West Heath Primary School

Curriculum Map DT

Intent

Design and Technology lays at the forefront of creativity. The subject allows for children to bring their ideas and designs to life using their ever-developing skills of creativity and problem solving and they are encouraged to work not just individually but as part of a team. Throughout the topic, the children are exposed to the wider world, seeing how products have been developed over time and the importance designers and inventors have on influencing new products in today's society. Children are given access to a range of materials and equipment that becomes more advanced throughout their journey at school. The gradual development of materials and equipment throughout each year allows the children to acquire an understanding of health and safety, responsibility and quality control. Design and technology provides endless possibilities for the children to apply English, maths, science and computing in an alternative manner throughout each of the products they create. Design and technology thrives on allowing children a means to express their creativity, children of all abilities to express themselves and bring the unique ideas of the individuals to life.

Implementation

The teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge. The design process should be rooted in real life with relevant contexts to give meaning to learning. While making, children should be given choice and a range of tools to choose freely from. To evaluate, children should be able to appraise their own products against a design criteria as well as products of their peers. Each of these steps should be rooted in technical knowledge and vocabulary. The curriculum is mapped so as to ensure that the National Curriculum is covered thoroughly.

When designing and making, KS1 pupils will be taught to:

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.
- Children use their understanding of significant people in a given area to aid their own designs.

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 and the work of significant designers.
- 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.

When designing and making, KS2 pupils will be taught to:

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.
- Children will draw on design concepts used by significant designers to aid their own designs.

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.

Impact

Within design and technology, we strive to prepare children to be successful in the world they are entering. Our curriculum is high quality, well thought out and planned to demonstrate progression of knowledge and skills. Children's excitement and curiosity of the wider world is encouraged and promoted

and, by taking the time to analyse and evaluate the development of products, children can truly understand that their imagination has no boundaries. The children are encouraged to strive for ambition when creating products of their own and their knowledge and experiences become more enriching during each step of their design and technology journey. By exposing the children to new concepts, tools and techniques, each year their horizons are broadened and they acquire skill sets and talents that they will use throughout their lives.

We measure the impact of our curriculum through the following methods:

- Assessing children's understanding of topic-linked vocabulary before and after the unit is taught.
- Images and videos of the children's practical learning.
- Pupil voice
- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.
- Annual reporting of standards across the curriculum.
- Marking of work in books.

DT CURRICULUM MAP						
Year 1						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	Toys through time	Remembrance	The Seaside	Seasons	Intrepid Explorers	People who help us
Focus	**Kites** **Structures** **What makes a good kite?**	**ART**	**ART**	**Food and Nutrition (link to science)** **What dish could be made from seasonal vegetables?**	**Moving Pictures** **Levers and Sliders** **How does the picture move using a pivot?**	**ART**
HEAD (Knowledge)	• Using beams to create a cross-section of support • How kites soar in the wind • What makes a good/bad kite.			• Be able to identify healthy food choices • Basic hygiene and food handling • Vegetables of different seasons.	• What a mechanism is • What a slider is and how it works • What a lever is and how it works including the use of the word pivot	
HANDS (Skills) Developing, planning and communicating ideas.	• Model their ideas in card and paper • Develop their design ideas applying findings from their earlier research			• Draw on their own experience to help generate ideas • Develop their ideas applying findings from their earlier research	• Suggest ideas and explain what they are going to do • Develop their design ideas applying findings from their earlier research	

Working with tools, equipment, materials and components to make quality products (inc. food)	• Make their design using appropriate tools and techniques • With help measure, mark out, cut and shape a range of materials • Use tools *eg scissors and a hole punch* safely			• Select and use appropriate vegetables, processes and tools • Use basic food handling, hygienic practices and personal hygiene • Use simple finishing techniques to improve the appearance of their product	• Make their design using appropriate techniques • With help measure, mark out, cut and shape a range of materials • Use tools *eg scissors and a hole punch* safely • Assemble, join and combine materials and components together using a variety of temporary methods e.g.	

					• Glues, masking tape or split pins.	
Evaluating processes and products	• Evaluate their product by discussing how well it works in relation to the purpose • Evaluate their products as they are developed, identifying strengths and possible changes they might make			• Evaluate their product by asking questions about what they have made and how they have made it.	• Evaluate their product by discussing how well it works in relation to the purpose • Evaluate their products as they are developed, identifying strengths and possible changes they might make	
Heart (Values)	• Respect Honesty Empathy Collaboration Resilience Determination Excellence					

Resources	For the kite: https://www.wikihow.com/Make-a-Kite-for-Kids For the seasonal dish: https://www.goodto.com/recipes/spring-veg-soup https://www.happyfoodstube.com/5-ingredient-spring-vegetables-soup/ For the moving picture: https://www.twinkl.co.uk/resource/t2-d-107-making-levers-and-linkages-waving-hand-activity-sheet

DT CURRICULUM MAP						
Year 2						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	Great fire of London	Titanic	The UK	Africa	Charles Darwin	My Local Area
Focus	**Mechanisms** **Wheels and axles** **How are wheels, axels and chassis used in fire engines?**	**ART**	**Structures** **Bridges** **What makes a strong and stable bridge?**	**ART**	**Textiles** **Animal Puppets** **How is a needle and thread used to make an animal puppet?**	**ART**
HEAD (Knowledge)	• Know what a mechanism is • Use and understand the vocabulary wheel, axel and chassis		• Know what the London Bridge is and the Severne Bridge • Know that a bridge must support its own weight and the weight of people using them • Know that a buttress our wider base makes structures more stable		• Know and use the terms textile and material. • Know what a template is and how to use it.	

