Autumn Levers and Linkages

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| National Curriculum Links |
| Designing  • 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.  Making  • 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.  Evaluating  • 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.  Technical knowledge and understanding  • Understand and use lever and linkage mechanisms.  • Distinguish between fixed and loose pivots.  • Know and use technical vocabulary relevant to the project. |

Spring Circuits and Switches/Programming and control

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| National Curriculum Links |
| Designing  • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.  • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.  Making  • Order the main stages of making.  • Select from and use tools and equipment to cut, shape, join and finish with some accuracy.  • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.  Evaluating  • Investigate and analyse a range of existing battery-powered products.  • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.  Technical knowledge and understanding  • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.  • Apply their understanding of computing to program and control their products.  • Know and use technical vocabulary relevant to the project. |

Summer Pneumatics

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| National Curriculum Links |
| Designing  • Generate realistic and appropriate 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.  Making  • Order the main stages of making.  • Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.  • Select from and use finishing techniques suitable for the product they are creating.  Evaluating  • Investigate and analyse books, videos and products with pneumatic mechanisms.  • Evaluate their own products and ideas against criteria and user needs, as they design and make.  Technical knowledge and understanding  • Understand and use pneumatic mechanisms.  Know and use technical vocabulary relevant to the project |