**Featherstone Wood Primary School**

*Working Collaboratively, Independence, Community Values, Reflectiveness*

*Stickability; Risk-Taking, Inquisitiveness, Communication* *National Curriculum Coverage*

**Long Term Planning Design & Technology**

*Nov '22*

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

## KS1 National Curriculum

**Design**

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

**Make**

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

**Evaluate**

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

**Technical knowledge**

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products

**Cooking and Nutrition**

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

## KS2 National Curriculum

**Design**

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

**Make**

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

**Evaluate**

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

**Technical knowledge**

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

**Cooking and Nutrition**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

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## Design & Technology Curriculum Statement of Intent:

Design and technology offers our children a chance to use creative thinking to develop tangible products. Our children work on a range of projects through our cross-curricular topic based approach. Through the study of DT our pupils draw on disciplines such as mathematics, science, engineering, computing and art and make links to real world products. Our pupils learn how to take risks and become resourceful, innovative, enterprising and capable citizens.

<table>
<tr><td>EYFS</td><td colspan="3"><u>Continuous provision</u><br>Activities - junk modelling, collage, play dough, clay, construction resources (wooden blocks, cars, lego, guttering, ramps), woodwork<br>Skills - cutting, measuring, drawing, fixing, joining, planning, design, make, collaboration, colour mixing, using tools</td><td rowspan="4"><u>Cultural Awareness</u><br><br>Wherever possible, we link DT learning to aspirational people, famous structures and real-world products.<br><br>We are a healthy living school. Every term, our pupils have the opportunity to prepare healthy and varied dishes from the UK and around the world linked to various festivals and wider curriculum events. We are an internationally minded school, and wherever possible will make links to food from around the world and help our children understand where their food comes from.<br><br><u>Beacon 1</u><br>• Prepare dishes using basic principles of healthy living and varied diet<br>• Explain where some food comes from<br><u>Beacon 2</u><br>• Explain the importance of a healthy diet<br>• Describe where a variety of ingredients are grown, reared, caught and processed<br><u>Beacon 3</u><br>• Make healthy and varied choices when planning dishes</td></tr>
<tr><td>Year 1</td><td><u>Paper Product Project</u><br>Provide opportunity for pupils to cut, shape and join a wide range of paper-based materials<br><br>FOCUS TASK: To create a windmill</td><td><u>Healthy eating project</u><br>Provide opportunity for pupils to understand the differences between fruit and vegetables<br>LINK WITH SCIENCE TOPIC OF ANIMALS INCLUDING HUMANS - NUTRITION<br>FOCUS TASK: To create a smoothie including packaging</td><td><u>Textiles project</u><br>Provide opportunity for pupils to cut, shape and join a range of textiles<br>LINK WITH ENGLISH TOPIC TRADITIONAL FAIRYTALES<br>FOCUS TASK: To create own fairy tale puppet</td></tr>
<tr><td>Year 2</td><td><u>Paper project</u><br>Provide opportunity for pupils to cut, shape and join a wide range of paper-based materials<br>LINK WITH ENGLISH TOPIC TRADITIONAL FAIRYTALES<br>FOCUS TASK: To create a chair for baby bear by folding paper</td><td><u>Mechanisms Project</u><br>Provide opportunity for pupils to design and build a structure with a specific purpose<br><br>FOCUS TASK: To create a Fairground wheel</td><td><u>Levers Project</u><br>Provide opportunity for pupils to explore and use levers and sliders<br>LINK WITH SCIENCE TOPIC LIVING THINGS AND THEIR HABITATS<br>FOCUS TASK: to create a moving picture of an animal in their habitat (moving monster)</td></tr>
<tr><td>Year 3</td><td><u>Wire Project</u><br>Provide opportunity for pupils to explore pneumatic systems<br>LINK WITH TOPIC OF IRON AGE<br><br>FOCUS TASK: To make bracelet</td><td><u>Roman Fort Project</u><br>Provide opportunity for pupils to explore and build with nets<br>LINK WITH HISTORY TOPIC ON THE ROMANS<br>FOCUS TASK: To create a Roman-style fort (Constructing a castle)</td><td><u>Eating Seasonally project</u><br>Provide opportunity for pupils to improve understanding of which food can be grown in the UK<br>LINK WITH SCIENCE TOPIC OF ANIMALS INCLUDING HUMANS<br>FOCUS TASK: To create a savoury tart using seasonal ingredients</td></tr>
</table>

