

Applecroft School Curriculum Map



Design Technology

2023/24:

Year 5: Year 5 Systems (How can we keep ourselves safe on the road?) - *without microbits*

Year 6: Year 6 Electrical Systems (Can switches perform more than one function?)

2024/25:

Year 5: Year 6 Electrical Systems (Can switches perform more than one function?)

Year 6: Year 6 Electrical Systems (Can switches perform more than one function?)

2025/26:

Year 5: Year 6 Electrical Systems (Can switches perform more than one function?)

Year 6: Year 5 Systems (How can we keep ourselves safe on the road?)

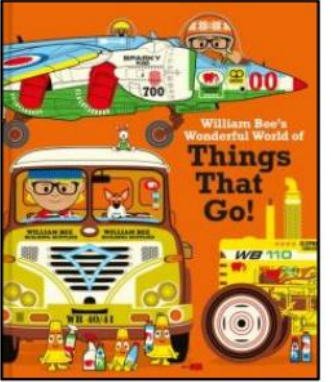
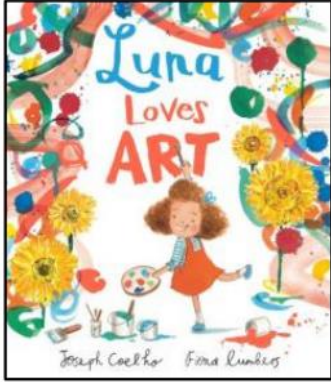
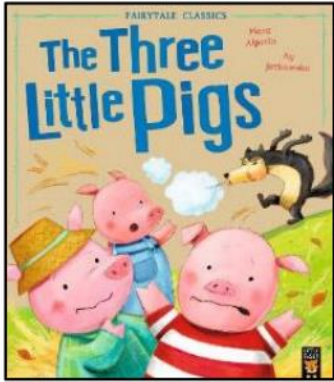
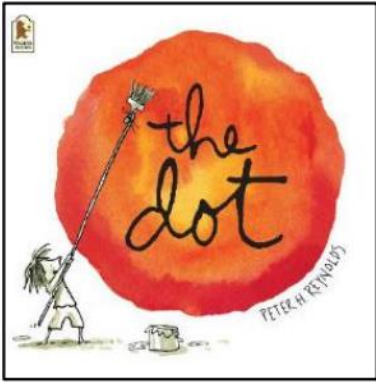
Range of Materials

Range of Materials		
What will we explicitly teach:	<ul style="list-style-type: none"> • Model naming and describing materials. • Teach pupils to stretch, squash, roll, tear, scrunch and join materials • Model imaginative construction (e.g. adult to provide an example as a guide to inspire) • Explain choices of materials and shapes. 	<ul style="list-style-type: none"> • Model naming and describing material (e.g. create own labels for their creations) • Teach pupils to stretch, squash, roll, tear, scrunch and join materials • Model imaginative construction (e.g. provide the children with visual prompts/steps for them to follow) • Explain choices of materials and shapes (e.g. "I have used a split pin instead of a paperclip to join my paper because...")
	Nursery	Reception
What will pupils know and be able to do? <i>italics = prior learning</i>	<ul style="list-style-type: none"> • <i>Explore different materials, using all of their senses to investigate them.</i> • <i>Manipulate and play with different materials.</i> • <i>Use their imagination as they consider what they can do with different materials.</i> • <i>Use block play to begin to build and design</i> • Explore different materials freely to develop their ideas about how to use them and what to make. 	<ul style="list-style-type: none"> • Develop their own ideas through experimentation with a diverse range of materials. • Increasingly choose more appropriate materials for the job, e.g. cotton reels / lids for wheels, wool / thread for hair. • Join different materials explaining why they have chosen a specific fixing. • Purposefully choose construction materials and fixings for a specific job.

