Featherstone Wood Primary School

Working Collaboratively, Independence, Community Values, Reflectiveness

Stickability; Risk-Taking, Inquisitiveness, Communication

Long Term Planning DT

National Curriculum Coverage

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.

DT 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

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Year 1	**Paper Product Project** Provide opportunity for pupils **to cut, shape and join a wide range of paper-based materials** **Eg) design and create a high-quality Celebration card**	**Builder Project** Provide opportunity for pupils **to select and use construction materials to build a structure** **Eg) Lego building**	**Wheels Project** Provide opportunity for pupils **to explore and use wheels and axles** **Eg) design and create a vehicle/imaginary creature/robot**	**Cultural Awareness** Wherever possible, we link DT learning to aspirational people, famous structures and real-world products. 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. Beacon 1 • Prepare dishes using basic principles of healthy living and varied diet • Explain where some food comes from Beacon 2 • Explain the importance of a healthy diet • Describe where a variety of ingredients are grown, reared, caught and processed Beacon 3 • Make healthy and varied choices when planning dishes • Describe how a variety of ingredients are grown, reared, caught and processed and discuss how seasonality impacts on variety and availability
Year 2	**Textiles Product Project** Provide opportunity for pupils **to cut, shape and join a wide range of textiles** **Eg) Design and create a high-quality flag/fashion accessory**	**Architect Project** Provide opportunity for pupils **to design and build a structure with a specific purpose** **Eg) an underwater building** **bug hotel**	**Levers Project** Provide opportunity for pupils **to explore and use levers and sliders** **Eg) design and create a moving picture/puppet**	
Year 3	**Pivot Product Project** Provide opportunity for pupils **to design and create a quality product using linkage** **Eg) Moving paper puppet**	**Ironworker Project** Provide opportunity for pupils **to construct a quality structure using wire** **Eg) Iron Age jewellery**	**Mechanic Project** Provide opportunity for pupils to explore and build with gears and pulleys Eg) fairground ride/working well/tree-house delivery system	
Year 4	**Fashion Designer Project** Provide opportunity for pupils **to design and create a quality product using textiles, including developing pattern pieces** Eg) design and create clothes for a teddy	**Carpentry Project** Provide opportunity for pupils **to construct a quality structure using wood as a frame** **Eg) a shelter/tree house**	**Electrician Project** Provide opportunity for pupils to explore and build with circuits, bulbs, buzzers and switches Eg) torch	
Year 5	**Inventor Project** Provide opportunity for pupils to develop a prototype with a specific function, communicating their ideas through annotated sketches and diagrams Eg) design a toy/gadget	**Structural Engineer Project** Provide opportunity for pupils **to design and build a quality complex structure focusing on strength** **Eg) a bridge**	**Mechanical Engineer Project** Provide opportunity for pupils to explore and build with cams and levers Eg) moving toy	
Year 6	**Product Design Project** Provide opportunity for pupils to model and communicate their ideas through computer-aided designs Eg) use design software (Tinkercad)	**Architect Project** Provide opportunity for pupils **to design and build a quality complex structure using their choice of appropriately selected materials**	**Electrical Engineer Project** Provide opportunity for pupils to explore and build with circuits and motors Eg) spinning solar system/spinning carousel	

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