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| Year 4 | **Architect Project**<br>Provide opportunity for pupils **to design and build a quality complex structure using their choice of appropriately selected materials**<br>**LINK WITH HISTORY TOPIC ON ANCIENT EGYPT**<br>**FOCUS TASK: To create their own 3D pyramid (structures Pavilions)** | **Carpentry Project**<br>Provide opportunity for pupils **to construct a quality structure using wood as a frame**<br>**LINK WITH SCIENCE TOPIC ON ANIMALS (HABITATS)**<br>**FOCUS TASK: To create bird houses** | **Electrical Systems Torches Project**<br>Evaluate existing torches, develop a new functional torch design<br>**LINK WITH SCIENCE TOPIC ON ELECTRICITY**<br>**FOCUS TASK: To create a torch** | • Describe how a variety of ingredients are grown, reared, caught and processed and discuss how seasonality impacts on variety and availability |
| Year 5 | **Electronic greetings card project**<br>Provide opportunity for pupils to develop a prototype with a specific function, showing an understanding of circuits<br>**FOCUS TASK: To create their own electronic Christmas card** | **What could be healthier project**<br>Provide opportunity for pupils **to explore different ingredients and discuss how they contribute a healthy lifestyle**<br>**FOCUS TASK: To substitute ingredients in a well known dish** | **Pop-up book project**<br>Provide opportunity for pupils to explore mechanisms that control movement<br>**LINK WITH SCIENCE TOPIC ON LIVING THINGS AND THEIR HABITAT**<br>**FOCUS TASK: To create their own pop-up book about an animal** | |
| Year 6 | **Structure Project**<br>Provide opportunity for pupils to explore and build with cams and levers<br>**FOCUS TASK: To design a new playground** | **Product Design Project**<br>Provide opportunity for pupils to model and communicate their ideas through computer-aided designs<br>**LINK WITH COMPUTING WORK (CODING)**<br>**FOCUS TASK: To create their own interactive computer game (Navigating the World)** | **Fashion Designer Project**<br>Provide opportunity for pupils **to design and create a quality product using textiles, including developing pattern pieces**<br>**FOCUS TASK: To create their T-shirt/top for their Y6 'Leavers Party' (Textile)** | |

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| | Key Skills and Knowledge | | |
|---|---|---|---|
| | **Beacon 1** | **Beacon 2** | **Beacon 3** |
| **Knowledge** | • Name a range of mechanisms<br>• Use key vocabulary to design and evaluate | • Name a wide range of mechanisms<br>• Use key vocabulary to design and evaluate | • Name a wide range of mechanisms<br>• Use key vocabulary to design and evaluate |
| | Understand the following key vocabulary: | Understand the following key vocabulary: | Understand the following key vocabulary: |
| | **YEAR 1**<br>**cutting**<br>**design**<br>**wheel**<br>**axel**<br>**stronger**<br>**stiffer**<br>**stable**<br>**structure**<br>**diagram**<br><br>**YEAR 2**<br>**lever**<br>**slider**<br>**mechanism**<br>**material**<br>**product**<br>**textile**<br>**joining**<br>**shaping**<br>**finishing** | **YEAR 3**<br>**model**<br>**structural integrity**<br>**durability**<br>**reliability**<br>**strength**<br>**pivot**<br>**frame**<br>**quality**<br>**gear**<br>**pulley**<br><br>**YEAR 4**<br>**series circuit**<br>**bulb**<br>**switch**<br>**buzzer**<br>**annotated sketches**<br>**cross-sectional diagram**<br>**Prototype** | **YEAR 5**<br>**prototypes**<br>**target group**<br>**model**<br>**structural integrity**<br>**durability**<br>**reliability**<br>**strength**<br><br>**YEAR 6**<br>**cams**<br>**levers**<br>**software**<br>**motors**<br>**prototypes**<br>**exploded diagram** |
| **Skills** | • Design a product based on design-criteria<br>• Communicate ideas through talking and simple drawings/diagrams<br>• Select from and use a range of tools and equipment to perform practical tasks | • Develop your own design criteria to meet a design brief<br>• Communicate ideas through annotated sketches and cross-sectional diagrams<br>• Accurately use tools and equipment to perform practical tasks<br>• Evaluate ideas and products against their own design criteria | • Research target groups and existing products to inform your own design criteria<br>• Communicate ideas through a range of means, including exploded diagrams<br>• Accurately use a wide range of tools and equipment to perform practical tasks |

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|---|---|---|---|
| | • Evaluate ideas and products against design criteria | | • Consider the views of others when evaluating ideas and products |