	<ul style="list-style-type: none"> Join different materials, beginning to explain choice linked to shape and texture / properties. Use various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces. 	
Prompting Questions for 'Thinking Hard'	<ul style="list-style-type: none"> <i>What does it feel like? / What can you see?</i> <i>What shall we make?</i> <i>Which block might fit on top of that one? Why?</i> <i>What did you use? Why?</i> <i>How did you join them together?</i> <i>How did you get that to balance / stay up?</i> 	<ul style="list-style-type: none"> Why did you choose that? Can you explain your thinking? Why do you think that worked / didn't work? What could you use instead? What fixing have you used?
Essential Vocabulary <i>italics = prior learning</i>	<p><i>make, hard, soft, small, big</i></p> <p><u>build, join, plastic, paper, cardboard</u></p>	<p><i>build, join, plastic, paper, cardboard</i></p> <p><u>material, wood, foil, fabric, fixing</u></p>
Tools and Fixings		
What will we explicitly teach:	<ul style="list-style-type: none"> scissor use and safety (e.g. playdough scissors - craft scissors - scissors) cutting tape safely on and off a cutter the different types of fixing and which to use in different scenarios, including different types of glue and tape correct use of cutlery safe use of hand and hole punches, craft punches, staplers, trowels 	<ul style="list-style-type: none"> scissor use and safety cutting tape safely on and off a cutter the different types of fixing and which to use in different scenarios, including different types of glue and tape correct use of cutlery safe use of hole punches, staplers, trowels, hammer, hand drills, hand vice and saw
	Nursery	Reception
What will pupils know and be able to do? <i>italics = prior learning</i>	<ul style="list-style-type: none"> <i>Begin to use scissors and Sellotape cutters accurately.</i> <i>Use basic fixings, e.g. PVA glue, Pritt stick, masking tape, Sellotape (but may still get tangled).</i> Use scissors accurately. Begin to use cutlery accurately. With supervision, use staplers and hole punches safely. Use masking tape, Sellotape (and cutter), elastic bands, Pritt stick and PVA glue accurately. Begin to use treasury tags. With supervision, begin to use an age-appropriate hammer and screws (goggles and gloves). 	<ul style="list-style-type: none"> Accurately use a range of small tools - scissors, cutlery, stapler, hole punch, trowel. Know how to use an age-appropriate hammer, screws, nails, hand drills, hand vice and a saw safely (goggles and gloves). Use a range of fixings explaining choices - staples / stapler, hole punch, treasury tags, split pins, paperclips, different glues (Pritt stick and PVA glue), Sellotape, masking tape.
Prompting Questions for 'Thinking Hard'	<ul style="list-style-type: none"> <i>Can you explain / show me how to use the scissors?</i> <i>How can we stop the tape from getting tangled?</i> <i>How can we stick them together? What shall we use?</i> <i>Can you find a ...? How can we fix it to the ...?</i> 	<ul style="list-style-type: none"> Which fixing shall we use for this job and why? Which tools will you use? Can you explain your choices? How can we stay safe while we are doing this?

	<ul style="list-style-type: none"> • What tool are you using? How do you use it safely? • Which fixing will be best for ...? 	
Essential Vocabulary <i>italics = prior learning</i>	<i>scissors, tape, glue, together, safe</i> <u>stapler, hole punch, treasury tag, tools, safely</u>	<i>stapler, hole punch, treasury tag, tools, safely</i> <u>trowel, drill, vice, saw, split pins, safety equipment</u> (e.g. goggles)
Discussion and Evaluation		
What will we explicitly teach:	<ul style="list-style-type: none"> • Model explaining what you have made, what you used and why, including colour • Vocabulary to enable pupils to name different materials • How to share what they have created with others using precise language. I have made a ... by ... • How to give their peers feedback on what they have done using stem sentences, e.g. I like ... because ... 	<ul style="list-style-type: none"> • Model explaining what you have made, what you used and why, including colours • Age related vocabulary to enable pupils to name different materials and fixings • How to share what they have created with others using precise language. I have made a ... by ... • How to give their peers feedback on what they have done using stem sentences, e.g. I like ... because ...
	Nursery	Reception
What will pupils know and be able to do? <i>italics = prior learning</i>	<ul style="list-style-type: none"> • <i>Say what they have made. Use key words to assign meaning to their creations, e.g. dog, mummy, head, tail, face</i> • <i>Begin to talk about the colours they have used and why.</i> • <i>Begin to name what they have used to create, e.g. box, paper, tape</i> • Say what they like about their creations. • Say what was hard and easy about their creations • Talk about the colours they have used and why • Use increasingly accurate vocabulary to name what they have used to create, e.g. egg box, cereal box, juice bottle, plastic, cardboard • Begin to talk to others about and share their creations showing increasingly more interest in what others have done. I like ... because ... 	<ul style="list-style-type: none"> • Share their creations explaining the process they have used, e.g. colours, fixings and materials using mostly accurate vocabulary. • Return to and build on their previous learning, refining ideas and developing their ability to represent them. • Say what works well / why they are proud / pleased about their creation and what they might do to make it even better. • Create collaboratively, sharing ideas, resources and skills.
Prompting Questions for 'Thinking Hard'	<ul style="list-style-type: none"> • <i>What have you made? Can you tell me about it?</i> • <i>Why did you choose those colours?</i> • <i>What did you use to make your chair? (Link to Goldilocks.) Can you name the different things you used?</i> • <i>What did you find easy/hard when you made your... ?</i> • <i>What do you like best about your Dot Painting? (linked to The Dot) Why?</i> • <i>Tell me, what have you used to make your House? (Link to The Three Little Pigs) Why did you choose that?</i> • <i>What do you like about ...'s model? Why?</i> 	<ul style="list-style-type: none"> • <i>Tell me about how you fixed ... to ... ? Can you tell me about the materials you chose to use for your vehicle (linked to William Bee) and why?</i> • <i>What are you pleased about? What could you make even better? Why?</i>
Essential Vocabulary <i>italics = prior learning</i>	<i>made, used, paper, box, tape/glue</i> <u>hard, easy, because, enjoyed, favourite</u>	<i>hard, easy, because, enjoyed, favourite</i> <u>materials, fixings, better, proud, idea</u>

