



# Design and Technology Curriculum

Learning as a family in Jesus, through **Love, Hope and Forgiveness**

*'with God all things are possible.'* Matthew 19:26



### DT to order/look at:

Food Technology	Sewing	Construction	Mechanics	Electrics
Stove tops Ovens with grill Blenders Graters/peelers Bowls/cups Measuring jugs Weighing Scales Wooden Spoons Child friendly knives/cutting equipment Chopping Boards Kebab Sticks	Fabric (puppets) Fabric (Cross stitch) Needles (large) Thread (range of colours) Glue Eyes	Tents: Waterproof and non-waterproof fabrics Sticks for poles String – guy ropes  Puppets:	Coggs? Split pins Pulley systems	Batteries Bulbs Wires Clips Switches Circuit boards?



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## Overview

Mechanisms			Textiles		Structures		Electronic Systems		Cooking & Nutrition		
AGE PHASE	YEAR Group	AUTUMN				SPRING			SUMMER		
Whole School enrichment											
EYFS	R	Elmer Cartons	<b>EAD – Creating with Materials</b> <b>Cooking &amp; Nutrition</b>  Owl on Toast  Cooking & Nutrition  Owl on Toast  Use fruit to create an owl on toast then eat –  Design the pattern  Make – cutting skills   <b>EAD - Creating with materials, care and precision. Think and discuss what they want to make. Reflect on what they have made.</b>  Links to healthy eating	EAD – Fruit kebabs – link to Handa's Surprise	EAD – Creating with materials – Design a bed and a chair for the bears	<b>EAD - Mechanisms</b>  <b>People who help us</b>  <b>Make an emergency vehicle</b>	<b>EAD - Bug Hotels</b>				




KS1	1		Structures. Design a playground structure which demonstrates how structures can be made to twist, turn, swing and slide			Textiles – Cutting, shaping – animal faces  -Links to maths – 2D shapes	Cooking and nutrition – Seasonal icecreams  - Links to maths proportions - Links to health
	2	DT – Structures – Make own tents – Links to local Scout group, borrow tents. Teepee-dome, Bell, flat sheet (Science links – waterproof. Engineering links)			Mechanisms – Fire Engines Models (wheels & axels)	Cooking & Nutrition  Eat well plate  DT- Cooking & Nutrition- healthy and varied diet to prepare dishes. Eat well plate.  Make tortillas, salsa	Textiles  Sea creature hand puppet - stitching, gluing and joining.  For reading buddies
	3	DT – Visit and recreate a mini version of the funicular cliff railway at Fisherman's walk – understanding and using mechanical systems in their product (gears, pulleys, cams)  DT – Demonstrate cams links to use in trains and cars  DT - Key events and individuals helped shape the world Brunel – Designed	DT - Cooking & Nutrition  Savoury cookery. Understand a balanced diet.  Prepare and cook a variety of healthy balanced dishes	DT – Structures – Aqueducts and Viaducts – build a functional weight bearing structure  <i>Links to Romans (key event in time that has shaped the world)</i>			



			bridge Clifton suspension bridge	- Design and make pizza – Pizza Express Trip			
4	<p><b>Cooking &amp; Nutrition</b></p> <p>Make soup with seasonal vegetables (how are ingredients are grown, reared, caught and processed objective) - boiling</p> <p>Design</p> <p>Make</p> <p>Evaluate</p>				<p>DT – Criss-cross stitching – Hooke Court</p> <p>DT - Use electrical systems in their products – making a torch – exploded diagrams/prototypes</p> <p><u>One lesson on discoveries:</u></p> <p>Due to these key figures, these things were discovered and have evolved. Discovery through to using it to help us with climate change.</p> <p>(Refer to: Benjamin Franklin for discovering electricity, his experiments helped establish the connection between lightning and electricity)</p> <p>(Refer to: Thomas Edison)</p> <p>(Refer to: Faraday - Key Event – How time and culture have changed cars - Timeline of cars – what has shaped cars - Links to Electric cars and the future</p>		



						of electric vehicles - <a href="https://musclecar.uk/history/a-short-history-of-automotive-design/">https://musclecar.uk/history/a-short-history-of-automotive-design/</a> )	
UKS2	5	<p><b>DT - Use mechanical systems in products (levers and linkage), puppets of a mythical Greek story, moving weapons and body parts</b></p> <p><b>Refer to: Key events: Puppetry is a very ancient form of theatre which was first recorded in the 5th century BC in Ancient</b></p>  <p><b>Greece</b></p>	<p>DT – Computer aided design and understand how design individuals have shaped the world – 3D modelling</p> <p>(Year 2 - History – Understanding the life of a historical figure (George Cadbury) – pre-learning – Link to packaging research)</p> <p>Design/make and evaluate own products/existing products – computer aided design</p> <p>Annotated sketches - Cross sectionals, prototypes</p> <p>3D modelling of packaging</p>		DT/Computing – Unit 5.5 Game Creator- Make, Do and Evaluate.		



	6	<p><b>DT – Design and make own city</b></p> <p><b>Deconstruct something to see how the tracks work</b></p> <ul style="list-style-type: none"> <li>- Construct own city</li> <li>- Make opening mouth</li> <li>- Make pinchers that close and a winch to pull pinchers back</li> <li>- Wheels and axels</li> <li>- Syringes or balloon to open the mouths</li> <li>- Cams, pulleys, levers</li> </ul>	<p><b>Textiles - Make do and mend – sewing buttons onto felt and repairing a hole</b></p>				<p><b>DT - Design/make/evaluate – 'Thank you' meal – a variety of cooking techniques, cutting, baking, grilling</b></p> <p><b>Stir fry</b></p>
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## Design and Technology skills

