

## Rise Progression of Skills- Design and Technology

	EYFS	Year One	Year Two	End of KS expectations	Year Three	Year Four	Year Five	Year Six	End of KS expectations
<b>Design</b>	<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>* use knowledge of existing products to produce ideas</p>	<p>*Design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>*Generate, develop, model and communicate their ideas through talking, drawing, templates, mockups and, where appropriate, information and communication technology</p>	<p>*begin to research others' needs</p> <p>* show design meets a range of requirements</p> <p>* describe purpose of product</p> <p>* follow a given design criteria</p> <p>* have at least one idea about how to create product</p> <p>* create a plan which shows order, equipment and tools</p> <p>*describe design using an accurately labelled sketch and words</p> <p>* make design decisions</p> <p>*explain how product will work</p> <p>* make a prototype</p> <p>* begin to use computers to show design</p>	<p>* use research for design ideas</p> <p>* show design meets a range of requirements and is fit for purpose</p> <p>*begin to create own design criteria</p> <p>*have at least one idea about how to create product and suggest improvements for design.</p> <p>* produce a plan and explain it to others</p> <p>*say how realistic plan is.</p> <p>*include an annotated sketch</p> <p>*make and explain design decisions considering availability of resources</p> <p>*explain how product will work</p> <p>* make a prototype</p> <p>*begin to use computers to show design.</p>	<p>*use internet and questionnaires for research and design ideas</p> <p>*take a user's view into account when designing</p> <p>* begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose</p> <p>*create own design criteria</p> <p>* have a range of ideas</p> <p>*produce a logical, realistic plan and explain it to others.</p> <p>*use cross-sectional planning and annotated sketches</p> <p>* make design decisions considering time and resources.</p> <p>*clearly explain how parts of product will work.</p> <p>*model and refine design ideas by making prototypes and using pattern pieces.</p> <p>*use computer-aided designs</p>	<p>* draw on market research to inform design</p> <p>* use research of user's individual needs, wants, requirements for design</p> <p>* identify features of design that will appeal to the intended user</p> <p>* create own design criteria and specification</p> <p>* come up with innovative design ideas</p> <p>*follow and refine a logical plan.</p> <p>*use annotated sketches, crosssectional planning and exploded diagrams</p> <p>* make design decisions, considering, resources and cost</p> <p>* clearly explain how parts of design will work, and how they are fit for purpose</p> <p>* independently model and refine design ideas by making prototypes and using pattern pieces</p> <p>* use computer-aided designs</p>	<p><i>*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</i></p> <p><i>*Generate, develop, model and communicate their ideas through discussion, annotated sketches, crosssectional and exploded diagrams, prototypes, pattern pieces and computeraided design</i></p>
<b>Make</b>	<p>*Construct with a purpose, using a variety of resources</p> <p>*Use simple tools and techniques</p> <p>*Build / construct with a wide range of objects</p> <p>*Select tools &amp; techniques to shape, assemble and join</p> <p>*Replicate structures with materials / components</p> <p>*Discuss how to make an activity safe and hygienic</p> <p>*Record experiences by drawing, writing, voice recording</p> <p>*Understand different media can be combined for a purpose</p>	<p>*explain what I'm making and why</p> <p>*consider what I need to do next</p> <p>*select tools/equipment to cut, shape, join, finish and explain choices</p> <p>*measure, mark out, cut and shape, with support</p> <p>*choose suitable materials and explain choices</p> <p>*try to use finishing techniques to make product look good</p> <p>*work in a safe and hygienic manner</p>	<p>*explain what I am making and why it fits the purpose</p> <p>*make suggestions as to what I need to do next.</p> <p>*join materials/components together in different ways</p> <p>*measure, mark out, cut and shape materials and components, with support.</p> <p>*describe which tools I'm using and why</p> <p>*choose suitable materials and explain choices depending on characteristics.</p> <p>*use finishing techniques to make product look good</p> <p>*work safely and hygienically</p>	<p>*Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</p> <p>*Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p>	<p>*select suitable tools/equipment, explain choices; begin to use them accurately</p> <p>* select appropriate materials, fit for purpose.</p> <p>* work through plan in order</p> <p>*consider how good product will be</p> <p>* begin to measure, mark out, cut and shape materials/components with some accuracy</p> <p>* begin to assemble, join and combine materials and components with some accuracy</p> <p>* begin to apply a range of finishing techniques with some accuracy</p>	<p>* select suitable tools and equipment, explain choices in relation to required techniques and use accurately</p> <p>*select appropriate materials, fit for purpose; explain choices</p> <p>* work through plan in order.</p> <p>* realise if product is going to be good quality</p> <p>* measure, mark out, cut and shape materials/components with some accuracy</p> <p>*assemble, join and combine materials and components with some accuracy</p> <p>*apply a range of finishing techniques with some accuracy</p>	<p>* use selected tools/equipment with good level of precision</p> <p>* produce suitable lists of tools, equipment/materials needed</p> <p>*select appropriate materials, fit for purpose; explain choices, considering functionality</p> <p>* create and follow detailed step-by-step plan</p> <p>* explain how product will appeal to an audience</p> <p>* mainly accurately measure, mark out, cut and shape materials/components</p> <p>*mainly accurately assemble, join and combine materials/components</p> <p>* mainly accurately apply a range of finishing techniques</p> <p>* use techniques that involve a small number of steps</p> <p>* begin to be resourceful with practical problems</p>	<p>* use selected tools and equipment precisely</p> <p>*produce suitable lists of tools, equipment, materials needed, considering constraints</p> <p>* select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics</p> <p>* create, follow, and adapt detailed step-by-step plans</p> <p>*explain how product will appeal to audience; make changes to improve quality</p> <p>* accurately measure, mark out, cut and shape materials/components</p> <p>* accurately assemble, join and combine materials/components</p> <p>* accurately apply a range of finishing techniques</p> <p>* use techniques that involve a number of steps</p> <p>* be resourceful with practical problems</p>	<p><i>*Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</i></p> <p><i>*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</i></p>

## Rise Progression of Skills- Design and Technology

<b>Evaluate</b>	<ul style="list-style-type: none"> <li>*Adapt work if necessary</li> <li>*Dismantle, examine, talk about existing objects/structures</li> <li>*Consider and manage some risks</li> <li>*Practise some appropriate safety measures independently</li> <li>*Talk about how things work</li> <li>*Look at similarities and differences between existing objects / materials / tools</li> <li>*Show an interest in technological toys</li> <li>*Describe textures</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: use, materials, how they work, audience, where they might be used</li> <li>*talk about existing products, and say what is and isn't good</li> <li>* talk about things that other people have made</li> <li>*begin to talk about what could make product better</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, materials, how they work, audience, where they might be used; express personal opinion</li> <li>*evaluate how good existing products are</li> <li>*talk about what I would do differently if I were to do it again and why</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>* look at design criteria while designing and making</li> <li>*use design criteria to evaluate finished product</li> <li>* say what I would change to make design better</li> <li>*begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose</li> <li>* begin to understand by whom, when and where products were designed</li> <li>* learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products</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> <li>* begin to explain how I could improve original design</li> <li>*evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose</li> <li>* discuss by whom, when and where products were designed</li> <li>* research whether products can be recycled or reused</li> <li>* know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products</li> </ul>	<ul style="list-style-type: none"> <li>*evaluate quality of design while designing and making</li> <li>*evaluate ideas and finished product against specification, considering purpose and appearance.</li> <li>*test and evaluate final product</li> <li>* evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose</li> <li>* begin to evaluate how much products cost to make and how innovative they are</li> <li>*research how sustainable materials are</li> <li>*talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products</li> </ul>	<ul style="list-style-type: none"> <li>*evaluate quality of design while designing and making; is it fit for purpose?</li> <li>* keep checking design is best it can be.</li> <li>*evaluate ideas and finished product against specification, stating if it's fit for purpose</li> <li>*test and evaluate final product; explain what would improve it and the effect different resources may have had</li> <li>*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</li> <li>*evaluate how much products cost to make and how innovative they are</li> <li>*research and discuss how sustainable materials are</li> <li>*consider the impact of products beyond their intended purpose</li> <li>*discuss some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products</li> </ul>	<ul style="list-style-type: none"> <li>*Investigate and analyse a range of existing products.</li> <li>*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>
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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>*Build structures, exploring how they can be made stronger, stiffer and more stable</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> <li>*make a strong, stiff structure</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 and strengthen a 3D frame</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>	<ul style="list-style-type: none"> <li>*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul>
<b>Technical knowledge - Mechanisms</b>	<ul style="list-style-type: none"> <li>*begin to use levers or slides</li> </ul>	<ul style="list-style-type: none"> <li>*use levers or slides</li> <li>*begin to understand how to use wheels and axles</li> </ul>	<ul style="list-style-type: none"> <li>*Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<ul style="list-style-type: none"> <li>*select appropriate tools / techniques</li> <li>*alter product after checking, to make it better</li> <li>*begin to try new/different ideas</li> <li>*use simple lever and linkages to create movement</li> </ul>	<ul style="list-style-type: none"> <li>*select most appropriate tools / techniques</li> <li>*explain alterations to product after checking it</li> <li>*grow in confidence about trying new / different ideas.</li> <li>*use levers and linkages to create movement</li> <li>*use pneumatics to create movement</li> </ul>	<ul style="list-style-type: none"> <li>*refine product after testing</li> <li>*grow in confidence about trying new / different ideas</li> <li>*begin to use cams, pulleys or gears to create movement</li> </ul>	<ul style="list-style-type: none"> <li>*refine product after testing, considering aesthetics, functionality and purpose</li> <li>*incorporate hydraulics and pneumatics</li> <li>*be confident to try new / different ideas</li> <li>*use cams, pulleys and gears to create movement</li> </ul>	<ul style="list-style-type: none"> <li>*Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>
<b>Technical knowledge - Textiles</b>	<ul style="list-style-type: none"> <li>*measure, cut and join textiles to make a product, with some support</li> <li>*choose suitable textiles</li> </ul>	<ul style="list-style-type: none"> <li>*measure textiles</li> <li>*join textiles together to make a product, and explain how I did it</li> <li>*carefully cut textiles to produce accurate pieces</li> <li>*explain choices of textile</li> <li>*understand that a 3D textile structure can be made from two identical fabric shapes.</li> </ul>	<ul style="list-style-type: none"> <li>*Join different textiles in different ways</li> <li>*choose textiles considering appearance and functionality</li> <li>*begin to understand that a simple fabric shape can be used to make a 3D textiles project</li> </ul>	<ul style="list-style-type: none"> <li>*think about user when choosing textiles</li> <li>*think about how to make product strong</li> <li>* begin to devise a template</li> <li>*explain how to join things in a different way</li> <li>*understand that a simple fabric shape can be used to make a 3D textiles project</li> </ul>	<ul style="list-style-type: none"> <li>*think about user and aesthetics when choosing textiles</li> <li>*use own template</li> <li>* think about how to make product strong and look better</li> <li>*think of a range of ways to join things</li> <li>*begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.</li> </ul>	<ul style="list-style-type: none"> <li>*think about user's wants/needs and aesthetics when choosing textiles</li> <li>*make product attractive and strong</li> <li>*make a prototype</li> <li>*use a range of joining techniques</li> <li>*think about how product might be sold</li> <li>*think carefully about what would improve product</li> <li>*understand that a single 3D textiles project can be made from a combination of fabric shapes.</li> </ul>		

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<p><b>Technical knowledge - Food and nutrition</b></p>	<p>*Begin to understand some food preparation tools, techniques and processes *Practise stirring, mixing, pouring, blending *Discuss how to make an activity safe and hygienic *Discuss use of senses *Understand need for variety in food *Begin to understand that eating well contributes to good health</p>	<p>*describe textures *wash hands &amp; clean surfaces *think of interesting ways to decorate food *say where some foods come from, (i.e. plant or animal) *describe differences between some food groups (i.e. sweet, vegetable etc.) *discuss how fruit and vegetables are healthy *cut, peel and grate safely, with support</p>	<p>*explain hygiene and keep a hygienic kitchen *describe properties of ingredients and importance of varied diet *say where food comes from (animal, underground etc.) *describe how food is farmed, home-grown, caught *draw eat well plate; explain there are groups of food *describe "five a day" *cut, peel and grate with increasing confidence</p>	<p>*Use the basic principles of a healthy and varied diet to prepare dishes  *Understand where food comes from.</p>	<p>*carefully select ingredients *use equipment safely *make product look attractive *think about how to grow plants to use in cooking *begin to understand food comes from UK and wider world *describe how healthy diet= variety/balance of food/drinks *explain how food and drink are needed for active/healthy bodies. *prepare and cook some dishes safely and hygienically  *grow in confidence using some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p>	<p>*explain how to be safe/hygienic *think about presenting product in interesting/attractive ways *understand ingredients can be fresh, pre-cooked or processed *begin to understand about food being grown, reared or caught in the UK or wider world *describe eat well plate and how a healthy diet=variety / balance of food and drinks *explain importance of food and drink for active, healthy bodies *prepare and cook some dishes safely and hygienically  *use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p>	<p>*explain how to be safe / hygienic and follow own guidelines *present product well - interesting, attractive, fit for purpose *begin to understand seasonality of foods *understand food can be grown, reared or caught in the UK and the wider world *describe how recipes can be adapted to change appearance, taste, texture, aroma *explain how there are different substances in food / 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.</p>	<p>*understand a recipe can be adapted by adding / substituting ingredients *explain seasonality of foods *learn about food processing methods *name some types of food that are grown, reared or caught in the UK or wider world *adapt recipes to change appearance, taste, texture or aroma. *describe some of the different substances in food and drink, and how they can affect 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.</p>	<p><i>*Understand and apply the principles of a healthy and varied diet</i>  <i>*Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</i>  <i>*Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</i></p>
<p><b>Technical knowledge - Electrical systems</b></p>					<p>*use simple circuit in product *learn about how to program a computer to control product.</p>	<p>*use number of components in circuit *program a computer to control product</p>	<p>*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</p>	<p>*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</p>	<p><i>*Understand and use electrical systems in their products [for example, series circuits</i></p>