Stories that could unlock the learning



Year 1

Mechanisms	Structures	Food & Nutrition	Understanding Materials	Textiles	Systems <i>Inc. Electrical Systems</i>
<p><u>Key Knowledge and Skills</u></p> <p>Know the common uses of sliders.</p> <p>Know different methods to create card sliders.</p> <p>Know how sliders can create simple mechanisms.</p> <p>To design and make a slider product.</p> <p>To evaluate the success of their outcomes and recommend improvements.</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know a freestanding structure is a structure that stands on its own foundation or base without attachment to anything else.</p> <p>To build structures that are freestanding using a range of different materials.</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know why colourful food can be healthier.</p> <p>Know how different foods can affect their senses.</p> <p>To peel, chop and grate a selection of vegetables.</p> <p>To modify food to suit their food senses.</p> <p>Know the importance of including a range of vegetables in a diet.</p> <p>To peel, grate, season and breadcrumb a range of vegetables.</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know building materials have different properties which enable them to be used for different purposes.</p> <p>To identify, sort and select materials that can be used in construction.</p> <p>To combine materials.</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know fabric can be joined together using a running stitch.</p> <p>Know the types and names of tools needed for sewing.</p> <p>To create a running stick.</p> <p>To select tools for sewing.</p> <p>To thread a needle.</p>	<p><u>Key Knowledge and Skills</u></p>
<p><u>Key Vocabulary</u></p> <p>Slider Slot Bridge Push Pull Rigid</p>	<p><u>Key Vocabulary</u></p> <p>Tower Topple Lean Foundation Balance Perpendicular</p>	<p><u>Key Vocabulary</u></p> <p>Senses Vitamins Sensory Ribboning Caramelise Marinade</p>	<p><u>Key Vocabulary</u></p> <p>Construction Properties Architect Modify Cement Solidify</p>	<p><u>Key Vocabulary</u></p> <p>Binca Sewing Felt Running Stitch Attach Pouch</p>	<p><u>Key Vocabulary</u></p>

			Function Variety Texture Vitamins Nutritious Pane				
	<p style="text-align: center;"><u>End Points</u></p> <p>Can explain what a slider is and the way it moves.</p> <p>Can select a suitable mechanism for a specific design and explain reasoning.</p> <p>Can use appropriate vocabulary to describe the movement of a slider.</p> <p>Can follow a series of modelled steps to construct simple slider mechanisms.</p> <p>Can talk about the strength and the areas of improvement in their work.</p>	<p style="text-align: center;"><u>End Points</u></p> <p>Can apply knowledge of what makes a structure stable to their own design.</p> <p>Can apply what they have learnt about joining materials effectively to create a stable structure.</p>	<p style="text-align: center;"><u>End Points</u></p> <p>Can explain that vegetables contain vitamins and minerals that the body needs.</p> <p>Can explain that our senses affect our opinions of food.</p> <p>Can use a knife safely and accurately with control.</p> <p>Can state preferences with reasons and suggest ways their dish could be improved.</p> <p>Can identify some of the health benefits of eating a variety of vegetables.</p> <p>Can use a systematic approach and demonstrate dexterity to coat vegetables in flour, beaten egg and breadcrumbs.</p>	<p style="text-align: center;"><u>End Points</u></p> <p>Can explain why some materials are better than others for building with.</p> <p>Can explain confidently choices made about materials selected to be used in construction.</p> <p>Can make changes to a design in light of limitations of building materials.</p>	<p style="text-align: center;"><u>End Points</u></p> <p>Can sew small and consistent stitches to attach two pieces of fabric securely.</p> <p>Can identify parts of a needle and explain the meaning of words such as <i>yarn</i> and <i>thread</i>.</p> <p>Can thread a needle independently (with support of a needle threader).</p>		
	<p style="text-align: center;"><u>Books to Engage</u></p> <p>'Practical Pop-ups and Paper Engineering' by Trish Phillips and Ann Montanaro <i>(teacher resource)</i></p>	<p style="text-align: center;"><u>Books to Engage</u></p> <p>'How Was That Built?' by Roma Agrawal</p> <p>'13 Buildings Children Should Know' by Annette Roeder</p>	<p style="text-align: center;"><u>Books to Engage</u></p> <p>'Oliver's Vegetables' by Vivian French</p> <p>'The Vegetables We Eat' by Gail Gibbons</p>	<p style="text-align: center;"><u>Books to Engage</u></p> <p>'The Three Little Pigs: An Architectural Tale' by Steven Guarnaccia</p> <p>'The Three Little Wolves and the Big Bad Pig' by Eugene Trivizas</p>	<p style="text-align: center;"><u>Books to Engage</u></p> <p>'The Mitten' by Jan Brett</p> <p>'Extra Yarn' by Mac Barnett</p> <p>'Sewing for Kids' by Alexa Ward</p>		