	EYFS	KS1	KS2
Design	<ul style="list-style-type: none"> <li>• choose the resources they need for their chosen activities and say when they do or don't need help</li> </ul>	<ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• generate, develop, model and communicate their ideas through</li> </ul>





		and, where appropriate, information and communication technology	discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
Make	<ul style="list-style-type: none"> <li>• know about similarities and differences in relation to places, objects, materials and living things</li> <li>• make observations of animals and plants</li> <li>• explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>• select and use technology for particular purposes</li> </ul>	<ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul>	<ul style="list-style-type: none"> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• 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</li> </ul>
Evaluate	<ul style="list-style-type: none"> <li>• represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories</li> </ul>	<ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• understand how key events and individuals in design and technology have helped shape the world</li> </ul>




<p>Technical Knowledge</p>	<ul style="list-style-type: none"> <li>• talk about the features of their own immediate environment and how environments might vary from one another</li> <li>• explain why some things occur and talk about changes</li> </ul>	<ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>• apply their understanding of computing to program, monitor and control their products.</li> </ul>
<p>Cooking and nutrition</p>	<ul style="list-style-type: none"> <li>• Know how to cook and apply the principles of nutrition and healthy eating.</li> </ul>	<ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• understand where food comes from.</li> </ul>	<ul style="list-style-type: none"> <li>• understand and apply the principles of a healthy and varied diet</li> <li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>



# EYFS



EYFS - Year R – Term 1 (ELG: Creating with Materials – All About Me)

EYFS - Year R – Term 1 (ELG: Creating with Materials – All About Me)		
EYFS ELG Goals	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"><li>- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li><li>- Share their creations, explaining the process they have used.</li></ul>	<p>Designing using different techniques to join materials</p> 	<p>join, push, flatten, mould</p>
Pre-school knowledge		Future Learning
<ul style="list-style-type: none"><li>• Explore different materials freely, to develop their ideas about how to use them and what to make.</li><li>• Develop their own ideas and then decide which materials to use to express them.</li><li>• Join different materials and explore different textures.</li></ul>		<p>Structures – cutting and joining</p>
Continuous Provision		
Malleable Play		
<p><b>Design and create my family out of different materials including play doh.</b> Explore a variety of materials. <i>What materials will you use and why?</i></p> <p><b>Design and create an elephant using a milk carton</b></p>		



Explore a variety of materials. *What materials will you use and why?*

### Construction

#### Design an obstacle course.


Explore a variety of materials. *What materials will you use and why?*

### Small World

#### Design a wildlife park.

Explore a variety of materials. *Which materials will you use and why?*

## EYFS - Year R – Term 2 ( ELG: Creating with Materials – 'Oh help! Oh no, it's the Gruffalo')

EYFS ELG Goals	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>Share their creations, explaining the process they have used.</li> </ul>	<p>Features of a den (sometimes underground, warm, safe)</p> <p>Healthy eating – fruit is good for you in moderation</p>	<p>Build, safe, warm, shelter, cover.</p>
Pre School Knowledge		Future Learning
<ul style="list-style-type: none"> <li>Explore different materials freely, to develop their ideas about how to use them and what to make.</li> <li>Develop their own ideas and then decide which materials to use to express them.</li> <li>Join different materials and explore different textures.</li> </ul>		<p>Building shelters to protect us from the environment – joining materials</p>

### Continuous Provision & Key Questions



**Outdoors**

**Create mud pie recipes**

explore a variety of materials, tools and techniques – *Can you share your finished recipes?*

**Malleable Play**

**Create a Gruffalo and a crazy creature**

explore a variety of materials, tools and techniques – *Can you share your design?*

**Construction**

**Build a cave for the Gruffalo -**

explore a variety of materials, tools and techniques – *Can you share your design?*

**Small World**

**Building a den for a woodland animal –**

explore a variety of materials, tools and techniques – *Can you share your design?*

**EYFS - Year R – Term 3 (ELG: Creating using materials – All around the World)**

<b>EYFS ELG Goals</b>	<b>Sticky Knowledge</b>	<b>Vocabulary</b>
<ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>Share their creations, explaining the process they have used.</li> </ul>	<p>Fruit is good for us</p> <p>I can make a repeated pattern using fruit</p> <p>I can use equipment safely to cut up fruit</p> <p>Link to Handa's Surprise book.</p>	<p>Design, plan, choose, change</p>
<b>Pre-school knowledge</b>		<b>Future Learning</b>



- Explore different materials freely, to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.



Cooking and nutrition

**Continuous Provision****Food****Design a fruit kebab –**

Share creation and pattern, explaining the process used. *What fruit did you choose and why? What would you change next time?*

**Can add more**

### EYFS - Year R – Term 4 (ELG: Creating Using Materials - Beware of the Bears)

EYFS ELG Goals	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>• Share their creations, explaining the process they have used.</li> </ul>	Understanding why strong materials are good to use when making something to sit on or lay on.	Stable, hard, comfortable, materials, wooden.
<b>Pre-school knowledge</b>		<b>Future Learning</b>



- Explore different materials freely, to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.



Construction joining and cutting materials

### Continuous Provision

#### Construction

#### Design a chair and a bed for the bears -

explore a variety of materials, tools and techniques – *Can you share your design?*

#### Split pin bears-

Join different material.

### EYFS - Year R – Yerm 5 (ELG: Creating with Materials – People Who Help Us)

EYFS ELG Goals	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>• Share their creations, explaining the process they have used.</li> </ul>	<p>Emergency vehicles are made from materials such as metal, rubber etc.</p> <p>I can join different materials using hinges, flaps, staples, tape, fabric.</p> <p>I can fix together materials using glue, tape, split pins, treasury tags.</p> <p>I can decorate my vehicles to reflect the type of vehicles.</p>	<p>Metal, tyres, rubber, shapes</p>
Pre-school knowledge		Future Learning
<ul style="list-style-type: none"> <li>• Explore different materials freely, to develop their ideas about how to use them and what to make.</li> </ul>		<p>Design and construction</p>





- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.