HANDS (Skills) Developing, planning and communicating ideas.	• Develop their design ideas through discussion, observation, drawing and modelling • Identify simple design criteria • Make simple drawings and label parts		• Develop their design ideas through discussion, observation , drawing and modelling • Identify simple design criteria • Make simple drawings and label parts		• Develop their design ideas through discussion, observation , drawing and modelling • Identify simple design criteria • Understand the need for a template	
Working with tools, equipment, materials and components to make quality products (inc.food)	• Measure, cut and score with some accuracy • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product • Choose and use appropriate		• Begin to select tools and materials; use vocab' to name and describe them • Measure, cut and score with some accuracy • Use hand tools safely and appropriately • Assemble, join and combine materials in order to make a product		• Begin to select tools and materials; use vocabulary to name and describe them • Draw around a template and cut with some accuracy • Use needles and scissors	

	finishing techniques				safely and appropriately • Assemble, join and combine materials in order to make a product using needles and thread	
Evaluating processes and products	• Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them		• Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them		• Evaluate against their design criteria • Evaluate their products as they are developed, identifying strengths and possible changes they might make • Talk about their ideas, saying what they like and dislike about them	

• **HEART (Values)**	Respect Honesty Empathy Collaboration Resilience Determination Excellence
Resources	For the bridge: https://www.youtube.com/watch?v=oVOnRPefcno https://www.youtube.com/watch?v=FcWTdGHg0MY https://www.youtube.com/watch?v=8Bxi6s8c6-g For the puppet: Kapow primary website (need to subscribe for free trial)

DT CURRICULUM MAP						
Year 3						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	The Stone Age	Bronze Age	Biomes- Savannah	Science - Plants	The Egyptians	Science – Astronauts
Focus	**ART**	**Food Technology** **Food that is grown** **What meal would a person from the Bronze Age eat?**	**ART**	**Structures** **Green houses** **What makes an effective greenhouse?**	**ART**	**Structures** **Packaging** **How could an astronaut examine hazardous materials?**
HEAD (Knowledge)		• Know that food can be caught, grown, raised and processed • Know the principles of a healthy and varied diet • Know a variety of different fruits, vegetable and herbs.		• Know how to reinforce structures • Know the purpose of a greenhouse and how they work		• Understand how packaging materials can be recycled to create a purposeful product.

HANDS (Skills) Developing, planning and communicating ideas.		• Design a meal in line with the purpose • Develop their ideas applying findings from their earlier research		• Identify a purpose and establish criteria for a successful product. • Plan the order of their work before starting • Explore, develop and communicate design proposals by modelling ideas • Make drawings with labels when designing		• Generate ideas for an item, considering its purpose and the user/s • Explore, develop and communicate design proposals by modelling ideas • Make drawings with labels when designing
Working with tools, equipment, materials and components to make quality products (inc food)		• Demonstrate hygienic food preparation and storage • Prepare a variety of different ingredients by washing, chopping and grating • Select and use appropriate vegetables,		• Select tools and techniques for making their product • Measure, mark out, cut, score and assemble components with more accuracy • Work safely and accurately with a range of simple tools		• Measure, mark out, cut, score and assemble components with more accuracy • Work safely and accurately with a range of simple tools • Think about their ideas as they make progress and be willing change things if

		processes and tools • Use simple finishing techniques to improve the appearance of their product		• Think about their ideas as they make progress and be willing change things if this helps them improve their work • Measure, tape or pin, cut and join fabric with some accuracy		this helps them improve their work • Measure, tape or pin, cut and join fabric with some accuracy • Use finishing techniques strengthen and improve the appearance of their product using a range of equipment
Evaluating processes and products		• Evaluate their product against original design criteria • Evaluate their product by asking questions about what they have made and how they have made it.		• Evaluate their product against original design criteria.		• Evaluate their product against original design criteria *e.g. how well it meets its intended purpose* • Disassemble and evaluate familiar products

HEART (Values)	• Respect Honesty Empathy Collaboration Resilience Determination Excellence
Resources	Astronaut glove box: https://images.kaplanco.com/images/content/InsightsAndInspirations/astronaut-glove-box_2_a.pdf