	'New Pop-up Paper Projects: Step-by-step paper engineering for all ages' by Paul Johnson (teacher resource)	'Galileo's Leaning Tower Experiment' by Wendy Macdonald		'Frank Lloyd Wright for Kids: His Life and Ideas' by Kathleen Thorne-Thomsen 'Amazing Science: Materials' by Sally Hewitt	'Ladybird Histories: The Battle of Hastings' by Chris Baker 'The Battle of Hastings (Why do we remember?)' by Claudia Martin	
	Applecroft Adventure	Applecroft Adventure	Applecroft Adventure Pick fruit and eat it	Applecroft Adventure	Applecroft Adventure	Applecroft Adventure
Year 2	Mechanisms	Structures	Food & Nutrition	Understanding Materials	Textiles	Systems <i>Inc. Electrical Systems</i>
	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>
	<p>Know how wheels and axles work together.</p> <p>Know the size and position of wheels affects how they move.</p> <p>To create a simple wheel mechanism.</p> <p>To use wheel mechanisms to propel a simple vehicle.</p>	<p>Know paper becomes stronger when it is folded.</p> <p>Know a load is the amount of weight a structure must carry.</p> <p>To fold paper to increase strength and stability.</p> <p>To test and record how much weight paper can hold.</p>	<p>Know why vegetables are so important to our health.</p> <p>Know what processed foods are.</p> <p>To prepare a range of salad vegetables.</p> <p>To shape and season a bread snack.</p> <p>Know the difference between fresh food and ultra-processed foods.</p> <p>To shape and form ingredients to make delicious food.</p> <p>To use a range of culinary techniques.</p>	<p>Know materials can be modified to become waterproof.</p> <p>Know origami comes from the Japanese words: <i>ori</i>-folding and <i>kami</i>-paper</p> <p>To make paper waterproof.</p> <p>To transform flat paper by folding and creasing to form a hat.</p>	<p>Know how to cut out shapes which have been created by using a template.</p> <p>Know how to use a range of basic sewing skills.</p> <p>To use a template to transfer a pattern.</p> <p>To cut out and join fabric shapes using a template.</p>	
	<u>Key Vocabulary</u>	<u>Key Vocabulary</u>	<u>Key Vocabulary</u>	<u>Key Vocabulary</u>	<u>Key Vocabulary</u>	<u>Key Vocabulary</u>
	<p>Wheel</p> <p>Axle</p> <p>Axle Holder</p> <p>Chassis</p> <p>Rotate</p>	<p>Paper</p> <p>Crease</p> <p>Corrugated</p> <p>Pillar</p> <p>Storey</p>	<p>Free-Range</p> <p>Processed</p> <p>Coagulate</p> <p>Vitamins</p> <p>Protein</p>	<p>Manipulate</p> <p>Flexible</p> <p>Barrier</p> <p>Waterproof</p> <p>Resist</p>	<p>Patchwork</p> <p>Overstitch</p> <p>Repurpose</p> <p>Template</p> <p>Applique</p>	

	Position Centre	Load	Wholemeal Ingredients Fibre Protein Starch	Absorbent	Quilt	
	<p><u>End Points</u></p> <p>Can apply knowledge about the positioning of wheels and axles to a vehicle design.</p> <p>Can make informed decisions about size of wheels to use and can explain reasoning.</p> <p>Can make a simple model to demonstrate a fixed and rotating axle.</p> <p>Can identify strengths and suggest improvements in a model vehicle's construction and performance.</p>	<p><u>End Points</u></p> <p>Can fold paper in a variety of ways.</p> <p>Can draw conclusions about how the shapes created by folded card affect the stability of a structure.</p> <p>Can conduct a series of tests and suggest ways in which a design should be modified as a result.</p>	<p><u>End Points</u></p> <p>Can explain that eating healthily means to eat a wide variety of fresh foods so that the body receives all the nutrients it needs.</p> <p>Can explain the difference between processed and fresh food.</p> <p>Can use the claw, bridge and ribboning techniques to prepare vegetables with increasing control.</p> <p>Can experiment with a range of flavours to develop a spice mix.</p> <p>Can identify some examples of types of food that are processed or ultra-processed.</p>	<p><u>End Points</u></p> <p>Can identify features and materials that make clothing suitable for wet weather.</p> <p>Can explain how the properties of paper change when it is folded.</p> <p>Can carry out a fair test and draw conclusions from the results.</p>	<p><u>End Points</u></p> <p>Can use a card template to draw and cut shapes accurately from fabric.</p> <p>Can use an overstitch to attach shapes to join two pieces of fabric securely and neatly.</p>	<p><u>End Points</u></p>
	<p><u>Books to Engage</u></p> <p>'The Christmasaurus' by Tom Fletcher and Shane Devries</p> <p>'Mrs Armitage on Wheels' by Quentin Blake</p> <p>'The Story of the Car' by Giles Chapman</p>	<p><u>Books to Engage</u></p> <p>'Newspaper Boy and Origami Girl' by Michael Foreman</p> <p>'Cardboard Box Engineering: Cool, Inventive Projects for Tinkerers, Makers & Future Scientists' By Jonathan Adoph</p>	<p><u>Books to Engage</u></p> <p>'How Your Body Works' by Rosie Dickens</p> <p>'Lift-the-Flap Questions and Answers About Food' by Katie Daynes</p>	<p><u>Books to Engage</u></p> <p>'Newspaper Boy and Origami Girl' by Michael Foreman</p> <p>'Where My Wellies Take Me' by Michael and Clare Morpurgo</p> <p>'Everyday Materials' by Peter Riley</p>	<p><u>Books to Engage</u></p> <p>'The Quilt' by Valerieane Leblond</p> <p>'The All-Together Quilt' by Lizzy Rockwell</p> <p>'The Quiltmaker's Gift' by Jeff Brumbeau</p>	<p><u>Books to Engage</u></p>