### Continuous Provision

#### Construction

#### Design and create an emergency vehicle

explore a variety of materials, tools and techniques –

*Can you share your design?*

### EYFS - Year R - ELG: Creating with Materials – Term 6 Brilliant Bugs and Beasts

EYFS ELG Goals	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;</li> <li>• Share their creations, explaining the process they have used.</li> </ul>	I know the best materials to use when making a bug hotel	Natural, wood, materials
Pre-school knowledge		Future Learning



- Explore different materials freely, to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.



**Continuous Provision**

**Outdoors**

**Make a bug hotel**


Explore a variety of materials, tools and techniques – *Can you share your design?*



# Year 1



Year 1 – Term 2 - A Walk in the Park – Playground Structures

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To design a purposeful and functional product based on design criteria.</li> <li>To select from and use a range of tools and equipment to perform practical tasks.</li> <li>To evaluate their ideas and products against design criteria</li> </ul>	<ul style="list-style-type: none"> <li>That playground equipment is designed to move in different ways e.g. swing, twist, slide, turn</li> <li>That scissors can be used to cut thin and thick paper and card</li> <li>That materials can be joined using glue, tape, split pins and materials according to the flexibility required</li> <li>Simple structures can be made stronger, stiffer and more stable</li> <li>Finishing techniques to improve the appearance of a product</li> </ul>	<p>Cut, fold, join, fix, structure, thinner, swing, twist, pull, push, slide, thicker, corner, point, straight, curve, stable, strong, design, make, evaluate</p>	
		<p><b>Outcome</b></p> <p>Make a playground structure for a park or adventure area</p>	<p><b>Key events/ individuals/ texts</b></p> 
Prior Learning	Key Question(s)	Future Learning	
<p><b>EYFS</b></p> <p>Children have:</p> <ul style="list-style-type: none"> <li>-joined materials</li> <li>-constructed using materials</li> <li>-made vehicles</li> </ul>	<p>What makes good play equipment? Why?</p> <p>What are the best materials to use?</p> <p>What makes the strongest/most flexible join?</p>	<p><b>Year 2</b></p> <p>Make own tents (waterproofing, wind proofing)</p>	



Design	Design a purposeful, functioning product based on design criteria								
Make	Select from a range of tools to and equipment to make cut, shape, join and finish Select construction materials and textiles according to their characteristics								
Evaluate	Evaluate their ideas and products against design criteria								
Technical knowledge	Build structures and explore how they can be made stronger, stiffer and more stable								
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment	

## KS1 - Year 1 – Term 5 Animal collage


National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To communicate ideas through talking and drawing</li> <li>To use equipment to perform practical tasks (cutting)</li> <li>To design an appealing product based on simple design criteria</li> <li>Select from and use textiles according to their characteristics</li> <li>Explore and evaluate their ideas and final products against original design criteria</li> </ul>	<ul style="list-style-type: none"> <li>I know the name of different fabrics</li> <li>I know how to join fabrics together</li> <li>I know how to make my animal face by carefully choosing my fabric and decorations</li> <li>I know how to stop fabric fraying</li> <li>I know how to make cutting fabric easier</li> </ul>	Outcomes	Key events/ individuals/ texts
		To make a fabric animal face to add to a collage	
Prior Learning	Key Question(s)	Future Learning	
In EYFS, children should:	<ul style="list-style-type: none"> <li>How many fabrics can you name?</li> </ul>	Year 2,	



<ul style="list-style-type: none"><li>Have explored different textures as part of the ELG Expressive Arts and Design. and be able to define them.</li><li>Provide a range of materials and be taught to use them with care and precision</li></ul>				<ul style="list-style-type: none"><li>How can you join your fabric together?</li><li>Which fabric will make your animal look the best?</li><li>How can you stop your collage from fraying?</li></ul>			Design, make and evaluate a sea creature hand puppet	
Design	Design appealing products Generate and model ideas through drawings, templates and mock-ups							
Make	Use a range of tools and equipment to cut, shape, join, finish							
Evaluate	Evaluate their products against the design criteria							
Technical knowledge	Make a product and explore how it can be made more robust							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment

KS1 – Year 1 – Term 6 (I do like to be beside the seaside Making seasonal fruity ice creams)				
National Curriculum Objective	Sticky Knowledge		Vocabulary	
<ul style="list-style-type: none"> <li>To design purposeful and appealing products for themselves and others</li> <li>To generate, develop and communicate their ideas through talking and drawing</li> <li>To select from an and use a wide range of ingredients</li> <li>To understand where food comes from.</li> <li>To know that fruit is seasonal</li> </ul>	<ul style="list-style-type: none"> <li>I know the difference between a fruit and a vegetable.</li> <li>I know that a fruit is usually sweet to taste.</li> <li>I know the purpose of different tools in the kitchen such as: a knife, chopping board, blender and a peeler</li> <li>I can evaluate the taste of different icecreams with vocabulary: hard, crunchy, liquid, solid, soft, mushy, bitter, sour, sweet, tangy, juicy</li> <li>To know that proportion is a part of a whole</li> <li>I know that strawberries, raspberries, apples, oranges, grow in the summer</li> </ul>		Knife, blender, fruit, vegetable, purpose <b>To evaluate:</b> hard, crunchy, liquid, solid, soft, mushy, bitter, sour, sweet, tangy, juicy	
			Outcome	Key events/ individuals/ texts
			Ice cream recipe	



<ul style="list-style-type: none"><li>To evaluate their ideas and products against design criteria</li><li>To use the basic principles of a healthy and varied diet to prepare dishes</li><li>To explore and evaluate a range of existing products</li></ul>	<ul style="list-style-type: none"><li>I know that fruits such as kiwis, oranges, grapes, bananas are not grown in Britain and need to be imported</li></ul>							
Prior Learning	Key Question(s)	Future Learning						
In <b>EYFS</b> Children should: Make repeated fruit patterns Cut up their own fruit using knives safely Sharing their creations and explaining the process they have used. Managing self ELG- children will have an understanding of what is healthy.	<ul style="list-style-type: none"><li>What makes a smoothie healthy?</li><li>Why are fruits healthy?</li><li>What is a proportion and why does it matter in a smoothie?</li><li>What fruit is in season?</li></ul>	<b>Year 4 –</b> Children to make soup looking at the seasonality choices. Farm to fork – how far their food has travelled before ending up on the plate.						
Design	Design appealing products for themselves.							
Make	Use a range of tools to perform practical tasks							
Evaluate	Evaluate a range of existing products Evaluate their ideas and products against design criteria							
Technical knowledge	n/a							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment





