



# DISCOVERY CURRICULUM



# DESIGN & TECHNOLOGY

## IMPLEMENTATION

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Millie and her peers were supporting each other when practicing their blanket stitch.



# IMPLEMENTATION



## Design and Technology - Implementation

### Approach – Knowledge

At Westfield Primary Academy, Design and Technology is taught across each year group in modules that enable pupils develop in creativity, independence, judgement and self-reflection. Each module aims to activate and build upon prior learning, including EYFS, to ensure better cognition and retention.

As a school we look to master practical skills relating to Design and Technology which involves developing the skills needed to make high quality products. Through this a child will design, make, evaluate and improve their creations allowing children to develop an understanding of design thinking and seeing their designs as a process. We also want children to take inspiration from design throughout history this will involves appreciating the design process that has influenced the products we use in everyday life.

#### D&T Curriculum Overview

Kapow offers full coverage of the KS1 and KS2 Design & Technology curriculum and we have categorised our content into five areas:

- Structures
- Mechanisms
- Electrical Systems
- Cooking and Nutrition
- Textiles

Aside from Electrical Systems, which is KS2 only, each of these acts as the focus for a topic within each year group:

	Cooking and Nutrition	Mechanisms	Structures	Textiles	Electrical Systems
Y1	Fruit and Vegetable Smoothie	Moving Storybook: Sliders Wheels and Axles	Windmills	Puppets	
Y2	A Balanced Diet	Moving Monsters Ferris Wheels	Baby Bear's Chair	Pouches	
Y3	Eating Seasonally	Pneumatic Toys	Castles	Cushions	Static Electricity
Y4	Adapting a Recipe	Slingshot Cars	Pavilions	Fastenings	Torches
Y5	What Could Be Healthier?	Pop-up Books	Bridges	Stuffed Toys	Electric Greetings Cards
Y6	Come Dine With Me	Automata Toys	Playgrounds	Waistcoats	Steady Hand Games

There are then four strands that run through each topic:



## Design and Technology - Implementation

### Planning

All modules have a sequenced overview outlining recommended number of sessions, key concepts, knowledge and vocabulary to be taught. Teachers use this overview to plan individual sessions approximately 45-50 minutes in length. All planning is produced on using or Discovery Planning template which incorporates cooperative learning techniques, key vocabulary, core concepts and a class profile to enable all teaching staff to effectively plan and support the needs of all pupils in the classroom.

Curriculum Map		Year 3		2019 - 2020	
Autumn 2019		Spring 2020		Summer 2020	
2/9	School selected study	9/1	<b>Geography</b> Revisit and remember UK names / sea Introduce UK study	20/4	<b>History</b> Revisit & retrieve Iron Age Introduce Rome and the Impact on Britain - Roman Empire and invasion.
9/9	<b>Computing</b> Introduce e-safety and email Kapow Y3	13/1	Unity Y3	27/4	<b>History</b> Introduce Celt / Roman resistance and battle lines
16/9	<b>Science</b> Revisit and retrieve materials Y2 Introduce rocks and fossils	20/1	<b>Computing</b> Revisit and retrieve 'What's a computer?' Introduce journey inside a computer. Kapow Y3	4/5	<b>History</b> Introduce Romanisation of Britain and decline of Roman Empire. Revisit and retrieve cause, effect and consequence of Roman Invasion
23/9	Unity Y3	27/1	<b>Science</b> Introduce Forces and magnets	11/5	<b>Design and Technology</b> Introduce construction (Colchester castle) Kapow Y3
30/9	<b>Art</b> Formal Elements of Art Shape and tone - drawing from observation Kapow Y3	3/2	<b>Languages</b> Revisit introductions Introduce adjectives of colour and size (Marissa) Kapow Y3	18/5	<b>Science</b> Revisit & retrieve Animals incl. humans Introduce Animals incl. humans Unity Y3
7/10	<b>Languages</b> Introductions in French - Puppets Kapow Y3	10/2	<b>Design and Technology</b> Introduce Y3 electrical systems (static electricity) Kapow Y3	25/5	Half term
14/10	<b>History</b> Introduce Stone Age Unity Y3	17/2	Half Term	1/6	<b>Languages</b> Revisit playgrounds, adjectives Introduce French science and animal vocab Kapow Y3
21/10	Half term	24/2	<b>Science</b> Continue Forces and magnets Unity Y3	8/6	<b>Design Technology</b> Revisit and retrieve healthy diet Y2 Introduce Eating seasonally Kapow Y3
28/10	<b>Art</b> Introduce Prehistoric art	2/3	<b>Design Technology</b> Revisit and retrieve mechanisms	15/6	<b>Science</b> Revisit and retrieve Plants

Example of Year 3 Curriculum Map.