		<p>'The World is Not a Rectangle' by Jeanette Winter</p> <p>'Little People Big Dreams - Zaha Hadid' by Maria Isabel Sanchez Vegara</p> <p>'Little Leaders: Visionary Women Around The World' by Vashti Harrison</p>		<p>'How Things Work: Materials' by Anne Claybourne</p> <p>'Materials' by Sally Hewitt</p>		
	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u> Pick vegetables and eat them	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u> Fly a kite	<u>Applecroft Adventure</u>
Year 3	Mechanisms	Structures	Food & Nutrition	Understanding Materials	Textiles	Systems Inc. Electrical Systems
	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u>
	<p>Know types of levers and linkages.</p> <p>Know key terminology relating to levers and linkages.</p> <p>Know how levers and linkages can change the direction of movement.</p> <p>To design and make simplistic lever and linkage products.</p> <p>To evaluate the success of their outcomes and recommend improvements.</p>	<p>Know bridges are structures that allow people and vehicles to cross over an open space.</p> <p>Know towers, piers and arches provide strength to a bridge.</p> <p>To design and build a beam bridge that can hold the weight of 100 pennies.</p> <p>To identify and name parts of a bridge.</p>	<p>Know what is meant by the term balance.</p> <p>Know why fresh foods are better,</p> <p>To make a fruit and yoghurt dessert.</p> <p>To make homemade chips.</p> <p>To flavour foods to increase their sensory qualities.</p> <p>Know how food can help their body and mind.</p> <p>Know how to prepare and cook a range of vegetables.</p> <p>To peels and grate a range of vegetables.</p>		<p>Know fabric can be stiffened.</p> <p>Know stiffened fabric can hold a form.</p> <p>To select and apply solutions to stiffen fabric.</p> <p>To make a box using stiffened fabric.</p>	<p>Know different types of energy.</p> <p>Know why designers need to carefully consider energy sources.</p> <p>To identify how things are powered.</p> <p>To suggest appropriate energy sources for design problems.</p>

	<p><u>Key Vocabulary</u></p> <p>Lever Linkage Mechanism Force Load Effort</p>	<p><u>Key Vocabulary</u></p> <p>Gap Deck Pier Suspension Arch Bascule</p>	<p>To add flavour and texture to foods.</p> <p><u>Key Vocabulary</u></p> <p>Seasonal Balance Preserve Stew Pressure Seasoning Nutrition Fibre Minerals Claw Bridge</p>	<p><u>Key Vocabulary</u></p>	<p><u>Key Vocabulary</u></p> <p>Starch PVA Glue Gelatin Stiffen Interfacing Cloth</p>	<p><u>Key Vocabulary</u></p> <p>Energy Energy Source</p> <p>Types of Energy: <i>Potential Energy;</i> <i>Chemical Energy,</i> <i>Stored Mechanical Energy,</i> <i>Gravitational Potential Energy,</i> <i>Nuclear Energy.</i> <i>Kinetic Energy;</i> <i>Electrical Energy,</i> <i>Radiant Energy,</i> <i>Thermal Energy,</i> <i>Motion Energy,</i> <i>Sound Energy.</i></p> <p>Turbine Source Intermittent Renewable</p>
	<p><u>End Points</u></p> <p>Can explain the connection between levers and linkages.</p> <p>Can select a linkage systems to create a desired movement.</p> <p>Can select and create a design that complements the type of movement created.</p> <p>Can use modelling skills to construct a simple linkage mechanism.</p>	<p><u>End Points</u></p> <p>Can identify the key features of a bridge.</p> <p>Can explain the purpose of key features of a bridge.</p> <p>Can identify features that are used to give a bridge strength and stability.</p> <p>Can generate ideas about how to modify a design to increase the strength and stability of a free-standing structure.</p>	<p><u>End Points</u></p> <p>Can explain that a balanced diet means eating some food in moderation.</p> <p>Can distinguish between healthy and unhealthy foods.</p> <p>Can show creativity in their exploration of ingredients and flavour combinations.</p> <p>Can select and use seasoning to enhance</p>	<p><u>End Points</u></p>	<p><u>End Points</u></p> <p>Can apply layers of fabric and PVA glue over a mould to create a desired form.</p> <p>Can generate and express ideas about how to cover a box with fabric.</p> <p>Can fold and manipulate fabric to cover the inside and outside of a box.</p>	<p><u>End Points</u></p> <p>Can identify different types of energy.</p> <p>Can match different types of energy to everyday objects and activities.</p> <p>Can explain why energy sources are selected for specific purposes.</p> <p>Can give clear explanations about why certain power sources have been used and the</p>

