

Design Technology Essential Knowledge

Embedding our Learning Culture

Curricular Goal: Know how to design, make and evaluate different products and understand how products have changed through time

KS2: How can I design, make and evaluate products and show that I understand how products have change through time?

KS1: How can I plan, make and improve products and show I know how products have changed?

Safe

- keeping safe
- visits
- positive attitudes to learning

Achieving

- alteration to LTM
- building knowledge including recalls and low stakes quizzes
- building confidence
- high expectations

Nurtured

- dialogic approach
- learning from mistakes

Component 1: Know how to design a purposeful, functional and appealing product (design)

Reception Essential Knowledge	Year 1 Essential Knowledge	Year 2 Essential Knowledge	Year 3 Essential Knowledge	Year 4 Essential Knowledge	Year 5 Essential Knowledge	Year 6 Essential Knowledge
Year A&B How to talk about what my product should look like	Year A The way to design a product <ul style="list-style-type: none"> • discussions • use simple labelled drawings 		Year A The way to design a product <ul style="list-style-type: none"> • use detailed annotated sketches • use including pattern pieces 		Year A The way to design a product showing key detail <ul style="list-style-type: none"> • use exploded diagrams • use computer aided design 	
	Year B Templates <ul style="list-style-type: none"> • use given versions • create own 		Year B Simple prototype <ul style="list-style-type: none"> • identify the purpose • create own 		Year B Cross sectional diagrams <ul style="list-style-type: none"> • identify specific design detail 	

Component 2: Know how to make a product by cutting, joining, finishing (make) using specific techniques (technical understanding)

Year A&B Cooking and nutrition Different healthy and unhealthy foods	Year A Cooking and nutrition Healthy and varied snacks <ul style="list-style-type: none"> • identify • design and make own Fruits and vegetables come from different places		Year A Cooking and nutrition Principles of a healthy and varied diet <ul style="list-style-type: none"> • apply these to design and make a simple meal Food comes from different places How food gets to our plates		Year A Cooking and nutrition Seasonality affects the food we eat <ul style="list-style-type: none"> • create a healthy and balanced meal based on seasonality Food is reared, caught and processed	
Making How to use tools safely to: <ul style="list-style-type: none"> • mix/blend, pour, and chop 	Making How to hold a knife and how to make a single cut: <ul style="list-style-type: none"> • bridge hold 		Making How to hold a knife safely and cut foods in different ways: <ul style="list-style-type: none"> • fork secure • claw grip 		Making How to use different knives for different purposes	

<ul style="list-style-type: none"> enhancements to meet physical and mental health needs <p>Included</p> <ul style="list-style-type: none"> pupils supported to meet endpoints <p>Responsible Respected</p>	<p>Year A&B Textiles Materials can be joined in different ways</p> <ul style="list-style-type: none"> tying knots weaving/sewing <p>There are different ways to cut and shape:</p> <ul style="list-style-type: none"> tear cut fold <p>(with support)</p>	<p>Year A Textiles Natural dyes can change materials</p> <ul style="list-style-type: none"> beetroot, red cabbage, tea, onion or spinach etc <p>Construction Levers and sliders make things move</p> <ul style="list-style-type: none"> create a product e.g. rabbit in hat/moving pictures 	<p>Year A Textiles Fabric can be decorated in different ways</p> <ul style="list-style-type: none"> simple tie-dye techniques fabric paint/pens use designs to depict a story or poem <p>Construction There are different ways to make a structure stable</p> <ul style="list-style-type: none"> structures can be strengthened, stiffed and reinforced to improve stability buildings/bridges 	<p>Year A Textiles Fabric can be decorated in different ways</p> <ul style="list-style-type: none"> an awareness of the natural environment can be shown through careful colour matching showing understanding of seasonal colours <p>Construction Cams create different movements</p> <ul style="list-style-type: none"> moving toys
<ul style="list-style-type: none"> excellent attitudes development of interpersonal skills: the whole child <p>Healthy and Active</p> <ul style="list-style-type: none"> physical health 		<p>Year B Textiles How to join fabric</p> <ul style="list-style-type: none"> simple running stitches decorate the surface by gluing on beads or buttons <p>Structures There are different ways to make a structure stable</p> <ul style="list-style-type: none"> folding rolling grouping paper or card towers/bridges <p>Wheels and axles How to include moving wheels and axles in designs and products</p> <ul style="list-style-type: none"> vehicles 	<p>Year B Textiles How to join fabric</p> <ul style="list-style-type: none"> straight stitches (running stitch and back stitch) cross stitch blanket stitches to outline the pattern or enhance the design <p>Structures with electrical systems Simple electrical circuits in products</p> <ul style="list-style-type: none"> at least 1 light up component <p>Levers and linkages How levers and linkages can be used in moving products</p> <ul style="list-style-type: none"> moving toys/objects 	<p>Year B Textiles How to join fabric</p> <ul style="list-style-type: none"> chain stitch feather stitches decorate by sewing on beads, buttons, sequins <p>Structures with electrical systems Simple electrical circuits in products</p> <ul style="list-style-type: none"> more than one component (light/buzzer/ switch) <p>Gears and pulleys How gears and pulleys can be used in products</p> <ul style="list-style-type: none"> moving vehicle with pulley and motor
		<p>Making in textiles, construction, structures, wheels and sliders</p> <p>There are different techniques for cutting and shaping:</p>	<p>Making in textiles, construction, structures, levers and linkages</p> <p>Different tools should be used based on the material being cut</p>	<p>Making in textiles, construction, structures, gears and pulleys</p> <p>Different tools should be used based on the material being cut</p>

