



Design and Technology at Great Wheltenham C of E Primary School

Robins Class year Two and Year Three

Cycle 1

Title	Making a Vehicle – Wheels and Axles
Overview	The aim of this unit is for the children to learn how wheels and axles work. Children will evaluate existing moving vehicles and mechanisms and to apply this knowledge to plan, design, make and evaluate their own vehicle with a moving mechanism.
Knowledge Acquisition	By the end of this unit, the children will have created a moving vehicle with moving parts. They will know how wheels and axles work on a moving vehicle. They will know how pneumatic systems work in a vehicle. They are able to design a moving vehicle and explain their design and design choices. Children will know how to create their vehicle in stages, selecting the appropriate tools and materials and use them safely. They understand the importance of evaluating their designs recognising what has worked well and suggestions for improvement.
Vocabulary	Wheels, axles, pneumatic systems, vehicles, rotate, movement, stationary, model
Key Learning Objectives	<ul style="list-style-type: none"> ➤ To understand how wheels and axles work. ➤ To understand how pneumatic systems work. ➤ To evaluate existing products against a given success criteria (consider the products sustainability). ➤ To design a moving vehicle based upon a design criteria. ➤ To confidently explain their design and design choices. ➤ To plan the process of making, considering the stages needed to make the product. ➤ To select tools and materials, using these safely with growing accuracy. ➤ To make and evaluate my moving vehicle.
Suggested Learning Experiences	<ul style="list-style-type: none"> ➤ Look at a range of vehicles, including 'real' life' vehicles, observing and discussing the mechanics of movement. ➤ Discuss how the mechanisms have been designed and made including the materials used and the sustainability. ➤ Explore different materials to make the mechanism with creating several models. ➤ Explain the choices of materials, tools, function and aesthetics. ➤ Receive a letter from a museum asking them to make a new vehicle for the Gunpowder Plot display. They will send the success criteria. ➤ Challenge – can you include a pneumatic system? ➤ Discussion, reflection and reasoning opportunities throughout the designing, planning, making and evaluation processes. ➤ Self and peer assessment according to the success criteria.

Title	Preparing a Healthy Picnic
Overview	This unit will teach the pupils about peeling, zesting, cutting safely and applying these skills when preparing healthy dishes. Children will learn key information about healthy eating and where their food comes from. They will gain some practical ideas about ingredients that can be combined to make interesting and healthy salads. We will end this unit by holding a class picnic, sharing the dishes we have created!
Knowledge Acquisition	By the end of the unit, the children will know how to eat a healthy and varied diet. They will know about the different food groups. They will be able to follow a simple recipe with support. They will know how to use measuring spoons, zesters and juicers to prepare food. They will know where some food is grown and some food is caught.
Vocabulary	Diet, healthy, balanced, food group, fruit, vegetables, protein, fibre, carbohydrates, recipe, measuring, zester, juicer, cut, slice, prepare, present.
Key Learning Objectives	<ul style="list-style-type: none"> ➤ To be able to name different fruits and vegetables and where they grow. ➤ To be able to identify the different food groups and give reasons why we need a balanced diet. ➤ To be able to explain why we need to eat fruit and vegetables ➤ To prepare and make a healthy salad. ➤ To choose from a range of equipment and ingredients to prepare a healthy salad. ➤ To evaluate their products and consider the views of others.
Suggested Learning experiences	<ul style="list-style-type: none"> ➤ Tasting opportunities of different fruits and root vegetables ➤ Hold a survey to find out the most popular. ➤ Tasting a range of salads identifying preferred food choices. ➤ Share views on presentation of salads ➤ Practice cutting, peeling juicing skills ➤ In pairs share ideas and write recipes for chosen salad choice. ➤ Create salad menus and invites. ➤ Prepare salad and hold a class picnic! ➤ Evaluate salads and identify preferences with reasons why.

Cycle 2

Title	Making a Bookmark
Overview	The aim of this unit is for the children to develop their skills in modifying threads and fabrics. The children will then demonstrate these skills to create a bookmark.
Knowledge Acquisition	By the end of this unit, the children will know how to plan, design and make a fabric bookmark. They will know how threads and fabrics can be modified. They will explain the steps needed to create a bookmark. They will be able to evaluate a product identifying the successes and areas for improvement.
Vocabulary	Threads, fabric, material, needle, running stitch, knotting, fraying, fringing, pulling threads, twisting, plaiting, interfacing, bookmark, tassel
Key Learning Objectives	<ul style="list-style-type: none"> ➤ To explore how threads and fabrics can be modified (knotting, fraying, fringing, pulling threads, twisting, plaiting). ➤ To design a bookmark for a specific audience.

	<ul style="list-style-type: none"> ➤ To understand and draw the steps needed to make a bookmark. ➤ To make a bookmark using tools, joining and finishing techniques. ➤ To evaluate the completed bookmark.
Suggested Learning Experiences	<ul style="list-style-type: none"> ➤ Explore a range of bookmarks, explaining what they like and dislike about the products giving reasons. ➤ Discuss how the bookmarks have been designed and made, including the materials used and the sustainability. ➤ Discuss how we could make a material bookmark stronger, explore how interfacing works. ➤ Measure and mark out to create the templates needed. ➤ Practice confidently threading a needle and using a running stitch. ➤ Construct the bookmark using materials, tools and techniques taught. ➤ Add finishing touches including a tassel/cord/plait. ➤ Self and peer assess according to the success criteria.

Title	Moving Pictures – Levers and Sliders
Overview	This unit gives children opportunities to develop their understanding of mechanical systems. Following instructions on how to make different types of lever and linkage mechanisms gives children experience and information to draw on when developing their own ideas. They sketch a seaside design based on their ideas, make a prototype, and then create their 'Lever and Linkage picture' using the context of recycling. Finally, children will evaluate their finished product.
Knowledge Acquisition	Children will know about and explore a variety of mechanical systems. Children will be able to generate and draw detailed designs using links and levers. Children will develop design criteria to inform their innovative designs. Children will be able to create a mechanism within a design. Children will evaluate and suggest improvements to their moving picture.
Key LOs	<p>To understand and use a variety of mechanical systems within a product.</p> <p>Year 2</p> <ul style="list-style-type: none"> ○ To generate, model and communicate ideas through talking and drawing designs. ○ To explore and use moving mechanisms within a picture. ○ To evaluate ideas and products against design criteria. <p>Year 3</p> <ul style="list-style-type: none"> ○ To generate, model and communicate ideas through discussion and annotated sketches. ○ To understand use mechanical systems in their products, such as levers and linkages. ○ To evaluate ideas and products against their own design criteria and consider the views of others.
Key vocabulary	Design, brief, recycle, poster/picture, lever, linkage, loose, prototype, input, output, sketch, fixed, annotate, pivot, adapt, mechanical system, criteria, generate, mock-up, evaluate.

Key Learning experiences	<ul style="list-style-type: none">- Explore and investigate books, models with moving parts.- Create seaside models with moving levers and linkages.- As Dragons Den judges create Success Criteria for moving pictures.- Design creative plans for a moving seaside picture with annotations.- Use a variety of materials to create their pictures with moving mechanisms.- Hold a 'Seaside Moving Picture' exhibition to be judged by Year 6 pupils.
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