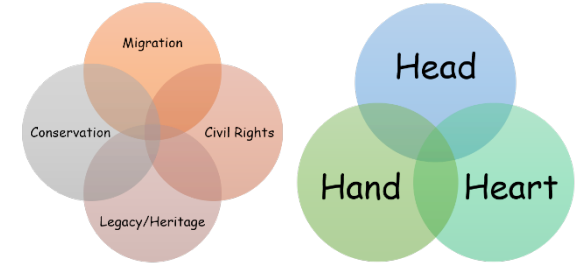


Riversdale Primary School

Design Technology Progression



| Disciplinary Concepts | | | | | | | |
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| Designing | Making | Evaluating | Cooking & Nutrition | Textiles | Structures | Mechanisms | Electrical Systems |

| Overview* | | | | | | | |
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| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | |
| EYFS | | | | | | | |
| Year 1 | | The Toy Factory Textiles Christmas Dolls | | Transport for London Mechanisms Sliders & Leavers | | Whatever the Weather Structures Freestanding | |
| Year 2 | | Florence, Mary & Edith Cooking & Nutrition Autumnal Foods | | The Great Fire of London Mechanisms Wheels & Axels | | Oh, I Do Like to be Beside the Seaside Textiles Beach Blanket Patch | |
| Year 3 | | May the Forces be With You: Part 1 Mechanisms Pneumatics | | The Romans (Legacy) Cooking & Nutrition Regional & Spring Foods | | HMT Empire Windrush Structures Shell/Frame Structures | |
| Year 4 | | Great Builders: The Ancient Egyptians Textiles Usekh Patterns | | The Anglo-Saxon Settlements Electrical Systems Circuits and Switches | | Respect for the Rainforests Cooking & Nutrition Regional & Summer Foods | |
| Year 5 | | May the Forces be With You: Part 2 Mechanisms Cam Mechanism Toys | | The Anglo-Saxons and the Vikings Textiles Viking Shield Cushions | | Extreme Experiences Structures Greenhouses & Sustainability | |
| Year 6 | | Great Builders: The Ancient Greeks Cooking & Nutrition Greek Cuisine | | Wandsworth's War Electrical Systems The Telegraph Project | | Land of the Rising Sun (Human) Structures Bridges Across Japan | |

| Progression of Disciplinary Knowledge & Skills* | | | | |
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| | EYFS | KS1 | LKS2 | UKS2 |
| Designing | Explore different materials freely, in order to develop their ideas about how to use them and what to make. | Use pictures and words to convey what they want to design/make. | Develop more than one design or adaptation of an initial design. | List tools needed before starting the activity. |

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| | <p>Develop their own ideas and then decide which materials to use to express them.</p> | <p>Propose more than one idea for their product.</p> <p>Use kits/reclaimed materials to develop more than one idea. Model ideas/make mock-ups with kits, reclaimed materials.</p> <p>Select appropriate technique explaining: First... Next... Last....</p> <p>Explore ideas by rearranging materials/ingredients.</p> <p>Select pictures to help develop ideas.</p> <p>Use drawings to record ideas as they are developed.</p> <p>Add notes to drawings to help explanations.</p> <p>Use ICT to communicate their ideas.</p> <p>Describe their models and drawings of ideas and intentions.</p> | <p>Plan a sequence of actions to make a product.</p> <p>Record the plan by drawing using annotated sketches.</p> <p>Begin to use cross-sectional and exploded diagrams.</p> <p>Use prototypes to develop and share ideas.</p> <p>Think ahead about the order of their work and decide upon tools and materials/ingredients.</p> <p>Propose realistic suggestions as to how they can achieve their design ideas.</p> <p>Consider aesthetic qualities of materials/ingredients chosen.</p> | <p>Plan the sequence of work e.g. using a storyboard.</p> <p>Record ideas using annotated diagrams.</p> <p>Use models, kits and drawings to help formulate design ideas.</p> <p>Combine modelling and drawing to refine ideas.</p> <p>Devise step by step plans which can be read/followed by someone else.</p> <p>Use exploded diagrams and cross-sectional diagrams to communicate ideas.</p> <p>Sketch and model alternative ideas.</p> <p>Decide which design idea to develop.</p> |
| <p>Making</p> | <p>Join different materials and explore different textures.</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> | <p>Discuss their work as it progresses.</p> <p>Select materials/ingredients from a limited range that will meet the design criteria.</p> <p>Select and name the tools needed to work the materials/ingredients.</p> <p>Explain what they are making.</p> <p>Explain which materials/ingredients they are using and why.</p> <p>Name the tools they are using.</p> <p>Describe what they need to do next.</p> | <p>Prepare pattern pieces as templates for their design.</p> <p>Cut slots.</p> <p>Cut internal shapes.</p> <p>Select from a range of tools for cutting shaping joining and finishing.</p> <p>Use tools with accuracy.</p> <p>Select from techniques for different parts of the process.</p> <p>Select from materials according to their functional properties.</p> <p>Plan the stages of the making process.</p> | <p>Make prototypes.</p> <p>Develop one idea in depth.</p> <p>Use researched information to inform decisions.</p> <p>Produce detailed lists of ingredients / components/materials and tools.</p> <p>Use a computer to model ideas.</p> <p>Select from and use a wide range of tools.</p> <p>Cut accurately and safely to a marked line.</p> <p>Select from and use a wide range of materials.</p> |