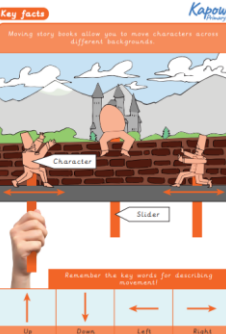
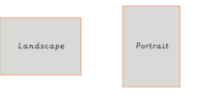
<p><b>Lesson 1: Electrical products</b></p> <p>Pupils explore the difference between 'electrical' and 'electronic' and revisit how to create a simple circuit</p> <p><a href="#">View</a></p>	<p><b>Lesson 2: Evaluating torches</b></p> <p>Pupils evaluate a range of different torches and identify the features of a torch: housing, reflector, circuit and switch.</p> <p><a href="#">View</a></p>
<p><b>Lesson 3: Torch design</b></p> <p>Pupils create a torch design, building on their understanding from and incorporating features they have identified in previous lessons.</p> <p><a href="#">View</a></p>	<p><b>Lesson 4: Torch assembly</b></p> <p>The children build the circuit and housing for their torches, closely following their designs from the previous lesson.</p> <p><a href="#">View</a></p>

Example of a Year 4 lesson structure.



## Knowledge Organisers

Accompanying each module is a Knowledge Organiser which contains key vocabulary, information and concepts which all pupils are expected to understand and retain. Knowledge notes are the elaboration and detail to help pupils acquire the content of each module. They support vocabulary and concept acquisition through a well-structured sequence that is cumulative. Each Knowledge Note contains key vocabulary and key facts for the focus module.

Mechanisms - Making a moving story book		Key facts
<b>Assemble</b>	To fix all parts together.	 <p>Moving story books allow you to move characters across different backgrounds.</p> <p>Remember the key words for describing movement!</p> <p>Up Down Left Right</p>
<b>Design</b>	To make, draw or write plans for something.	
<b>Design, create, evaluate</b>	A set of notes to help you with your ideas and test the success of them.	
<b>Evaluation</b>	When you look at the good and bad points about something, then think about how you could improve it.	
<b>Mechanism</b>	A system of parts working together.	
<b>Model</b>	A practice version, often on a smaller scale, that lets you test out your idea and see how it will look and work.	
<b>Sliders</b>	Something that can move from side to side or up and down.	
<b>Shapes</b>	Shapes which you can draw around.	
<b>Target</b>	A person or particular group of people at whom a product is aimed.	
<b>Template</b>	A stencil which you use to help you draw or shape more easily on to different materials.	
<b>Test</b>	To find out whether something works as it should.	
<b>Page orientation. Which way around is your page?</b>		
		

Year 1 Knowledge Organiser

Food - Come dine with me		Key facts
<b>Accompaniment</b>	Something which goes well together with other foods and drinks.	 <p>The five different food groups are:</p> <ol style="list-style-type: none"> <li>Carbohydrates</li> <li>Fruits and vegetables</li> <li>Protein</li> <li>Dairy</li> <li>Fats</li> </ol> <p>Remember to eat with your hands after handling raw meat!</p>
<b>Cookbook</b>	A book which contains recipes to make various dishes or foods.	
<b>Cross-contamination</b>	Cross-contamination is how bacteria can spread. It happens when liquid from raw meats or bones from unclean objects touch, spread or land on food.	
<b>Equipment</b>	Tools and objects which are needed to complete a task.	
<b>Flavour</b>	How food or drink tastes. (e.g. sour, sweet, bitter, salty)	
<b>Inexpensive verb</b>	Cost known as being worth because they tell you what to do. The not think of the beginning of a command or action. (e.g. Bake, grill, add, heat)	
<b>Ingredients</b>	Items that make up a mixture e.g. foods that make a recipe.	
<b>Method</b>	A way of carrying out a certain process, following a list of instructions.	
<b>Nationality</b>	Belonging to a certain group of people in a particular country.	
<b>Preparation</b>	The process of getting ready to make something.	
<b>Processed</b>	When foods are served through multiple processes in a factory to change or preserve it or to keep for longer.	
<b>Recipe</b>	To read and follow instructions. e.g. ones.	
<b>Recipe instructions</b>	A set of instructions for making or preparing a food item or dish.	
<b>Recipe instructions</b>	A particular group or person, who a product is aimed at.	
<b>Unit of measurement</b>	The unit which you use to measure a quantity. (e.g. litres)	
<b>Did you know?</b>		
<p>Wheat produces about 1/3 of all pineapples in the world.</p> <p>Many vegetables have originated in the Americas.</p>		

Year 6 Knowledge Organiser

Textiles - Cushions		Key facts
<b>Accurate</b>	Mean, correct shape, size and pattern with no mistakes.	 <p>Remember to tie a knot in your thread so that the stitches stay secure and do not come undone!</p>
<b>Applique</b>	Applique is a type of textile work where small pieces of cloth are sewn or stuck in a pattern onto a larger piece.	
<b>Cross-stitch</b>	A two-stitch style of sewing which forms a cross pattern.	
<b>Cushion</b>	A multiple shape of fabric, used to make sitting more comfortable.	
<b>Decorate</b>	To add details to a design to improve its appearance.	
<b>Detail</b>	The small features of an object.	
<b>Fabric</b>	A natural or man-made woven or knitted material that is made from plant fibres, animal fur or synthetic material.	
<b>Patch</b>	A piece of material sewn near the top of a larger piece, sometimes just for decoration and sometimes to cover a hole in the underneath material.	
<b>Running-stitch</b>	A simple style of sewing in a straight line with no backstitching.	
<b>Seam</b>	Where two edges of cloth are joined or sewn together.	
<b>Stencil</b>	A shape that you can draw around.	
<b>Stuffing</b>	Soft material used to fill cushions and stuffed toys.	
<b>Target audience</b>	A person or particular group of people at whom a product is aimed.	
<b>Beats, buttons or objects can be used to decorate your cushion.</b>		

Year 3 Knowledge Organiser



In Reception the children used knives to cut their bananas into pieces. During this task the children were able talking about how to safely slice the banana and about healthy diets.