# Year 2





KS1 – Year 2 – Term 1 (Scouting Around – Tent Making)




National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To evaluate a range of existing tents.</li> <li>To design a purposeful and functional tent.</li> <li>To use appropriate weather proof materials to construct the tent.</li> <li>To use simple tools to assemble and prepare the tent.</li> <li>To evaluate their tents against their designs and existing tents.</li> <li>To apply knowledge about how to strengthen the tent structure.</li> </ul>	<ul style="list-style-type: none"> <li>To know how to identify materials that are waterproof, windproof (link to science).</li> <li>To know that there are a range different tent designs and materials used to construct them.</li> <li>(borrow Tepee/dome/flat sheet tents to evaluate).</li> <li>To know different methods of securing tents – poles, pegs, guy ropes.</li> </ul>	Water resistant materials, fabrics, weather proof, structure, strength, poles, pegs, guy ropes.	
		Outcome	Key Individuals/Media/Texts
		To create a waterproof tent  	Lord Baden Powel – Scout Movement   <a href="https://youtu.be/JYRMGJCS1w4">https://youtu.be/JYRMGJCS1w4</a> Camping - 3 Tarp Tent Setups, so easy even a kid can do it!  <a href="https://www.facebook.com/scoutassociation/videos/skills-for-life-bear-grylls/10155403077553021/">https://www.facebook.com/scoutassociation/videos/skills-for-life-bear-grylls/10155403077553021/</a> Bear Grylls Scouting Video



		<ul style="list-style-type: none"><li>• To be able to select appropriate materials to construct their tent.</li><li>• To use a range of methods to construct their tents.</li><li>• To know that triangles are a strong shape.</li></ul>						
Prior Learning		Key Question(s)	Future Learning					
Year 1 Building playground structures		What are the most appropriate materials to use when constructing tents? Why? What are the most effective ways to join poles and attach the fabric to the tent? What is the best design for a tent?	Year 4 Design and make an aqueduct Year 6 Design and make own city.					
Design	Design a purposeful, functioning product based on design criteria							
Make	Select from a range of tools to and equipment to make cut, shape, join and finish Select construction materials and textiles according to their characteristics							
Evaluate	Evaluate their ideas and products against design criteria							
Technical knowledge	Build structures and explore how they can be made stronger, stiffer and more stable							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



## KS1- Year 2 – Term 4 (Fire, Fire! Mechanisms – Fire Engine Models)

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<b>DESIGN</b> <ul style="list-style-type: none"> <li>Design purposeful, functional products for themselves and other users based on design criteria</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <b>MAKE</b> <ul style="list-style-type: none"> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <b>EVALUATE</b> <ul style="list-style-type: none"> <li>Evaluate existing products and their own ideas and products against design criteria</li> </ul> <b>TECHNICAL KNOWLEDGE</b> <ul style="list-style-type: none"> <li>Build structures, exploring how they can be made stronger, stiffer and more stable</li> </ul>	 <ul style="list-style-type: none"> <li>The pole is the axle</li> <li>The circular objects are called wheels</li> <li>Wheels move at the same time and speed because they are attached to the axle.</li> <li>Cars and vans have axels</li> <li>The chassis is the frame that is built on the axels.</li> </ul>	Structure, wheel, axle, washer, chassis.	
		<b>Outcome</b> To build a moving fire engine including wheels and axles ensuring that the structure is stable 	<b>Key events or individuals</b>  Richard Newsham - Early prototypes of the fire engine were designed in England to move water from one place to another. In 1721, Richard Newsham, an English inventor, filed 2 patents that would allow him to create/control the market of fire engines during the mid-1700s in England.





<ul style="list-style-type: none"> <li>Explore and use mechanisms [wheels and axles], in their products.</li> </ul>			
Prior Learning		Key Question(s)	Future Learning
<b>Year 1</b> Children will be designing a piece of play equipment for a playground looking at how to make structures stronger, stiffer and more stable.		What makes a good wheel? What make a good axel? How are wheels and axels used in real life? How do we know the wheels are both attached correctly to the axel? What is a chassis?	<b>Year 3</b> Cliff Top Lift  <b>Year 6</b> Mortal Engines
When designing and making, pupils should be taught to...			
Design	Design functional products based on design criteria		
Make	Select from and use a range of tools and equipment to cut, shape, join Select from and use materials according to their characteristics		
Evaluate	Evaluate their ideas and products against design criteria		
Technical knowledge	Build structures exploring how they can be made stronger, stiffer and more stable Use mechanisms i.e. wheels and axles		
Context	Home	school	leisure
		culture	enterprise
		Industry	health
			environment

## KS1- Year 2 – Term 5 – (Mexico – Eat well! - Making Salsa)

National Curriculum Objective	Sticky Knowledge	Vocabulary
To know what makes a healthy and varied diet.	<ul style="list-style-type: none"> <li>To know that different countries have different foods.</li> </ul>	Healthy, balanced, Mexican, meat (protein), vegetables, dairy, carbohydrates, fats/oils, sugar, spicy, tomatoes, onions, coriander, chilli.
		<b>Outcome</b>
		<b>Key Cultural Learning</b>