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| | | | Use appropriate finishing techniques. | Use appropriate finishing techniques for the project. Refine their product – review and rework/improve. |
| Evaluating | Share creations, explaining the process they have used. | <p>Explore existing products and investigate how they have been made.</p> <p>Decide how existing products do/do not achieve their purpose.</p> <p>Talk about their design as they develop and identify good and bad points.</p> <p>Note changes made during the making process as annotation to plans/drawings.</p> <p>Say what they like and do not like about items they have made and attempt to say why.</p> <p>Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.</p> | <p>Investigate similar products to the one to be made to give starting points for a design.</p> <p>Draw/sketch products to help analyse and understand how products are made.</p> <p>Research needs of user.</p> <p>Identify the strengths and weaknesses of their design ideas in relation to purpose/user.</p> <p>Decide which design idea to develop.</p> <p>Consider and explain how the finished product could be improved.</p> <p>Discuss how well the finished product meets the design criteria of the user.</p> <p>Investigate key events and individuals in Design and Technology.</p> | <p>Research and evaluate existing products.</p> <p>Consider user and purpose.</p> <p>Identify the strengths and weaknesses of their design ideas.</p> <p>Give a report using correct technical vocabulary.</p> <p>Consider and explain how the finished product could be improved related to design criteria.</p> <p>Discuss how well the finished product meets the design criteria of the user.</p> <p>Test on the user.</p> <p>Understand how key people have influenced design.</p> |
| Cooking & Nutrition | <p>Begin developing a food vocabulary using taste, explaining qualities such as sweet, sour, salty.</p> <p>Group familiar food products e.g. fruit and vegetables.</p> <p>Work safely and hygienically.</p> <p>Begin to chop a range of ingredients with some support.</p> <p>Begin to identify healthy vs. less healthy foods.</p> | <p>Develop a food vocabulary using taste, smell, texture and feel.</p> <p>Group familiar food products e.g. fruit and vegetables.</p> <p>Explain where food comes from.</p> <p>Cut, peel, grate and chop a range of ingredients.</p> <p>Work safely and hygienically.</p> <p>Understand the need for a variety of foods in a diet.</p> | <p>Develop sensory vocabulary/knowledge using, smell, taste, texture and feel.</p> <p>Analyse the taste, texture, smell and appearance of a range of foods.</p> <p>Follow instructions/recipes.</p> <p>Make healthy eating choices – use the Eatwell plate.</p> <p>Join and combine a range of ingredients.</p> | <p>Prepare mostly savoury dishes using their own selection of ingredients, considering their nutritional properties and sensory characteristics.</p> <p>Weigh and measure using scales.</p> <p>Select and prepare foods for a particular purpose.</p> <p>Work safely and hygienically.</p> <p>Develop understanding of a healthy diet and apply in their ingredient choices.</p> |