Design and Technology  
Vocabulary



Year 2

Food: A balanced diet  
alternative, diet, balanced diet, evaluation, expensive, healthy,  
ingredients, nutrients, packaging, refrigerator, sugar, substitute

Mechanisms: Making a moving monster  
evaluation, input, lever, linear motion, linkage, mechanical,  
mechanism, motion, oscillating motion, output, pivot, reciprocating  
motion, rotary motion, survey

Structures: Baby Bear's chair  
function, man-made, mould, natural, stable, stiff, strong, structure,  
test, weak

Textiles: Pouches  
accurate, fabric, knot, pouch, running-stitch, sew, shape, stencil,  
template, thimble

Mechanisms: Fairground wheel  
axle, decorate, evaluation, ferris wheel, mechanism, stable, strong,  
test, waterproof, weak

## Vocabulary

Vocabulary forms a key part of our wider curriculum. Subject specific Tier 2 and Tier 3 words are incorporated in each module and pupils are encouraged to develop their own 'Vital Vocabulary' lists along with dual coding to expand their science vocabulary repertoire.

## Oracy

When discussing their findings or presenting information, pupils are encouraged to speak using full sentences and incorporating the key scientific vocabulary. Pupils are supported to develop their oracy skills across the school with the use of 'Ask me about...' stickers, where adults and children can ask each other about aspects of their learning.





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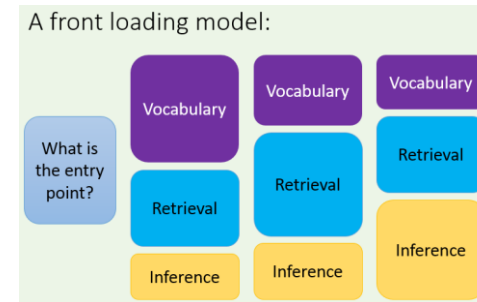
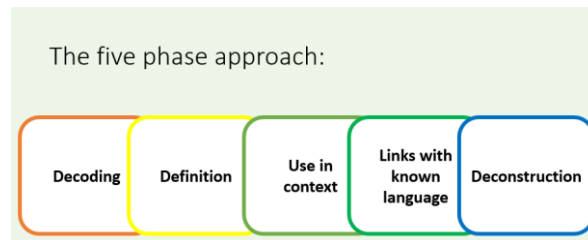
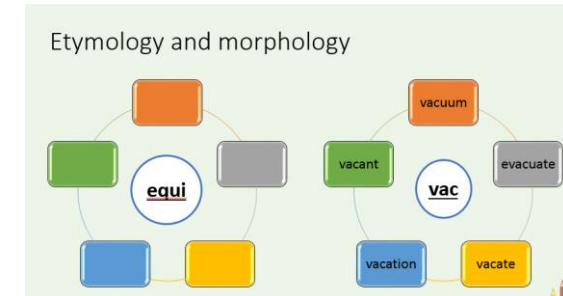
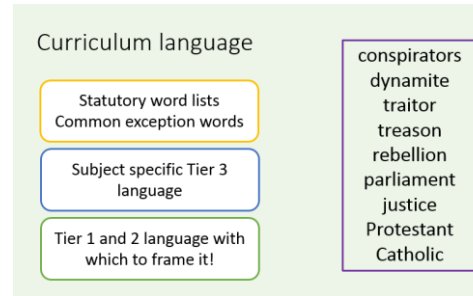
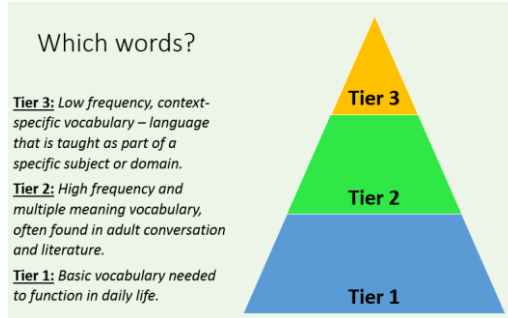


Resources

## Continuous Professional Development

All staff have undergone CPD in Cognitive Load Theory, Spaced Practice Retrieval Theory and planning the wider curriculum which has supported the development of a modular wider curriculum.

In addition, staff have been trained in the Theory of Reading which emphasises the importance of teaching reading across all subjects and how to teach vocabulary – including etymology and morphology.



Teachers are encouraged to develop their subject knowledge by accessing resources in school and online.

Further training is scheduled to support teachers to plan and facilitate