	<ul style="list-style-type: none"> tearing cutting, folding <p>There are different techniques for joining materials:</p> <ul style="list-style-type: none"> sewing glue stick an appropriate amount of PVA/fabric glue <p>How to use scissors accurately and safely</p> <ul style="list-style-type: none"> cut to nearest cm 	<ul style="list-style-type: none"> scissors hand saw <p>There are different ways to join materials</p> <ul style="list-style-type: none"> sewing fabric glue PVA glue glue gun tape masking tape blu-tac <p>How to use scissors accurately and safely</p> <ul style="list-style-type: none"> cut to nearest 5mm 	<ul style="list-style-type: none"> scissors fabric scissors hand saw <p>There are different ways to join materials</p> <ul style="list-style-type: none"> choose most appropriate way independently use glue guns safely <p>A smooth finish is created by sanding wood</p> <p>How to use scissors accurately and safely</p> <ul style="list-style-type: none"> cut within the perimeter on an object e.g. slots of cut outs
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Component 3: Know how to evaluate a product (evaluation)

Year A&B How to say what went well/could be improved next time	Year A Evaluate existing products based on a given design criteria	Year A Evaluate existing products based on a given design criteria	Year A Analyse existing products, looking at specific component parts, based on a detailed design specification
	Year B Evaluate their own products based on a given design criteria	Year B Evaluate their own design based on a given criteria, adding in their own specific design specifications	Year B Analyse their own designs based on the design specification, considering the views of others
Year A&B People can do different jobs <ul style="list-style-type: none"> chef designer builder 	Year A&B Key individuals have changed the way we live our lives <ul style="list-style-type: none"> Cooking and nutrition: Textiles: Construction: Structures: Wheels and sliders: Karl Benz 	Year A&B Key individuals have helped to shape the world <ul style="list-style-type: none"> Cooking and nutrition: Textiles: Faith Ringold/Phillip Brown Construction: Filippo Brunelleschi Structures: Benjamin Franklin Levers and linkages: James Watt 'Watt's linkage' 	Year A&B Key individuals and events in design and technology have helped to shape the world and contribute to engineering advances <ul style="list-style-type: none"> Cooking and nutrition: Textiles: Construction: Ismail al-Jazari Structures: George Ohms/Richard Sapper Gears and pulleys: Archimedes of Syracuse

- Each 'make' (component 2) should be combined with a design prior to making (component 1) and an evaluation (component 3) after making
- Designer/key individuals - linked to each area / in depth study of key individual

Rolling Programme			
	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
A	Cooking and nutrition Textiles Construction - levers and sliders	Cooking and nutrition Textiles Construction - stable structures	Cooking and nutrition Textiles Construction - cams
B	Structures Textiles Wheels and axles	Structures with electrical systems Textiles Levers and linkages	Structures with electrical systems Textiles Gears and pulleys