	<p>Can explain how their system works, the changes in movement and force achieved.</p> <p>Can make suggestions for improvements about their system.</p>		<p>flavour and can explain reasons for choices.</p> <p>Can recognise that good nutrition keeps the body healthy, provides energy and helps the body to repair.</p> <p>Can slice and grate vegetables and fruit with accuracy and control.</p> <p>Can explain what caramelisation means and how it affects the flavour and texture of food.</p>			<p>benefits and limitations of these.</p>
	<p><u>Books to Engage</u></p> <p>'Simple Machines: Forces in Action' by Buffy Silverman</p> <p>'Levers' by Martha E.H. Rustad</p> <p>'Making Machines with Livers' by Chris Oxlade</p> <p>'How Machines Work' by Allan Sanders</p>	<p><u>Books to Engage</u></p> <p>'The Tower Bridge Cat' by Tee Dobinson</p> <p>'13 Bridges Children Should Know' by Brad Finger</p> <p>'Awesome Engineering: Bridges' by Sally Spray</p> <p>'Listen to the Wind' by Greg Mortenson</p>	<p><u>Books to Engage</u></p> <p>'Which Food Will You Choose?' by Claire Potter</p>	<p><u>Books to Engage</u></p>	<p><u>Books to Engage</u></p> <p>'What to Do with a Box' by Jane Yolen</p> <p>'On Sudden Hill' by Linda Sarah</p> <p>'The Most Magnificent Thing' by Ashley Spires</p>	<p><u>Books to Engage</u></p> <p>'Rise Up - Ordinary Kids with Extraordinary Stories' by Amanda Li</p>
	<p><u>Applecroft Adventure</u></p>	<p><u>Applecroft Adventure</u></p>	<p><u>Applecroft Adventure</u></p>	<p><u>Applecroft Adventure</u></p>	<p><u>Applecroft Adventure</u></p>	<p><u>Applecroft Adventure</u></p>
Year 4	Mechanisms	Structures	Food & Nutrition	Understanding Materials	Textiles	Systems Inc. Electrical Systems
	<p><u>Key Knowledge and Skills</u></p> <p>Know types of hinges and the related terminology.</p> <p>Know common uses for hinges.</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know triangles provide stability in a structure.</p> <p>Know structural engineers work with architects to</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know processed foods have many added ingredients.</p> <p>To make, roll and shape bread dough.</p>		<p><u>Key Knowledge and Skills</u></p> <p>Know fastenings have different functions.</p> <p>Know a shank provides a small amount of space</p>	<p><u>Key Knowledge and Skills</u></p> <p>Know a switch is an interruption in a circuit.</p> <p>Know switches are widely used in a range of products.</p>

