocabulary relevant to the project.
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Design and Technology

Curriculum Overview: Year 6



Mechanical Systems	Cooking and Nutrition	Electrical Systems
Automata Toys	Come Dine with Me	Steady Hand Games
Design - 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 - Understanding and drawing cross-sectional diagrams to show the inner-workings of the automata Make - Measuring, marking and checking the accuracy of the jelutong and dowel pieces required - Measuring, marking and cutting components accurately using a ruler and scissors - Assembling components accurately to make a stable frame - Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles - Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set Evaluate - Evaluating the work of others and receiving feedback on own work - Applying points of improvements - Describing changes they would make/do if they were to do the project again	Design - Writing a recipe, explaining the key steps, method and ingredients - Including facts and drawings from research undertaken Make - Following a recipe, including using the correct quantities of each ingredient - Adapting a recipe based on research - Working to a given timescale - Working safely and hygienically with independence - Understand how to prepare vegetables correctly ready for cooking Evaluate - Evaluating a recipe, considering: taste, smell, texture and origin of the food group - Taste testing and scoring final products - Suggesting and writing up points of improvements in productions - Evaluating health and safety in production to minimise cross contamination Technical Knowledge - Learning how to research a recipe by ingredient - Recording the relevant ingredients and equipment needed for a recipe - Understanding the combinations of food that will complement one another - Understanding where food comes from, describing	Design - Designing a steady hand game - identifying and naming the components required. Drawing a design from three different perspectives. - Generating ideas through sketching and discussion. - Modelling ideas through prototypes. - Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function' Make - Constructing a stable base for a game. - Accurately cutting, folding and assembling a net. - Decorating the base of the game to a high quality finish. - Making and testing a circuit. - Incorporating a circuit into a base. Evaluate - Testing own and others finished games, identifying what went well and making suggestions for improvement. - Gathering images and information about existing children's toys. - Analysing a selection of existing children's toys. Technical Knowledge - o know that batteries contain acid, which can be dangerous if they leak.

Technical Knowledge • Using a bench hook to saw safely and effectively • Exploring cams, learning that different shaped cams produce different follower movements • Exploring types of motions and direction of a motion.	the process of 'Farm to Fork' for a given ingredient	• To know the names of the components in a basic series circuit, including a buzzer.
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