DT CURRICULUM MAP						
Year 4						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	Anglo Saxons	Vikings	Earthquakes and Volcanoes in Europe.	Mountains in Europe.	Science – Power it up.	London our capital
Focus	**Pulleys** **How would the Anglo Saxons lift heavy materials in construction?**	**ART**	**Food Technology Global Food Italy** **How would Italians use ingredients to make a pizza?**	**ART**	**Electrical Systems** **How can an electrical circuit be used to make a steady hand game?**	**ART**
HEAD (Knowledge)	• Know what pulleys are and how they function • Know what a drive belt is- the belt which connects and transfers movement between two pulleys		• Using a grater, weighing accurately, food hygiene • Preparing a baking tray		• How to use clamp, saw and vice • What is needed in a successful circuit • Explain that it contains a complete circuit	
HANDS (Skills) Developing, planning and communicating ideas.	• Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative		• Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing		• Evaluate products and identify criteria that can be used for their own designs	

	methods of making if the first attempts fail		specific features • Evaluate products and identify criteria that can be used for their own designs			
Working with tools, equipment, materials and components to make quality products (incfood)	• Select appropriate materials, tools and techniques • Measure and mark out accurately • Use skills in using different tools and equipment safely and accurately		• Select appropriate tools and techniques for making their product		• Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and permanent ways	

• **Evaluating processes and products**	• Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests • Evaluate it personally and seek evaluation from others		• Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests		• Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests	
HEART (Values)	Respect Honesty Empathy Collaboration Resilience Determination Excellence					
Resources	For the pulley: https://www.archives.norfolk.gov.uk/-/media/archives/archives-pdfs/ks2-4-resource-packs/how-can-we-transport-and-harness-water.pdf					

DT CURRICULUM MAP						
Year 5						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	The Victorians	Heroes and Villains of British History	Water Worlds	Global Trade	The Greeks	Science – Super Scientists
Focus	**ART**	**Cams** **Moving Models** **How does a cam make a moving model?**	**ART**	**Food Technology** **Food around the world** **What dish can be made from imported food?**	**ART**	**Control** **How can we control a light up sign?**
HEAD (Knowledge)		• Understand and use cams in products • Types of motion and centre of rotation • Using a drill and screw driver • Exploded drawings- a 'blown-apart' drawing showing how the components are joined to		• Know what constitutes a healthy diet • Know what a staple food is and some of the staple food used including rice, maize and potatoes around the world • Understand the concepts of food miles and fair trade		• Understand how LEDs may be used instead of traditional incandescent bulbs in series circuits. • To know how to construct a working circuit with one or more lights, and fit it in a decorative illuminated sign

		make a product		• Know that different countries have different culinary dishes		
HANDS (Skills) Developing, planning and communicating ideas.		• Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing specific features		• Generate ideas, considering the purposes for which they are designing		• To investigate and analyse illuminated signs • To develop ideas for a decorative illuminated sign • To investigate ways in which computers can be used to program and control lights in a product • Generate ideas, considering the purposes for which they are designing • Make labelled drawings from different views showing

						specific features
Working with tools, equipment, materials and components to make quality products (inc. food)		• Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and		• Select appropriate equipment • Measure accurately • Combine ingredients		• Select appropriate tools and techniques for making their product • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques • Join and combine materials and components accurately in temporary and

		permanent ways				permanent ways
Evaluating processes and products		• Evaluate their work both during and at the end of the assignment • Evaluate their products carrying out appropriate tests		• Evaluate a product against the original design specification • Evaluate it personally and seek evaluation from others		• Evaluate their work both during and at the end of the Assignment • Evaluate their products carrying out appropriate tests

HEART (Values)	Respect Honesty Empathy Collaboration Resilience Determination Excellence
Resources	For the light up sign: PlanBee resource on the system.

DT CURRICULUM MAP						
Year 6						
Term	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	WW2	Refugees (Conflict)	Rivers	The Americas	The Romans	Transition
Focus	**ART**	**Structures** **Shelter** **What makes a strong and stable shelter?**	**ART**	**SATS**	**Electrical circuits** **Fan Boats** **Why is it important for a boat to be streamlined?**	**Textiles** **Bags** **How can a bag be made from recycled materials?**
HEAD (Knowledge)		• That frame structures are rigid support structures that use beam and columns • That triangulation in structures can make them stronger			• Factors effecting components in a circuit • Why it important to create prototypes (use paper) • Explain what is meant by 'streamlined'	• Generate ideas, considering the purposes for which they are designing • Identify a specification for their design

HANDS (Skills) Developing, planning and communicating ideas.		• Make labelled drawings from different views showing specific features • Communicate their ideas			• Communicate their ideas through detailed labelled drawings	• Make labelled drawings from different views showing specific features • Communicate their ideas
Working with tools, equipment, materials and components to make quality products (incfood)		• Use natural surrounding materials • Use collected recycled materials • Use various methods to assemble and join components			• Assemble components make working models	• Use sewing needles and thread • Measure and cut accurately • Join components safely and appropriately. • Use the following stitches to assemble materials • Use fasteners to ensure the bag can be closed. • Use applique to apply a design to the bag.

Evaluating processes and products		• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels			• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels	• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests • Record their evaluations using drawings with labels
HEART (Values)	Respect Honesty Empathy Collaboration Resilience Determination Excellence					

Resources	