	<p>To make a variety of model hinges.</p> <p>To make and evaluate hinged products using modelling materials.</p>	<p>ensure structures withstand forces.</p> <p>To make triangles to form and join trusses.</p> <p>To identify the forces that affect structures.</p>	<p>To make soup.</p> <p>Know that cheap processed food often contains additives, salt and sugar, which makes it less healthy than unprocessed food.</p> <p>To peel, grate and chop vegetables to make economical, tasty and healthy food.</p>		<p>between the button and fabric.</p> <p>To select appropriate fastenings and attach them to fabric.</p> <p>To make a shank for a button.</p>	<p>To incorporate different types of switches into circuits to perform a function.</p>
	<p><u>Key Vocabulary</u></p> <p>Hinge Knuckle Leaf Pin Barrel Butt Hinge Concealed Hinge Net</p>	<p><u>Key Vocabulary</u></p> <p>Structural Engineer Geodesic Gravity Truss Compression Tension</p>	<p><u>Key Vocabulary</u></p> <p>Ingredients Processed Bread Gluten Knead Ferment Cheap Fusion Texture Shallow-Fry Shortening Fragrant</p>	<p><u>Key Vocabulary</u></p>	<p><u>Key Vocabulary</u></p> <p>Shank Burr Hook and Loop Buckle Fastener Raw Edges</p>	<p><u>Key Vocabulary</u></p> <p>Switch Circuit Component Current Interruption Unbroken Conductor Multi-Purpose</p>
	<p><u>End Points</u></p> <p>Can describe the features of specific hinges.</p> <p>Can explain what a hinge is.</p> <p>Can give examples of where hinges are used.</p> <p>Can experiment with alternative ways to add a hinge to a model.</p>	<p><u>End Points</u></p> <p>Can identify the triangle as a strong and stable shape used in structures such as bridges.</p> <p>Can explain the roles of engineers and architects.</p> <p>Can devise and conduct a strength test.</p> <p>Can give a simple explanation of compression.</p>	<p><u>End Points</u></p> <p>Can show an understanding of the link between highly processed foods and poor health.</p> <p>Can copy a modelled process or technique such as kneading, rolling and stretching.</p> <p>Can grate and cook vegetables safely.</p>	<p><u>End Points</u></p>	<p><u>End Points</u></p> <p>Can explain how and why different fasteners are suitable for different purposes.</p> <p>Can use a running stitch accurately to attach pieces of fabric securely.</p>	<p><u>End Points</u></p> <p>Can explain the purpose and function of a range of switches.</p> <p>Can identify why certain types of switches are used in specific appliances.</p> <p>Can build a simple circuit with a switch.</p>

	Can make evaluative comments about the effectiveness of their hinge.					
	<u>Books to Engage</u> 'Hinges and Hinge-Based Catches' by Charles Lewton-Brain	<u>Books to Engage</u> 'How Was That Built?' by Roma Agrawal 'Built - The Hidden Stories Behind Our Structures' by Roma Agrawal 'Working with Buildings and Structures' by Izzi Howell '13 Buildings Children Should Know' by Annette Roeder '13 Skyscrapers Children Should know' by Brad Finger	<u>Books to Engage</u> 'How Did That Get in My Lunchbox?: The Story of Food' by Chris Butterworth 'Which Food Will You Choose?' by Claire Potter	<u>Books to Engage</u>	<u>Books to Engage</u> 'Buttons and Fasteners 500BC - AD1840' by Gordon Bailey 'Everyday Skills: A Sensory Book of Fastenings' By Nicola Edwards 'How an Idea from Nature Changed our World: The Story of Velcro' by Dorna Schroeter 'Mrs Toggle's Zipper' by Robin Pulver	<u>Books to Engage</u> 'The Big Book of Science Ideas' by Freya Hardy 'The History of Toys' by Helen Cox Cannons
	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>	<u>Applecroft Adventure</u>
Year 5	Mechanisms	Structures	Food & Nutrition	Understanding Materials	Textiles	Systems <i>Inc. Electrical Systems</i>
	<u>Key Knowledge and Skills</u> Know types of gears and terminology relating to gears. Know common uses of pulleys and gears. Know how pulleys and gears can change the direction of movement.	<u>Key Knowledge and Skills</u> Know engineers use a range of methods to strengthen and reinforce structures. To identify and describe ways that frames are strengthened and reinforced.	<u>Key Knowledge and Skills</u> Know some foods and key ingredients from other cultures. Know how other cultures' food can be nutritious. To make, roll and cook a flatbread. To prepare a range of vegetables.	<u>Key Knowledge and Skills</u>	<u>Key Knowledge and Skills</u> Know how to waterproof cotton fabric. Know which fabrics are both functional and hardwearing. To be able to use beeswax to waterproof cotton fabric.	<u>Key Knowledge and Skills</u> Know technology can be used to program and control a product. To combine elements of their design knowledge to fulfil a brief.

	<p>To design and make products that use pulleys and gears to lift loads.</p> <p>To evaluate the success of their outcomes and recommend improvements.</p>		<p>To present foods to a high standard.</p> <p>Know how foods can be used as medicines.</p> <p>Know how eating food from different countries can help us be healthy.</p> <p>To roll and shape ingredients.</p> <p>To slice and ribbon and range of vegetables.</p> <p>To stir-fry vegetables.</p>		<p>To repurpose a pair of jeans.</p>	
	<p><u>Key Vocabulary</u></p> <p>Gear Pulley Mechanism Gear Train Driver Gear Idler</p>	<p><u>Key Vocabulary</u></p> <p>Frame L-Beam Struts Brace Mitre Gussets</p>	<p><u>Key Vocabulary</u></p> <p>Culture Presentation Variety Smorrebrod Flatbread Mezze Fibre Knead Unleavened Migration Spices Medicinal Fragrant Stir-Fry</p>	<p><u>Key Vocabulary</u></p>	<p><u>Key Vocabulary</u></p> <p>Durability Repurpose Functional Beeswax Swatch Insulate</p>	<p><u>Key Vocabulary</u></p> <p>Properties Fastener Algorithm Fluorescent Reflective Attachment Point Debug Programming</p>
	<p><u>End Points</u></p> <p>Can name different types of gear systems.</p> <p>Can identify everyday objects that uses different types of gear systems.</p>	<p><u>End Points</u></p> <p>Can use technical vocabulary to identify and describe ways in which framed structures have been reinforced.</p> <p>Can identify the most suitable shapes used in</p>	<p><u>End Points</u></p> <p>Can identify foods that originate from different countries.</p> <p>Can explain the health benefits of eating foods from other cultures.</p>	<p><u>End Points</u></p>	<p><u>End Points</u></p> <p>Can identify how properties of a fabric can change.</p> <p>Can identify the properties that make certain materials suitable for the storage of food.</p>	<p><u>End Points</u></p> <p>Can identify and describe specific properties of materials.</p> <p>Can develop a design to a specific brief, giving and responding to feedback.</p>

