Mechanical Systems

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.

Electrical Systems

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.

Food

Designing
Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.

Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making
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.

Evaluating
Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.

Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Technical knowledge and understanding
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.

Know and use relevant technical and sensory vocabulary appropriately.

End of Year Expectations

Design and Technology

Year 4