

# Design Technology Learning Journeys

## Year 5



| <b>Autumn</b><br><b>The Legacy of the Maya</b>  | <b>Spring</b><br><b>From Absolute Monarchy to Absolute Democracy</b>   | <b>Summer</b><br><b>Rivers</b>  |
|---|--|---|
| <b>Project Overview</b>   | <b>Project Overview</b>  | <b>Project Overview</b>   |
| <p>In this unit, the children will complete research into existing products that have cultural preferences. They will investigate the ingredients used and the origins of these ingredients. They will evaluate a range of dishes and food products. The children will use focused practical tasks to measure out, cut, shape, combine products. They investigate what ingredients could be changed or added to recipes and how this would affect the taste, smell, texture and appearance. The children go on to create innovations of known dishes.</p> | <p>In this unit, the children investigate different types of movement: rotary, oscillating and reciprocating. They explore different products and toys that use Cam mechanisms and explore how they are used in the other products/industries. The children go on to use pre-cut cams to observe movement and use a range of tools accurately and safely. They develop the skills of marking, cutting, shaping and joining. The children go on to design and make their own model with a cam mechanism, considering how it will move and also the finishing techniques they will use to create the finished product.</p> | <p>In this unit, the children look at range of moving toys and modes of transport that use an electrical system to make them move. They investigate the frame structure and how it has been constructed, joined and strengthened. They look at how the wheels, gears and axles have been used to create movement and how the product is made to move using a simple electrical circuit. They use focused practical tasks to practise measuring, cutting and joining materials as well using construction kits. They revisit how to create simple circuits. The children then design and make a moving mode of transport for tourism purposes.</p> |
| <b>Aspect and Focus</b>   | <b>Aspect and Focus</b>  | <b>Aspect and Focus</b>   |
| <p><b>Aspect:</b> Food and nutrition<br/> <b>Focus:</b> Celebrating culture and seasonality</p>   | <p><b>Aspect:</b> Mechanisms<br/> <b>Focus:</b> Cams</p>   | <p><b>Aspect:</b> Multi-aspect project<br/> <b>Focus:</b> Frame structures, axles and wheels and simple electronic systems</p>  |
| <b>Outcome of DT Project</b>  | <b>Outcome of DT Project</b>   | <b>Outcome of DT Project</b>  |
| <p><b>Outcome:</b> Create meals linked to class topic</p>   | <p><b>Outcome:</b> Design and make a moving model linked to topic or Literacy text</p>   | <p><b>Outcome:</b> Design and make a moving model of transport for tourism purposes using an electric circuit</p>   |
| <b>Main Focus for Skills Development</b>  | <b>Main Focus for Skills Development</b>   | <b>Main Focus for Skills Development</b>  |
| <p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet.</li> <li>• Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients.</li> </ul> <p><b>Designing</b></p>  | <p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Experience of axles, axle holders and wheels that are fixed or free moving.</li> <li>• Basic understanding of different types of movement.</li> <li>• Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</li> <li>• An understanding of how to strengthen and stiffen structures.</li> </ul>   | <p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Experience of axles, axle holders and wheels that are fixed or free moving.</li> <li>• Basic understanding of electrical circuits, simple switches and components.</li> <li>• Experience of cutting and joining techniques with a range of materials including card, plastic and wood.</li> </ul>   |

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- Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.
- Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.
- Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.

### **Making**

- Write a step-by-step recipe, including a list of ingredients, equipment and utensils
- Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.
- Make, decorate and present the food product appropriately for the intended user and purpose.

### **Evaluating**

- Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.
- Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
- Understand how key chefs have influenced eating habits to promote varied and healthy diets.

### **Technical knowledge and understanding**

- Know how to use utensils and equipment including heat sources to prepare and cook food.
- Understand about seasonality in relation to food products and the source of different food products.
- Know and use relevant technical and sensory vocabulary.

### **Designing**

- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.
- Develop a simple design specification to guide their thinking.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

### **Making**

- Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.
- Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.

### **Evaluating**

- Compare the final product to the original design specification.
- Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.
- Consider the views of others to improve their work.
- Investigate famous manufacturing and engineering companies relevant to the project.

### **Technical knowledge and understanding**

- Understand that mechanical systems have an input, process and an output.
- Understand how cams can be used to produce different types of movement and change the direction of movement.
- Know and use technical vocabulary relevant to the project.

- An understanding of how to strengthen and stiffen structures.

### **Designing**

- Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.
- Generate and develop innovative ideas and share and clarify these through discussion.
- Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.

### **Making**

- Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.
- Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.

### **Evaluating**

- Continually evaluate and modify the working features of the product to match the initial design specification.
- Test the system to demonstrate its effectiveness for the intended user and purpose.

### **Technical knowledge and understanding**

- Understand and use electrical systems in their products.
- Know and use technical vocabulary relevant to the project.

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