<p>To prepare a healthy Mexican dish.</p> <p>To understand that some foods originate from different countries.</p> <p>To choose and use tools safely, to chop and stir.</p> <p>To use simple drawings and labels to record ideas.</p>	<ul style="list-style-type: none"> <li>To know that Mexico has varies traditional dishes – tortillas, churros, tacos etc.</li> <li>To know what makes a healthy and varied diet.</li> <li>To know the ingredients needed to make a salsa.</li> <li>To be able to design and make a simple salsa recipe.</li> <li>To know how to choose and safely use appropriate tools to chop and stir.</li> </ul>	<p>Design a recipe and prepare a Mexican tortilla and Salsa</p> 	<p>To taste/evaluate some Mexican dishes.</p> <p>To make a chart of contents to evaluate how healthy and balanced the meals are.</p> 
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Prior Learning	Key Question(s)	Future Learning
<p><b>Year R</b></p> <p>Fruit kebabs</p> <p><b>Year 1</b></p> <p>Making fruity ice creams</p>	<p>What makes a balanced and healthy diet?</p> <p>What are the main foods found in Mexico? Have you ever tried them?</p> <p>What is healthy about them?</p> <p>What could you add to your tortilla to make it healthy?</p>	<p><b>Year 3</b></p> <p>Design and make a pizza</p> <p><b>Year 4</b></p> <p>Making seasonal soup</p> <p><b>Year 6</b></p> <p>Design and make a 'Thank you' meal</p>

Design	Design appealing products for themselves.
Make	Use a range of tools to perform practical tasks
Evaluate	Evaluate a range of existing products



	Evaluate their ideas and products against design criteria							
Technical knowledge	n/a							
Context	Home	school	leisure	culture	enterprise	industry	Health	environment
KS1- Year 2 – Term 6 – (Sea vs Land – Making Sea Creature Hand Puppets)								
National Curriculum Objective		Sticky Knowledge			Vocabulary			
<p>To design an appealing hand puppet based on a sea creature for themselves and others.</p> <p>To generate, develop, model and communicate their ideas through talking, drawing, templates and mock-ups.</p> <p>To select from and use a wide range of materials and components, including construction materials, textiles, according to their characteristics.</p> <p>To evaluate their ideas and products against their own design criteria.</p> <p>To select from and use a range of tools and equipment to perform practical tasks e.g. cutting, sewing, pinning.</p>		<p>To know how to design a template to use to make a sea creature hand puppet.</p> <p>To know how to use the template to create the puppet.</p> <p>To know how to select appropriate materials and resources to create the puppet and ensure that it resembles the sea creature.</p> <p>To know how to use appropriate tools (scissors, pins, needles, thread) and joining techniques to assemble the puppet (stitching, gluing).</p>			Colours, fabric, shape, stitching, gluing, joining, cutting, templates, attractive design.			
					Outcome			
					<p>Make a hand puppet, based on a sea creature. Read a story with reading buddy, using the hand puppet.</p> <div data-bbox="1637 769 1919 1126" data-label="Image"> </div>			
Prior Learning		Key Question(s)			Future Learning			
<b>Year 1</b> Animal face collages		How are you going to design your puppet to look like your sea creature?			<b>Year 4</b>			



				How big does your template need to be to fit your hand inside? What materials do you need to make your sock puppet look like your sea creature? What tools and materials do you need to assemble your sea creature?		Cross stitch as part of their Victorian project <b>Year 6</b> Make do and mend - sewing		
Design	Design appealing products Generate and model ideas through drawings, templates and mock-ups							
Make	Use a range of tools and equipment to cut, shape, join, finish							
Evaluate	Evaluate their products against the design criteria							
Technical knowledge	Make a product and explore how it can be made more robust							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment




# Year 3






## KS2 - Year 3 – Term 2 - (Railway Revolution – Making a Funicular Railway)

National Curriculum Objective	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> <li>To research and develop design criteria to inform the design of a functional Funicular Railway.</li> <li>To generate, develop and communicate ideas through discussion and diagrams and prototypes.</li> <li>Select appropriate construction materials and components to enable it to function.</li> <li>Investigate the Funicular Railway at Southbourne.</li> <li>Understand how key events in design and technology have impacted the world (invention of the railway).</li> <li>To be able to strengthen and reinforce structures within the railway,</li> <li>To understand and use mechanical systems in their Funicular Railway e.g., gears, pulleys).</li> </ul>	<ul style="list-style-type: none"> <li>To know what a Funicular Railway is and how it works.</li> <li>To know who first invented railways and the impact this has had on the world.</li> <li>To know who invented the Funicular Railway and why.</li> <li>To know how pulleys and gears work.</li> <li>To know how to use mechanical systems (gears/pulleys) in their Funicular Railways.</li> <li>To know how to strengthen/reinforce the structure of the railways because it climbs a hill.</li> <li>To select appropriate building materials for the carriages.</li> </ul>	
		<b>Outcome</b>
		<p>To design and make a Funicular Railway.</p>  <p>Key Individuals/Events/Texts</p>
		Invention of the railway.
Prior Learning	Key Question(s)	Future Learning
<p><b>Year 2</b></p> <p>The children made a model fire engine and learnt about wheels and axles.</p>	<p>What are Funicular Railways?            Why were they invented?            Have you ever seen or used one?            Why was the invention of the railway important?            What impact has it had in the world?            How do gears and pulleys work?            How can you use them in your design?</p>	<p><b>Year 5</b></p> <p>The children will use levers and linkages</p> <p><b>Year 6</b></p> <p>All of their mechanical knowledge will come together as they make their mythical cities.</p>



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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 functional properties and aesthetic qualities							
Evaluate	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 stiffen, strengthen, and reinforce more complex structures Understand and use mechanical systems in their products eg pulleys, levers, gears, cams and linkages Understand and use electrical systems in their products eg series circuits, incorporating switches, bulbs, buzzers, and motors Apply their understanding of computing to program, monitor and control their products							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment


**KS2- Year 3 – Term 3 (Food Around the World – Making Pizza)**



National Curriculum Objective	Sticky Knowledge	Vocabulary
<p>Prepare and cook a variety of predominately savoury dishes using a range of cooking techniques.</p>	<p>Different food grows at different times of the year. To know examples of certain food that grows well in different seasons To know that those seasonal foods will be cheaper in the supermarkets when they are growing a lot To know that foods out of season will be more expensive due to importing them from other places in the world.</p> <p>Links to Geography: Vegetation belts - Where does your food come from? Can you shop locally? Food miles for your dinner – basic understanding of trade links/fair trade.</p>	<p>Healthy, balanced, vegetables, ingredients</p>
		<p><b>Outcome</b></p> <p>Prepare and cook a variety of healthy balanced dishes - design and make a pizza during Pizza Express trip. Other options to consider - Local restaurant. Toby Carvery. Local secondary school.</p> 
Prior Learning	Key Question(s)	Future Learning
<p><b>Year 2</b> Children look at traditional Mexican food and using their knowledge of a healthy and varied diet, prepare dishes. Children learn about and create an 'Eat well plate'</p> <p><b>Year 1</b> Links to health</p>	<p>Which food would be good to use to cook now? Why? Why are foods called seasonal? What does that mean?</p>	<p><b>Year 4</b> Children will design, make and evaluate soup The soup will be made from seasonal vegetables (how are ingredients are grown, reared, caught and processed objective) Skill: boiling</p>



Design	Use research and develop design criteria to inform the design of an appealing products. Communicate their ideas through discussions and annotated sketches							
Make	select equipment to make the product							
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.							
Cooking and Nutrition	Understand the principles of a healthy and varied diet Prepare and cook a savoury dish Understand seasonality, know how ingredients are grown and processed							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



### KS2- Year 3 - Term 4 (Empire – Make an Aqueduct)

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>Design purposeful, functional products for other users based on design criteria</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> <li>Explore and evaluate a range of existing products</li> <li>Evaluate their ideas and products against design criteria</li> <li>Build structures, exploring how they can be made stronger, stiffer and more stable</li> </ul>	<ul style="list-style-type: none"> <li>Aqueducts use gravity to transport water</li> <li>An arch is a strong shape to use in structures because gravity keeps the shape compressed.</li> <li>Arches can have wide or short spans to help the aqueduct cross large spaces</li> <li>An arch is a stable and efficient shape</li> <li>An aqueduct allows traffic/pedestrians to pass through below easily.</li> </ul> <p>History sticky knowledge links:</p> <ul style="list-style-type: none"> <li>The Romans used the flow of clean water in daily life for public toilets, underground sewage systems, fountains and public baths.</li> <li>The Romans were not the first people to move water for their benefit or</li> </ul>	Aqueduct, arches, structures, compression, stability, traffic, Romans,	
		<p><b>Outcome</b></p> <p>To build a functional weight bearing structure (aqueduct or viaduct)</p> <p><a href="#">Example</a></p> 	<p><b>Key individual or event</b></p> <p>Romans built aqueducts and other constructions using a mixture of stone, brick and a volcanic cement known as pozzolana, that held it all together in place.</p> 




	but they built aqueducts stronger and better.							
Prior Learning		Key Question(s)			Future learning			
Year 3 Study Brunel who designed the Clifton suspension bridge.  Year 1 Children learn how to make a strong structure.		Why is an arch shape a good shape to use in construction? What force makes the water move through a viaduct? (Science links) What is stronger, an arch or horizontal beams? What force stabilises an arch?			Year 6 Design and make mythical city.			
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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 functional properties and aesthetic qualities							
Evaluate	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 stiffen, strengthen, and reinforce more complex structures Understand and use mechanical systems in their products eg pulleys, levers, gears, cams and linkages							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



# Year 4





**KS2- Year 4 – Term 1 (Survival – Making Seasonal Vegetable Soup)**

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<b>COOKING &amp; NUTRITION</b> <ul style="list-style-type: none"> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook soup using seasonal vegetables and appropriate cooking utensils and ingredients.</li> <li>understand seasonality, and know where and how a variety of ingredients are grown and processed.</li> </ul> <b>MAKE</b> <ul style="list-style-type: none"> <li>select and use appropriate tools and equipment to cut the vegetables and cook the soup.</li> <li>select and use appropriate vegetables and ingredients to make a flavour filled vegetable soup.</li> </ul> <b>EVALUATE</b> <ul style="list-style-type: none"> <li>investigate and analyse a range of existing soups</li> <li>evaluate the soup for flavour, and encourage the feedback of others to improve the recipe.</li> </ul>	<p>Which vegetables grow in the different seasons in the UK.</p> <p>How to read and follow a recipe.</p> <p>How to choose the appropriate utensils to cook the soup.</p> <p>Which chopping board should be used for vegetables.</p> <p>How to hold and carry a knife safely.</p> <p>How to chop with a knife safely.</p> <p>How to chop vegetables correctly,</p> <p>How to switch on the hob safely.</p> <p>How to brown onions.</p> <p>How to cook soup safely on the hob:</p> <ul style="list-style-type: none"> <li>– pan handle not sticking out.</li> <li>– stirring carefully so the pot does not tip.</li> </ul>	Healthy diet, variety, savoury, seasonal, balanced diet, flavour, knife, chopping board, chopping, cutting, browning, simmering, stirring, taste, smell, texture, consistency.	
		<b>Outcome</b> To make, eat and evaluate seasonal vegetable soup. 	<b>Key Individuals</b> Jamie Oliver – Super Leek and Potato Soup <a href="https://youtu.be/xlWQAwcYMX0">https://youtu.be/xlWQAwcYMX0</a>



When designing and making, pupils should be taught to...								
Design	To choose appropriate ingredients, equipment to make the soup.							
Make	To follow a recipe and use equipment safely when making the soup.							
Evaluate	To evaluate the taste, smell, consistency, texture of the soup.							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