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| | <p>Begin to measure food items using non-statutory measures e.g. spoons, cups.</p> | <p>Measure and weigh food items, non-statutory measures e.g. spoons, cups.</p> | <p>Prepare and cook using a range of cooking techniques.</p> <p>Explore seasonality of vegetables and fruit.</p> <p>Find out which fruit and vegetables are grown in countries/continents studied in Geography.</p> <p>Develop understanding of how meat/fish are reared/caught.</p> | <p>Use a range of cooking techniques.</p> <p>Join and combine a widening range of ingredients.</p> <p>Know where and how ingredients are grown and processed.</p> |
| Textiles | <p>Explore different materials freely, in order to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>Join different materials and explore different textures.</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share creations, explaining the process they have used.</p> <p>Make use of props and materials when role playing characters in narratives and stories.</p> | <p>Start to use the appropriate vocabulary to refer to fabrics and tools.</p> <p>Cut out shapes which have been created by drawing round a template onto the fabric.</p> <p>Join fabrics by using e.g. running stitch, glue, staples, over sewing, tape.</p> <p>Decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons.</p> <p>Colour fabrics using a range of techniques e.g. fabric paints, printing, painting.</p> | <p>Develop vocabulary for tools materials and their properties.</p> <p>Understand seam allowance.</p> <p>Join fabrics using running stitch, over sewing, blanket stitch.</p> <p>Use prototype to make pattern.</p> <p>Explore strengthening and stiffening of fabrics.</p> <p>Explore fastenings and recreate some.</p> <p>Sew on buttons and make loops.</p> <p>Use appropriate decoration techniques.</p> | <p>Use the correct vocabulary appropriate to the project.</p> <p>Create 3D products using patterns pieces and seam allowance.</p> <p>Understand pattern layout.</p> <p>Decorate textiles appropriately (often before joining components).</p> <p>Pin and tack fabric pieces together.</p> <p>Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision).</p> <p>Combine fabrics to create more useful properties.</p> |
| Structures | <p>Explore different materials freely, in order to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>Join different materials and explore different textures.</p> | <p>Refer to materials tools and techniques using appropriate vocabulary.</p> <p>Explore how to make structures stronger.</p> <p>Investigate different techniques for stiffening a variety of materials.</p> | <p>Create shell or frame structures.</p> <p>Strengthen frames with diagonal struts.</p> <p>Investigate ways of making a structure more stable.</p> <p>Make structures more stable by giving them a wide base.</p> | <p>Use the correct terminology for tools materials and processes.</p> <p>Join materials using appropriate methods.</p> <p>Build frameworks to support mechanisms.</p> <p>Use different methods to strengthen or reinforce their designs.</p> |

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| | <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share creations, explaining the process they have used.</p> | <p>Test different methods of enabling structures to remain stable.</p> <p>Join appropriately for different materials and situations e.g. glue, tape.</p> <p>Mark out materials to be cut using a template.</p> <p>Use a glue gun with close supervision.</p> | <p>Explain how the shape of a structure affects its stability.</p> <p>Know that the weight of the structure needs to be evenly spread on the base to make it secure.</p> <p>Select and use appropriate tools and materials.</p> <p>Measure and mark square section, strip and dowel accurately to 1cm.</p> | <p>Predict and test the strength of different beam shapes using paper and card.</p> <p>Explain what a truss is and how they make bridges stronger.</p> <p>Make an arch frame.</p> <p>Explain how suspension bridges use tension forces to work.</p> |
| <p>Mechanisms</p> | <p>N/A</p> | <p>Make a sliding mechanism out of card.</p> <p>Understand and use a pivot and lever mechanism using card and a split pin.</p> <p>Make a wheel mechanism using card and a split pin.</p> <p>Match a mechanism to the type of movement it makes.</p> <p>Use technical vocabulary when describing mechanisms, tools and materials they use.</p> <p>Join appropriately for different materials and situations e.g. glue, tape.</p> <p>Try out different axle fixings and their strengths and weaknesses.</p> <p>Make vehicles with construction kits which contain free running wheels.</p> <p>Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels.</p> <p>Cut dowel using hacksaw and bench hook.</p> <p>Attach wheels to a chassis using an axle.</p> | <p>Understand that mechanical systems have an input, process and an output.</p> <p>Explain how simple pneumatic systems work using appropriate vocabulary.</p> <p>Recognise familiar objects that use air to make them work.</p> <p>Describe how objects use air to make them work.</p> <p>Create simple effective pneumatic systems.</p> <p>Investigate ways of using pneumatic systems with other materials to control movement.</p> | <p>Understand that mechanical systems have an input, process and an output.</p> <p>Explain how simple cams mechanisms work using appropriate vocabulary.</p> <p>Recognise familiar objects that use cams mechanisms to make them work.</p> <p>Create simple effective cam mechanisms to affect movement such as rotation and oscillation.</p> <p>Use a crank to change the motion on a transmission from circular to linear.</p> <p>Investigate ways of using cam mechanisms with other materials to control movement.</p> |

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| | | Use a hole punch and Insert paper fasteners for card. | | |
| Electrical Systems | N/A | N/A | <p>Understand what static electricity is and how it moves objects through attraction or repulsion.</p> <p>Generate static electricity independently.</p> <p>Use static electricity to make objects move in a desired way.</p> <p>Learn the key components used to create a functioning circuit. (Science)</p> <p>Explain why breaks in a circuit will stop it from working. (Science)</p> <p>Explain what electrical conductors and insulators are. (Science)</p> <p>Learn that graphite is a conductor and can be used as part of a circuit.</p> <p>Identify a range of electrical products.</p> | <p>Understand the difference between series and parallel circuits.</p> <p>Understand that a battery produces electricity (flow of electrons) through a chemical reaction.</p> <p>Learn that batteries contain acid, which can be dangerous if they leak.</p> <p>Learn that when electricity enters a coiled wire, this creates an electromagnet.</p> <p>Understand how electromagnets can be applied in real life examples from the past/present.</p> |