

Year 3 Curriculum subject plan Design and Technology

| YEAR 3 | Mechanical Systems Levers and Linkages | Electrical Systems Simple Programming and Control | Structures Shell Structures-Computer aided | Food Healthy and Varied Diet |
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| Component Knowledge | <ul style="list-style-type: none"> • Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. • Use annotated sketches and prototypes to develop, model and communicate ideas. • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. • Select from and use finishing techniques suitable for the product they are creating. • Investigate and analyse books and, where available, other products with lever and linkage mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary eg, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating user, purpose, function prototype, design criteria, innovative, appealing, design brief. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Develop and use knowledge of how to construct strong, stiff shell structures. • Investigate and evaluate a range of shell structures 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 • 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. • Use computer-generated finishing techniques suitable for the product they are creating. • Know the words: shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. • Program a standalone control box, microcontroller or interface box to enhance the way the product works. | | | |

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| | <ul style="list-style-type: none">• Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers.• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.• Plan the main stages of a recipe, listing ingredients, utensils and equipment.• Select and use appropriate utensils and equipment to prepare and combine ingredients.• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.• Know how to use appropriate equipment and utensils to prepare and combine food.• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. |
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