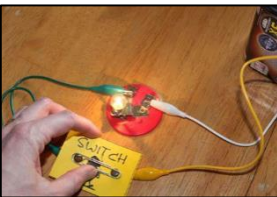


KS2- Year 4 – Term 4 (The Victorians are Coming to Town – Cross Stitching)			
National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"><li>• To generate a pattern for a cross stitch book mark that is aesthetically pleasing.</li><li>• To use the pattern to create a bookmark using cross stitch.</li><li>• To select appropriate tools and equipment to create the bookmark (scissors, fabric, needle, threads).</li><li>• To select appropriate threads to create an aesthetically pleasing bookmark which reflects the design.</li></ul>	<ul style="list-style-type: none"><li>• To know what cross stitch is and that it has been used for many years, and is still used today.</li><li>• To know why and how cross stitch was used in Victorian times (as art work, to identify household items e.g., bedding, table linen.)</li><li>• To know how to do a basic cross stitch.</li><li>• To know how to create a simple pattern for cross stitch.</li><li>• To know how to use a simple pattern to create a cross stitch.</li><li>• To know how to form an anchor knot.</li></ul>	Needle, thread, stitch, diagonal, anchor knot, fabric, scissors, embroidery.	
		Outcome	Key events
		Create an Easter bookmark using cross stitching. 	Victorian embroidery   Victorian cross stitch created to celebrate a wedding. 
Prior Learning	Key Question(s)		
<b>Year 1</b> Face Puppets – gluing <b>Year 2</b>	How do you form a cross stitch?	<b>Year 6</b> Make do and mend - sewing	



Hand puppets sea creatures -stitching and gluing			Why is the anchor knot important? What are you going to put in your pattern that reflects Easter? (Cross/Egg...) What coloured threads are you going to choose? Why?					
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 discussions, annotated sketches, pattern pieces							
Make	Select from and use a wide range of materials and textiles 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.							
Technical knowledge	Know how to use a basic cross stitch to embroider a bookmark.							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



### KS2 - Year 4 – Term 5 - Incredible Inventions (Making a Torch)

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To evaluate existing torches to develop a functional design for a torch that is fit for purpose.</li> <li>To generate a plan for the torch and communicate ideas through discussion and annotated sketches to show the different components.</li> <li>To select the appropriate components, tools and equipment to create a simple electrical system for a torch.</li> <li>To select appropriate materials to make the torch casing.</li> <li>To evaluate their ideas and torch against their own design criteria and consider the views of others to improve their work</li> <li>To understand how key events and individuals in design and technology have helped to develop the light bulb.</li> <li>To understand and use electrical systems in their products [for example, series circuits incorporating switches and bulbs]</li> </ul>	<ul style="list-style-type: none"> <li>To know that a torch needs batteries, a bulb and electrical wires to work.</li> <li>To know who developed the lightbulb and how it has developed since then.</li> <li>To know what materials are appropriate for making a torch (strong base, transparent material for cover.</li> <li>To know how to make a simple circuit with a battery, wires, switch, and bulb (science).</li> </ul>	Electricity, light bulb, light, switch, batteries, energy, wires, coil, filament, torch, circuit.	
		Outcome	Key Events/people/texts
		<p>Create a functional torch using a simple electrical circuit.</p>  	<p>Thomas Edison – Inventor of lightbulb</p>  <p>Development of the lightbulb over time.</p> <p>Who invented the lightbulb?  <a href="https://youtu.be/xW7ICXJ9p9Y">https://youtu.be/xW7ICXJ9p9Y</a>  <a href="https://youtu.be/jm3TvUwnEZI">https://youtu.be/jm3TvUwnEZI</a></p>
Prior Learning	Key Question(s)	Future Learning	
In Year 4 science they will have made a circuit including a buzzer or light bulb	How do you make a circuit?	<b>Year 6</b> Making a burglar alarm/air raid siren Y6	





	Does it matter which way round you put the battery? What makes a good switch? What material would make a good torch case? Why? Who invented the light bulb? How has it changed over the years?							
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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 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	Understand and use electrical systems in their products e.g. series circuits, incorporating switches, bulbs, buzzers, and motors Apply their understanding of computing to program, monitor and control their products							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



# Year 5



KS2- Year 5 – Term 1 Use mechanical systems in products (levers and linkage), Mechanical puppets of a mythical Greek story

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To research and develop a design for a mechanical puppet.</li> <li>To communicate their design through annotated sketches and pattern pieces.</li> <li>To select and use a range of tools and equipment to cut, measure, stick and join accurately.</li> <li>To investigate and analyse a range of mechanical puppets to inform their design.</li> <li>To evaluate their ideas and puppets against their own plans and the feedback/input from others.</li> <li>To understand and use mechanical systems.</li> </ul>	<ul style="list-style-type: none"> <li>To know how to design a puppet, using research and analysis about puppet design.</li> <li>To know how to select and accurately use, a range of tools to create the puppet (scissors, glue, split pins etc).</li> <li>To know how to use different mechanical systems to make working parts.</li> <li>To know how to evaluate their puppet against their design and</li> </ul>	Puppets, Greek mythology, moving parts, weapons, levers, pulleys, linkages, mechanisms.	
		Outcome	Key events or individuals/Media
		Create a puppet for a mythical Greek story, using moving weapons and body parts.  	<a href="https://youtu.be/NJNPmft9Hc0">https://youtu.be/NJNPmft9Hc0</a> Puppets – Story Telling (Sound of Music)  <a href="#">Links and levers</a>  



			the ideas and input of others.					
Prior Learning			Key Question(s)		Future Learning			
Year 3 Children made a funicular railway and used different mechanical systems to make them working models			What are the best materials to make the puppets? What mechanisms can you use to make them move?		Year 6 Children will make their mythical cities using skills learnt in this unit			
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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 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 stiffen, strengthen, and reinforce more complex structures Understand and use mechanical systems in their products e.g. pulleys, levers and linkages							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment





KS2 – Year 5 – Term 2 - Young Enterprise (3D Modelling of Packages)

