Wellington Primary

Design Technology

DT Overview

	Autumn	Spring	Summer
Year 1	Structures- Buildings in the local area	Mechanisms- using sliders and levers to make a moving picture	Food-making a summer fruit salad
Year 2	Mechanisms- wheels and axles. Design and make a vehicle	Textiles-design and make a hand/sock puppet	Food- making pizzas
Year 3	Food - Sandwiches	Structures – Money Box	Mechanical systems – Moving pictures for a story
Year 4	Textiles – Anglo Saxon purses	Electrical systems – Making an alarm (STEM Workshop)	Food - Smoothie
Year 5	Food – Christmas biscuits	Textiles - Slippers	Mechanical systems – Moving toy scene (STEM Workshop)
Year 6	Structures – Stixx project (STEM Workshop)	Food - Muffins	Electrical systems – Programming STEM Workshop

Knowledge, Understanding & Skills

KS1			
Design	**Make**	**Evaluate**	**Technology Knowledge**
▪ 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	▪ select from and use a range of tools and equipment to perform practical tasks such as 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	▪ explore and evaluate a range of existing products ▪ evaluate their ideas and products against design criteria	▪ build structures, exploring how they can be made stronger, stiffer and more stable ▪ explore and use mechanisms, such as levers, sliders, wheels and axles, in their products.
KS2			
Design	**Make**	**Evaluate**	**Technology Knowledge**
▪ 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,	▪ select from and use a wider range of tools and equipment to perform practical tasks, such as 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	▪ 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	▪ apply their understanding of how to strengthen, stiffen and reinforce more complex structures ▪ understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages ▪ understand and use electrical systems in their products, such as series circuits incorporating

prototypes, pattern pieces and computer-aided design	and aesthetic qualities		switches, bulbs, buzzers and motors ▪ apply their understanding of computing to programme, monitor and control their products.

Topics & Coverage

Year 1		
Design		
Structures-buildings in the local area	**Mechanisms- moving pictures using sliders and levers**	**Food- fruit salad**
Make		
Design a building in the local area using boxes, photos and other media	Make a moving picture using levers and sliders	Make a healthy fruits salad using your 5 a day
Evaluate		
Evaluate their finished design by looking at their plan. Use 2 stars and a wish to evaluate i.e. two things they love about their structure and 1 thing they would change/improve	Evaluate their finished design by looking at their plan. Use 2 stars and a wish to evaluate i.e. two things they love about their structure and 1 thing they would change/improve	Explore the different ways they can make and produce their fruit salad and evaluate.
Technical Knowledge		
Build structures, exploring how they can be made stronger, stiffer and more stable	Explore and use mechanisms, such as levers and sliders. Look at examples in pop up books/moving books to see how the mechanism is made	Select from and use a wide range of materials and components, including, textiles and ingredients, according to their product Use the basic principles of healthy eating and varied diet

Year 2

Design		
Mechanisms – wheels and axles	**Textiles-hand/ sock puppets**	**Food-making pizzas**
Make		
Using wheels and axles to make a vehicle	Using textiles to make a puppet	Healthy eating and designing and preparing a pizza
Evaluate		
To evaluate their ideas and products against design criteria/checklist	To evaluate their ideas and products against design criteria	To evaluate their ideas and products against design criteria/checklist
Technical Knowledge		
To build structures, exploring how they can be made stronger, stiffer and more stable	To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	Use appropriate tools to make a prepare their healthy pizza Use knowledge of food wheel to produce a healthy pizza

Year 3

Design

Food - sandwiches	Structures – money boxes	Mechanical Systems – moving pictures for a story

Make

Preparing fruit and vegetables – including nutrition requirements for K.S.2	Shell structures	Levers & linkages

Evaluate

Carry out sensory evaluations of a variety of ingredients – recording results in graphs/tables.	Evaluate the ongoing work and the final product – referencing the initial design and views' of others.	Evaluate the ongoing work and the final product – referencing the initial design and views' of others.

Technical Knowledge

Use appropriate equipment and utensils to prepare and combine food.	Know and use relevant technical and sensory vocabulary. Test and evaluate their own products against design criteria and the intended user and purpose: e.g. Can it hold money? Develop and use knowledge of how to construct strong, stiff shell structures.	Know and use relevant technical and sensory vocabulary. Test and evaluate their own products against design criteria and the intended user and purpose: e.g. Do the pictures move as they should? Understand and use lever and linkage mechanisms

Year 4

Design		
Textiles – Anglo Saxon purses	**Electrical systems – making an alarm (STEM workshop)**	**Food - Smoothie**
Make		
2D shapes to a 3D product	Simple circuits and switches	Preparing fruits and vegetables – including nutrition requirements for KS2
Evaluate		
Test their product against the original design criteria and intended user.	Take into account others' views. Identify strengths and areas for improvement.	Carry out sensory evaluations of a variety of ingredients – recording results in graphs/tables.
Technical Knowledge		
Know how to strengthen, stiffen and reinforce fabrics. Understand how to securely join two piece of fabric together.	Understand and use electrical systems in their products, such as series circuits, incorporating: bulbs and buzzers and different types of switches (pressure/tilt/push switch).	Discuss a range of fresh/processed ingredients for their product – including technical and sensory vocabulary. Use appropriate equipment and utensils to prepare and combine food.

Year 5

Design		
Textiles - Slippers	**Mechanical systems – Moving toy / scene STEM workshops**	**Food – Christmas biscuits**
Make		
Combining different fabric shapes	Pulleys or gears	Celebrating culture and seasonality - including cooking and nutrition requirements for KS2
Evaluate		
Evaluate and the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. Critically evaluate the quality of the design, functionality and fitness for purpose.	Evaluate and the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. Critically evaluate the quality of the design, functionality and fitness for purpose.	Carry out sensory evaluations of a variety of ingredients – recording results in graphs/tables. Critically evaluate the quality of the design, taste and appearance.
Technical Knowledge		
Critically evaluate their products against their design specification. Identify strengths and areas for development.	Evaluate and modify the working features to match the initial design specifications. Test the system to demonstrate its effectiveness. Evaluate and 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 to use utensils and equipment to prepare food. Know and use relevant sensory vocabulary. Understand about seasonality in relation to food products and the source of different food products.

Year 6

Design

Electrical systems – STEM workshop	Structures - STIX Project, STEM workshop	Food – Muffins
Make		
More complex switches and circuits – including programming monitoring and control	Frame Structures – using triangles	Celebrating culture and seasonality - including cooking and nutrition requirements for KS2
Evaluate		
Critically evaluate their products against their design specification. Identify strengths and areas for development. Evaluate and modify the working features to match the initial design specifications. Test the system to demonstrate its effectiveness. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.	Critically evaluate their products against their design specification. Identify strengths and areas for development. Evaluate features to match the initial design specifications. Test the system to demonstrate its effectiveness. Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.	Critically evaluate their products against their design specification. Identify strengths and areas for development. Evaluate features to match the initial design specifications. Taste test – do the ingredients work is there anything more you might need to add / take away? Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.
Technical Knowledge		
Understand and use electrical systems in their products.	Understand how to strengthen, stiffen and reinforce 3-D frameworks. Know and use technical vocabulary relevant to the project.	Understand how to use utensils and equipment to prepare food. Know and use relevant sensory vocabulary. Understand about seasonality in relation to food products and the source of different food products.

Vocabulary	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	planning, investigating design, evaluate, make, user, purpose, ideas, product,	investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype