

**Design and Technology Progression at St Minver School**



Strand	Reception	Year 1	Year 2 End of KS1 expectations	Year 3	Year 4	Year 5	Year 6 End of KS2 expectations
Design	<p>Select appropriate resources</p> <p>Use gestures, talking and arrangements of materials and components to show design</p> <p>Use contexts set by the teacher and myself</p> <p>Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</p>	<p>have own ideas</p> <p>Explain what I want to do</p> <p>Explain what my product is for, and how it will work</p> <p>Use pictures and words to plan, begin to use models</p> <p>Design a product for myself following design criteria</p> <p>Research similar existing products</p>	<p>have own ideas and plan what to do next</p> <p>Explain what I want to do and describe how I may do it</p> <p>Explain purpose of product, how it will work and how it will be suitable for the user</p> <p>Describe design using pictures, words, models, diagrams, begin to use ICT</p> <p>Design products for myself and others following design criteria</p> <p>Choose best tools and materials, and explain choices</p>	<p>begin to research others' needs</p> <p>Show design meets a range of requirements describe purpose of product</p> <p>Follow a given design criteria * have at least one idea about how to create product</p> <p>Create a plan which shows order, equipment and tools *describe design using an accurately labelled sketch and words * make design decisions *explain how product will work * make a prototype</p>	<p>* use research for design ideas * show design meets a range of requirements and is fit for purpose *begin to create own design criteria *have at least one idea about how to create product and suggest improvements for design. * produce a plan and explain it to others *say how realistic plan is *include an annotated sketch *make and explain design decisions considering availability of resources *explain how product will work</p>	<p>*use internet and questionnaires for research and design ideas *take a user's view into account when designing * begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *create own design criteria * have a range of ideas *produce a logical, realistic plan and explain it to others. *use cross-sectional planning and annotated sketches * make design decisions</p>	<p>*draw on market research to inform design * use research of user's individual needs, wants, requirements for design * identify features of design that will appeal to the intended user * create own design criteria and specification * come up with innovative design ideas *follow and refine a logical plan. *use annotated sketches, cross-sectional planning and exploded diagrams * make design decisions,</p>

			Use knowledge of existing products to produce ideas	* begin to use computers to show design	* make a prototype *begin to use computers to show design	considering time and resources. *clearly explain how parts of product will work. *model and refine design ideas by making prototypes and using pattern pieces. *use computer-aided designs	considering, resources and cost * clearly explain how parts of design will work, and how they are fit for purpose * independently model and refine design ideas by making prototypes and using pattern pieces * use computer-aided designs
<b>Make</b>	*Construct with a purpose, using a variety of resources *Use simple tools and techniques *Build / construct with a wide range of objects *Select tools & techniques to shape, assemble and join *Replicate structures with	*explain what I'm making and why *consider what I need to do next *select tools/equipment to cut, shape, join, finish and explain choices *measure, mark out, cut and shape, with support *choose suitable materials and explain choices *try to use finishing techniques to make product look good	*explain what I am making and why it fits the purpose *make suggestions as to what I need to do next. *join materials/ Components together in different ways *measure, mark out, cut and shape materials and components, with support.	*Select suitable tools/equipment, explain choices; begin to use them accurately * select appropriate materials, fit for purpose. * work through plan in order *consider how good product will be * begin to measure, mark out, cut and shape materials/ components with some accuracy * begin to assemble,	*select suitable tools and equipment, explain choices in relation to required techniques and use accurately *select appropriate materials, fit for purpose; explain choices * work through plan in order. * realise if product is going to be good quality * measure, mark out, cut and shape	*use selected tools/equipment with good level of precision * produce suitable lists of tools, equipment/materials needed *select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow detailed step-by-step plan * explain how product will	*use selected tools and equipment precisely *produce suitable lists of tools, equipment, materials needed, considering constraints * select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics

	<p>materials / components</p> <ul style="list-style-type: none"> <li>*Discuss how to make an activity safe and hygienic</li> <li>*Record experiences by drawing, writing, voice recording</li> <li>*Understand different media can be combined for a purpose</li> </ul>	<ul style="list-style-type: none"> <li>* work in a safe and hygienic manner</li> </ul>	<ul style="list-style-type: none"> <li>*describe which tools I'm using and why</li> <li>*choose suitable materials and explain choices depending on characteristics.</li> <li>*use finishing techniques to make product look good</li> <li>*work safely and hygienically</li> </ul>	<ul style="list-style-type: none"> <li>join and combine materials and components with some accuracy</li> <li>* begin to apply a range of finishing techniques with some accuracy</li> </ul>	<ul style="list-style-type: none"> <li>materials/components with some accuracy</li> <li>*assemble, join and combine materials and components with some accuracy</li> <li>*apply a range of finishing techniques with some accuracy</li> </ul>	<ul style="list-style-type: none"> <li>appeal to an audience</li> <li>* mainly accurately measure, mark out, cut and shape materials/components</li> <li>*mainly accurately assemble, join and combine materials/components</li> <li>* mainly accurately apply a range of finishing techniques</li> <li>* use techniques that involve a small number of steps</li> <li>* begin to be resourceful with practical problems</li> </ul>	<ul style="list-style-type: none"> <li>* create, follow, and adapt detailed step-by-step plans</li> <li>*explain how product will appeal to audience; make changes to improve quality</li> <li>* accurately measure, mark out, cut and shape materials/components</li> <li>* accurately assemble, join and combine materials/components</li> <li>* accurately apply a range of finishing techniques</li> <li>* use techniques that involve a number of steps</li> <li>* be resourceful with practical problems</li> </ul>
<b>Evaluate</b>	<ul style="list-style-type: none"> <li>*Adapt work if necessary</li> <li>*Dismantle, examine, talk about existing objects/structures</li> </ul>	<ul style="list-style-type: none"> <li>*talk about my work, linking it to what I was asked to do</li> <li>* talk about existing products considering</li> </ul>	<ul style="list-style-type: none"> <li>*describe what went well, thinking about design criteria</li> <li>* talk about existing products considering: use,</li> </ul>	<ul style="list-style-type: none"> <li>look at design criteria while designing and making</li> </ul>	<ul style="list-style-type: none"> <li>*refer to design criteria while designing and making</li> <li>*use criteria to evaluate product</li> </ul>	<ul style="list-style-type: none"> <li>*evaluate quality of design while designing and making</li> <li>*evaluate ideas and finished</li> </ul>	<ul style="list-style-type: none"> <li>*evaluate quality of design while designing and making; is it fit for purpose?</li> </ul>

	<p>es *Consider and manage some risks *Practise some appropriate safety measures independently *Talk about how things work *Look at similarities and differences between existing objects / materials / tools *Show an interest in technological toys *Describe texture</p>	<p>: use, materials, how they work, audience, where they might be used *talk about existing products, and say what is and isn't good * talk about things that other people have made *begin to talk about what could make product better</p>	<p>materials, how they work, audience, where they might be used; express personal opinion *evaluate how good existing products are *talk about what I would do differently if I were to do it again and why</p>	<p>*use design criteria to evaluate finished product * say what I would change to make design better *begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose * begin to understand by whom, when and where products were designed * learn about some inventors/designers/engineers/chefs/manufacturers of groundbreaking products</p>	<p>* begin to explain how I could improve original design *evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * discuss by whom, when and where products were designed * research whether products can be recycled or reused * know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products</p>	<p>product against specification, considering purpose and appearance. *test and evaluate final product * evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * begin to evaluate how much products cost to make and how innovative they are *research how sustainable materials are *talk about some key inventors/designers/engineers/chefs/manufacturers of groundbreaking products</p>	<p>* keep checking design is best it can be. *evaluate ideas and finished product against specification, stating if it's fit for purpose *test and evaluate final product; explain what would improve it and the effect different resources may have had *do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose *evaluate how much products cost to make and how innovative they are</p>
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<b>Technical Knowledge Materials /structures</b>		<ul style="list-style-type: none"> <li>*begin to measure and join materials, with some support</li> <li>*describe differences in materials</li> <li>*suggest ways to make material/ product stronger</li> </ul>	<ul style="list-style-type: none"> <li>*measure materials</li> <li>*describe some different characteristics of materials</li> <li>*join materials in different ways</li> <li>*use joining, rolling or folding to make it stronger</li> <li>*use own ideas to try to make product stronger</li> </ul>	<ul style="list-style-type: none"> <li>*use appropriate materials</li> <li>*work accurately to make cuts and holes</li> <li>* join materials</li> <li>*begin to make strong structures</li> </ul>	<ul style="list-style-type: none"> <li>*measure carefully to avoid mistakes</li> <li>*attempt to make product strong</li> <li>*continue working on product even if original didn't work</li> </ul>	<ul style="list-style-type: none"> <li>*select materials carefully, considering intended use of product and appearance</li> <li>*explain how product meets design criteria</li> <li>*measure accurately enough to ensure precision</li> <li>*ensure product is strong and fit for purpose</li> <li>*begin to reinforce</li> </ul>	<ul style="list-style-type: none"> <li>*select materials carefully, considering intended use of the product, the aesthetics and functionality.</li> <li>*explain how product meets design criteria</li> <li>* reinforce and strengthen a 3D frame</li> </ul>

Technical knowledge - Mechanisms		*begin to use levers or slides	*use levers or slides	*select appropriate tools / techniques *alter product after checking, to make it better *begin to try new/different ideas *use simple lever and linkages to create movement	*select most appropriate tools / techniques *explain alterations to product after checking it *grow in confidence about trying new / different ideas. *use levers and linkages to create movement *use pneumatics to create movement	refine product after testing *grow in confidence about trying new/different ideas *begin to use cams, pulleys or gears to create movement	*refine product after testing, considering aesthetics, functionality and purpose *incorporate hydraulics and pneumatics *be confident to try new / different ideas *use cams, pulleys and gears to create movement
Technical knowledge - Textiles		*measure, cut and join textiles to make a product, with some support *choose suitable textiles	*measure textiles *join textiles together to make a product, and explain how I did it *carefully cut textiles to produce accurate pieces *explain choices of textile *understand that a 3D textile structure can be made from two identical fabric shapes.	*join different textiles in different ways *choose textiles considering appearance and functionality	*begin to understand that a simple fabric shape can be used to make a 3D textiles project *think about user when choosing textiles *think about how to make product strong * begin to devise a template *explain how to join things in a different way *understand that a simple fabric shape	*think about user and aesthetics when choosing textiles *use own template * think about how to make product strong and look better *think of a range of ways to join things *begin to understand that a single 3D textiles project can be made from a	*think about user's wants/needs and aesthetics when choosing textiles *make product attractive and strong *make a prototype *use a range of joining techniques *think about how product might be sold *think carefully about what would improve product *understand that a single 3D textiles

					can be used to make a 3D textiles project	combination of fabric shapes.	project can be made from a combination of fabric shapes.
<b>Technical knowledge – Food and nutrition</b>	<p>Begin to understand some food preparation tools, techniques and processes</p> <p>*Practise stirring, mixing, pouring, blending</p> <p>*Discuss how to make an activity safe and ygienic</p> <p>*Discuss use of senses</p> <p>*Understand need for variety in food</p> <p>*Begin to understand that eating</p>	<p>*describe textures</p> <p>*wash hands &amp; clean surfaces *think of interesting ways to decorate food</p> <p>*say where some foods come from, (i.e. plant or animal)</p> <p>*describe differences between some food groups (i.e. sweet, vegetable etc.)</p> <p>*discuss how fruit and vegetables are healthy</p> <p>*cut, peel and grate safely, with support</p>	<p>*explain hygiene and keep a hygienic kitchen</p> <p>*describe properties of ingredients and importance of varied diet</p> <p>*say where food comes from (animal, underground etc.)</p> <p>*describe how food is farmed, home-grown, caught</p> <p>*draw eat well plate; explain there are groups of food</p> <p>*describe “five a day”</p> <p>*cut, peel and grate with increasing confidence</p>	<p>carefully select ingredients</p> <p>*use equipment safely</p> <p>*make product look attractive</p> <p>*think about how to grow plants to use in cooking</p> <p>*begin to understand food comes from UK and wider world</p> <p>*describe how healthy diet= variety/balance of food/drinks</p> <p>*explain how food and drink are needed for active/healthy bodies.</p> <p>*prepare and cook some dishes safely and hygienically</p> <p>*grow in confidence using</p>	<p>explain how to be safe/hygienic</p> <p>*think about presenting product in interesting/ attractive ways</p> <p>*understand ingredients can be fresh, pre-cooked or processed</p> <p>*begin to understand about food being grown, reared or caught in the UK or wider world</p> <p>*describe eat well plate and how a healthy diet=variety / balance of food and drinks</p> <p>*explain importance of food and drink for active, healthy bodies</p> <p>*prepare and cook</p>	<p>explain how to be safe / hygienic and follow own guidelines</p> <p>*present product well - interesting, attractive, fit for purpose</p> <p>*begin to understand seasonality of foods</p> <p>*understand food can be grown, reared or caught in the UK and the wider world</p> <p>*describe how recipes can be adapted to change appearance, taste, texture, aroma</p> <p>*explain how there are different substances in food</p>	<p>understand a recipe can be adapted by adding / substituting ingredients</p> <p>*explain seasonality of foods</p> <p>*learn about food processing methods</p> <p>*name some types of food that are grown, reared or caught in the UK or wider world</p> <p>*adapt recipes to change appearance, taste, texture or aroma.</p> <p>*describe some of the different substances in food and drink, and how they can affect</p>

	well contributes to good health			some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	some dishes safely and hygienically *use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	/ drink needed for health *prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source * use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking	health *prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source. *use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.
<b>Technical knowledge – Electrical systems</b>				*use simple circuit in product *learn about how to program a computer to control product.	*use number of components in circuit *program a computer to control product	*incorporate switch into product *confidently use number of components in circuit *begin to be able to program a computer to monitor changes in environment and control product	*use different types of circuit in product * think of ways in which adding a circuit would improve product * program a computer to monitor changes in environment and control product