	<p>Know types of pulley systems and gears.</p> <p>Know common uses of pulleys and gears.</p> <p>Know how pulleys and gears can create simple mechanisms and change direction of movement.</p> <p>To design and make a model Ferris wheel powered by gears.</p> <p>To evaluate the success of their outcomes and recommend improvements.</p>	<p>Know structures can be supported with guy lines and flying buttresses.</p> <p>Know the shorter the piece of spaghetti, the stronger it will be.</p> <p>To construct a flying buttress to support a tower.</p> <p>To use appropriate lengths of spaghetti to increase strength and stability.</p>	<p>Know what street foods are.</p> <p>Know how snacks can be good foods to eat.</p> <p>To make a burrito.</p> <p>To make and roll bread dough.</p> <p>To make a savoury pastry.</p> <p>Know the difference between slow release and quick release carbohydrates.</p> <p>Know how food can improve their mood and energy levels.</p> <p>To dice, slice, peel, grate and cook a range of vegetables.</p> <p>To make a sauce and a stock.</p> <p>To use height and colour to improve the visual appeal of food.</p>		<p>Know plastic waste can be recycled and repurposed into practical, useful items.</p> <p>To make a crochet hook out of a chopstick.</p> <p>To use plastic bags and snack packets to create practical items.</p>	<p>Know more than one switch can be used to change the functionality of a product.</p> <p>To use switches to adapt a product in response to a design brief.</p>
	<p><u>Key Vocabulary</u></p> <p>Pulley Movable Pulley Fixed Pulley Block and Tackle Rack and Pinion Driver Gear Driven Gear</p>	<p><u>Key Vocabulary</u></p> <p>Guyed Mast Flying Buttress Load Aesthetic Edifice Constraints</p>	<p><u>Key Vocabulary</u></p> <p>Street Food Culture Snack Nutrient Prove Fry Carbohydrates Staple Saute Translucent</p>		<p><u>Key Vocabulary</u></p> <p>Recycle Repurpose Reduce Chain Seal Skein</p>	<p><u>Key Vocabulary</u></p> <p>Switch Parallel Circuit Series Circuit Component Functionality Multi-Function Brief Simultaneous</p>

	<u>End Points</u>	<u>End Points</u>	Dice		<u>End Points</u>	<u>End Points</u>
	<p>Can name types of pulleys.</p> <p>Can describe the difference between fixed, movable and compound pulleys.</p> <p>Can use the correct technical vocabulary to identify types of gears: spur, worm, driver, driven and idler.</p> <p>Can apply knowledge of gears to design and construct a Ferris wheel model.</p> <p>Can identify ways in which the aesthetics, stability or functionality of a structure can be improved.</p>	<p>Can explain how to use guy lines to achieve greater stability.</p> <p>Can use a systematic approach to test spaghetti for its strength and stability.</p> <p>Can apply learned techniques and knowledge of structural features to construct a stable tower.</p>	<p>Can identify the nutrients some ingredients contain.</p> <p>Can identify how specific nutrients benefit the body.</p> <p>Can explain how the snacks they have made are healthier than many common snacks eaten in the UK.</p> <p>Can use a range of knife skills and techniques safely and with increasing accuracy.</p> <p>Can follow a modelled method to create a specific dish.</p> <p>Can cook food on a hob safely and with control.</p> <p>Can explain the necessity of carbohydrates</p> <p>Can explain the difference between simple and complex carbohydrates.</p> <p>Can identify foods that are used for their remedial qualities.</p> <p>Can dice, peel, chop and grate vegetables safely and accurately.</p>		<u>End Points</u>	<p>Can make reasonable suggestions for alternative uses of materials based on knowledge of their properties.</p> <p>Can crochet a simple bag.</p> <p>Can make a record of the processes involved.</p> <p>Can design a bag, explaining reasons for choices and how the bag will be made.</p> <p>Can make a bag from recycled materials</p>

