Year 6 Design Technology Scheme of Work

Autumn – Fairground (Electronics and Structures)

Learning Outcomes –

- To look at a range of familiar products that use rotating parts.
- To investigate ways of using electrical motors to create rotating parts.
- To investigate ways of making a framework for a fairground ride.
- To design a fairground ride with a rotating part.
- To make a fairground ride following a design.
- To evaluate a finished product.

Throughout the year

- Describe the purpose of their products
- Generate innovative ideas, drawing on research
- Make design decisions, taking account of constraints such as time, resources and cost
- Produce appropriate lists of tools, equipment and materials that they need
- Accurately apply a range of finishing techniques, including those from art and design
- Evaluate their ideas and products against their original design specification
- Identify the strengths and areas for development in their ideas and products
- Consider the views of others, including intended users, to improve their work

Skills:	Design	Make	Evaluate	Technical Knowledge – Electronics/ Structures	Vocabulary
	• Identify features of design that will appeal to the intended user	• Use selected tools and equipment precisely - Produce suitable lists of tools, equipment, materials needed, considering constraints	• Evaluate quality of design while designing and making; is it fit for purpose? • Keep checking design is best it can be.	• Select materials carefully, considering intended use of the product, the aesthetics and functionality.	➢ Weakness ➢ Rotation ➢ Movement ➢ Structure ➢ Mechanism ➢ Strength

Year 6 Design Technology Scheme of Work

	• Create own design criteria and specification • Come up with innovative design ideas - Follow and refine a logical plan. • Use annotated sketches, cross-sectional planning and exploded diagrams • Make design decisions, considering, resources and cost • Clearly explain how parts of design will work, and how they are fit for purpose • Independently model and refine design ideas by making prototypes and using pattern pieces	• Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics • Create, follow, and adapt detailed step-by-step plans • Explain how product will appeal to audience; make changes to improve quality • Accurately measure, mark out, cut and shape materials/components • Accurately assemble, join and combine materials/components • Accurately apply a range of finishing techniques • Use techniques that involve a number of steps • Be resourceful with practical problems	• Evaluate ideas and finished product against specification, stating if it's fit for purpose • Test and evaluate final product; explain what would improve it and the effect different resources may have had	• Explain how product meets design criteria • Reinforce and strengthen a 3D frame • Use different types of circuit in product • Think of ways in which adding a circuit would improve product • Program a computer to monitor changes in environment and control product	➢ System ➢ Circuit ➢ Materials

Year 6 Design Technology Scheme of Work

Spring – Chinese Inventors/Kites (Structures)

Learning Outcomes –

- To look at a range of kite designs and understand the uses of kites in ancient China
- To build and test prototype kites
- To design a kite based on a design criteria
- To make a kite following a design plan
- To evaluate and adapt a finished product

Throughout the year

- Describe the purpose of their products
- Generate innovative ideas, drawing on research
- Make design decisions, taking account of constraints such as time, resources and cost
- Produce appropriate lists of tools, equipment and materials that they need
- Accurately apply a range of finishing techniques, including those from art and design
- Evaluate their ideas and products against their original design specification
- Identify the strengths and areas for development in their ideas and products
- Consider the views of others, including intended users, to improve their work

Skills:	**Design**	**Make**	**Evaluate**	**Technical Knowledge – Structures**	**<u>Vocabulary</u>**
	• Draw on market research to inform design • Use research of user's individual needs, wants, requirements for design	• Use selected tools and equipment precisely - Produce suitable lists of tools, equipment, materials needed, considering constraints • Select appropriate materials, fit for purpose;	• Evaluate quality of design while designing and making; is it fit for purpose? • Keep checking design is best it can be. • Evaluate ideas and finished product	• Select materials carefully, considering intended use of the product, the aesthetics and functionality. • Explain how product meets design criteria	➢ Kite tail ➢ Air resistance ➢ Invent ➢ Materials ➢ Innovate ➢ Balance ➢ Framework ➢ Sail

Year 6 Design Technology Scheme of Work

	• Identify features of design that will appeal to the intended user • Create own design criteria and specification • Come up with innovative design ideas - Follow and refine a logical plan. • Use annotated sketches, cross-sectional planning and exploded diagrams • Clearly explain how parts of design will work, and how they are fit for purpose • Independently model and refine design ideas by making prototypes and using pattern pieces	explain choices, considering functionality and aesthetics • Create, follow, and adapt detailed step-by-step plans • Explain how product will appeal to audience; make changes to improve quality • Accurately measure, mark out, cut and shape materials/components • Accurately assemble, join and combine materials/components • Be resourceful with practical problems	against specification, stating if it's fit for purpose • Test and evaluate final product; explain what would improve it and the effect different resources may have had • Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose • Evaluate how much products cost to make and how innovative they are • Research and discuss how sustainable materials are • Consider the impact of products beyond their intended purpose • Discuss some key inventors/designers/	• Reinforce and strengthen a 3D frame	➢ Drag ➢ Kite line ➢ Prototype

Year 6 Design Technology Scheme of Work

	• Use computer-aided designs		engineers/ chefs/manufacturers of ground-breaking products		

Summer – The Great Bread Bake Off (Food and Nutrition)

Learning Outcomes –

- To investigate bread products
- To investigate and evaluate bread products according to their characteristics
- To be able to design a new bread product for a particular person or event.
- To be able to make bread based on a plan and design.
- To be able to evaluate a finished product.

Throughout the year

- Describe the purpose of their products
- Generate innovative ideas, drawing on research
- Make design decisions, taking account of constraints such as time, resources and cost
- Produce appropriate lists of tools, equipment and materials that they need
- Accurately apply a range of finishing techniques, including those from art and design
- Evaluate their ideas and products against their original design specification
- Identify the strengths and areas for development in their ideas and products
- Consider the views of others, including intended users, to improve their work

Skills:	**Design**	**Make**	**Evaluate**	**Technical Knowledge – Food & Nutrition**	**<u>Vocabulary</u>**
	• Draw on market research to inform design	• Use selected tools and equipment precisely • Produce suitable lists of tools, equipment,	• Keep checking design is best it can be. • Evaluate ideas and finished product	• Understand a recipe can be adapted by adding / substituting ingredients	➢ Appearance ➢ Origin ➢ Weighing scales ➢ Bake

Year 6 Design Technology Scheme of Work

	• Use research of user's individual needs, wants, requirements for design • Identify features of design that will appeal to the intended user • Create own design criteria and specification • Use annotated sketches, cross-sectional planning and exploded diagrams • Make design decisions, considering, resources and cost	materials needed, considering constraints • Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics • Create, follow, and adapt detailed step-by-step plans • Explain how product will appeal to audience; make changes to improve quality • Accurately measure ingredients • Accurately assemble, join and combine materials/components • Accurately apply a range of finishing techniques • Use techniques that involve a number of steps • Be resourceful with practical problems	against specification, stating if it's fit for purpose • Test and evaluate final product; explain what would improve it and the effect different resources may have had • Evaluate how much products cost to make • Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products	• Explain seasonality of foods • Learn about food processing methods • Name some types of food that are grown, reared or caught in the UK or wider world • Adapt recipes to change appearance, taste, texture or aroma. • Describe some of the different substances in food and drink, and how they can affect health - Prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. • Use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	➢ Ingredients ➢ Bake ➢ Recipe ➢ Balanced diet ➢ Carbohydrates ➢ Knead ➢ Yeast ➢ Sieve