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<p>– Computer aided design and understand how design individuals in design have shaped the world – 3D modelling of packages. Cross sectionals, prototype</p>	<p>DT – Computer aided design and understand how design individuals in design have shaped the world – 3D modelling</p> <p>Design/make and evaluate own products/existing products</p> <p>Annotated sketches - Cross sectionals, prototypes</p> <p>3D modelling of packaging</p>	Structure,	
		Outcome	Key events or individuals
Prior Learning	Key Question(s)	Future Learning	
This will be the first time children have used CAD		Children will not be exposed to these skills again	



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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 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 stiffen, strengthen, and reinforce more complex structures							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment





# Year 6

## KS2 -Year 6 - Term 1 – Mortal Engines (Design and make a city)

National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To research and develop a design for a Mortal Engines city.</li> <li>To communicate designs through discussion and annotated sketches and diagrams.</li> </ul>	To know how to draw a design of their city. To know how to annotate their design.	Outcome	Key texts
		Design and make a Mortal Engines city.	Mortal Engines



<ul style="list-style-type: none"><li>• To select appropriate tools and equipment to cut, stick and join materials to form the city.</li><li>• To select appropriate materials to build the city according to their functional and aesthetic qualities.</li><li>• To apply their knowledge of how to strengthen and reinforce structures.</li><li>• To understand and use mechanical systems in their cities.</li></ul>	<p>To know how to select appropriate materials to create their design.</p> <p>To know how to select appropriate tools and materials to construct their model.</p> <p>To know how to use mechanical systems to enable their model to move.</p> <p>To know how to evaluate their model and design.</p>		
Prior Learning	Key Question(s)	Future Learning	
<p><b>Year 2</b> Made a mechanical fire engine</p> <p><b>Year 3</b> Made a funicular railway</p> <p><b>Year 5</b> Used levers and linkages to make shadow puppets</p>	<p>What is the inspiration for your design?</p> <p>How are you going to represent that in a design and model?</p> <p>What materials are most suitable to use for your model? Why?</p> <p>How are you going to enable your model to move?</p> <p>What tools and techniques will you need to use to build and strengthen your model?</p>	N/A	
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 discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg 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 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 stiffen, strengthen, and reinforce more complex structures Understand and use mechanical systems in their products eg pulleys, levers, gears, cams and linkages Understand and use electrical systems in their products eg series circuits, incorporating switches, bulbs, buzzers, and motors Apply their understanding of computing to program, monitor and control their products							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment

KS2- Year 6- Term 2 - War/Remembrance - Make do and Mend (Textiles)			
National Curriculum Objective	Sticky Knowledge	Vocabulary	
<ul style="list-style-type: none"> <li>To engage in the process of making</li> <li>Develop ideas through diagrams, prototypes and pattern pieces</li> <li>Select from a range of tools to perform practical tasks e.g. sewing and mending</li> <li>Select from a range of materials including textiles according to their functional and aesthetic qualities</li> <li>Apply their understanding of how to strengthen and reinforce</li> <li></li> </ul>	<p>Textiles</p> <p>Make do and mend – sewing</p> <ul style="list-style-type: none"> <li>Different stitches exist for many different purposes</li> <li>Sewing and mending was extremely important in the war because of the shortage of materials</li> <li></li> </ul>	Mend, strengthen, recycle, repurpose,	
		Outcome	
		Repair and repurpose clothes and fabrics to make useful and functional items	Imperial War Museum <a href="#">Make do and mend</a>
Prior Learning	Key Question(s)	Future Learning	



Children made cross stitch patterns in Y4 In Y1 and Y2 they made hand sewn and hand crafted hand puppets			Why did people have to repurpose clothes in the war? What materials and old clothes can be repurposed? When do we repurpose and when do we recycle? What are the key techniques for recycling and repurposing?					
When designing and making, pupils should 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 discussions, annotated sketches, pattern pieces and CAD							
Make	select from and use a wide range of tools and equipment to perform practical tasks eg cutting, shaping, joining and finishing Select from and use a wide range of materials 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 textiles to the materials being developed							
Context	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment



<b>COOKING &amp; NUTRITION</b> <ul style="list-style-type: none"><li>understand and apply the principles of a healthy and varied diet</li><li>prepare and cook a meal using a range of ingredients and appropriate cooking utensils</li><li>understand seasonality, and know where and how a variety of ingredients are grown and processed.</li></ul> <b>MAKE</b> <ul style="list-style-type: none"><li>select and use appropriate tools and equipment to prepare the ingredients</li><li>select and use appropriate ingredients to make a balanced flavour filled meal</li></ul> <b>EVALUATE</b> <ul style="list-style-type: none"><li>investigate and analyse a range of existing recipes</li><li>evaluate the meal by interviewing the consumers</li></ul>	<b>Cooking and Nutrition</b> Use a range of cooking techniques (cutting etc.) Baking leads to even whole product cooking Grilling leads to one sided intense cooking of product Ingredients when combined can lead to new foods due to chemical changes	Ingredients, recipe, utensil, bake, fry, grill,	
		<b>Outcome</b>	<b>Key events or individuals</b>
		Prepare a meal which is worthy of a celebration.	
<b>Prior Learning</b>	<b>Key Question(s)</b>	<b>Future Learning</b>	
Children have made smoothies, pizzas and soup in previous years			
<b>When designing and making, pupils should be taught to...</b>			
<b>Design</b>	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 groupsGenerate, develop, model and communicate their ideas through discussions, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD		
<b>Make</b>	select from and use a wide range of tools and equipment to perform practical tasks eg cutting, shaping, joining and finishing Select from and use a wide range of materialsd and components including construction materials textiles and ingredients according to their functional properties and aesthetic qualities		



<b>Evaluate</b>	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							
<b>Nutritional knowledge</b>	Understand the principles of a healthy and varied diet Prepare and cook a savoury dish Understand seasonality, know how ingredients are grown and processed							
<b>Context</b>	Home	School	Leisure	Culture	Enterprise	Industry	Health	Environment