



Laughton Junior & Infant School

Learning together, achieving together



DT Skills Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	Design					
KS1 *Design purposeful, functional, appealing products for themselves and other users based on design criteria *Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology *Select from and use a range of tools and equipment to perform practical tasks [for example, 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 characteristics *Explore and evaluate a range of existing products *Evaluate their ideas and products against design criteria	* have own ideas * explain what I want to do *explain what my product is for, and how it will work * use pictures and words to plan, begin to use models * design a product for myself following design criteria *research similar existing products	* have own ideas and plan what to do next * explain what I want to do and describe how I may do it * explain purpose of product, how it will work and how it will be suitable for the user * describe design using pictures, words, models, diagrams, begin to use ICT * design products for myself and others following design criteria * choose best tools and materials, and explain choices * use knowledge of existing products to produce ideas	*begin to research others' needs * show design meets a range of requirements * describe purpose of product * follow a given design criteria * have at least one idea about how to create product * 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 * begin to use computers to show design	* 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 * make a prototype *begin to use computers to show design.	*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 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	* 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, 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

Make						
<p>KS2</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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</i></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> <p><i>*Investigate and analyse a range of existing products.</i></p> <p><i>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</i></p> <p><i>*Understand how key events and individuals in design and technology have helped</i></p>	<p><i>*explain what I'm making and why</i></p> <p><i>*consider what I need to do next</i></p> <p><i>*select tools/equipment to cut, shape, join, finish and explain choices</i></p> <p><i>*measure, mark out, cut and shape, with support</i></p> <p><i>*choose suitable materials and explain choices</i></p> <p><i>*try to use finishing techniques to make product look good</i></p> <p><i>*work in a safe and hygienic manner</i></p>	<p><i>*explain what I am making and why it fits the purpose</i></p> <p><i>*make suggestions as to what I need to do next.</i></p> <p><i>*join materials/components together in different ways</i></p> <p><i>*measure, mark out, cut and shape materials and components, with support.</i></p> <p><i>*describe which tools I'm using and why</i></p> <p><i>*choose suitable materials and explain choices depending on characteristics.</i></p> <p><i>*use finishing techniques to make product look good</i></p> <p><i>*work safely and hygienically</i></p>	<p><i>*select suitable tools/equipment, explain choices; begin to use them accurately</i></p> <p><i>* select appropriate materials, fit for purpose.</i></p> <p><i>* work through plan in order</i></p> <p><i>*consider how good product will be</i></p> <p><i>* begin to measure, mark out, cut and shape materials/components with some accuracy</i></p> <p><i>* begin to assemble, join and combine materials and components with some accuracy</i></p> <p><i>* begin to apply a range of finishing techniques with</i></p>	<p><i>* select suitable tools and equipment, explain choices in relation to required techniques and use accurately</i></p> <p><i>*select appropriate materials, fit for purpose; explain choices</i></p> <p><i>* work through plan in order.</i></p> <p><i>* realise if product is going to be good quality</i></p> <p><i>* measure, mark out, cut and shape materials/components with some accuracy</i></p> <p><i>*assemble, join and combine materials and components with some accuracy</i></p> <p><i>*apply a range of finishing techniques with some accuracy</i></p>	<p><i>* use selected tools/equipment with good level of precision</i></p> <p><i>* produce suitable lists of tools, equipment/materials needed</i></p> <p><i>*select appropriate materials, fit for purpose; explain choices, considering functionality</i></p> <p><i>* create and follow detailed step-by-step plan</i></p> <p><i>* explain how product will appeal to an audience</i></p> <p><i>* mainly accurately measure, mark out, cut and shape materials/components</i></p> <p><i>*mainly accurately assemble, join and combine materials/components</i></p> <p><i>* mainly accurately apply a range of finishing techniques</i></p> <p><i>* use techniques that involve a small number of steps</i></p> <p><i>* begin to be resourceful with practical problems</i></p>	<p><i>* use selected tools and equipment precisely</i></p> <p><i>*produce suitable lists of tools, equipment, materials needed, considering constraints</i></p> <p><i>* select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics</i></p> <p><i>* create, follow, and adapt detailed step-by-step plans</i></p> <p><i>*explain how product will appeal to audience; make changes to improve quality</i></p> <p><i>* accurately measure, mark out, cut and shape materials/components</i></p> <p><i>* accurately assemble, join and combine materials/components</i></p> <p><i>* accurately apply a range of finishing techniques</i></p> <p><i>* use techniques that involve a number of steps</i></p> <p><i>* be resourceful with practical problems</i></p>

Evaluate						
	<ul style="list-style-type: none"> *talk about my work, linking it to what I was asked to do * talk about existing products considering: 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 	<ul style="list-style-type: none"> * describe what went well, thinking about design criteria * talk about existing products considering: use, 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 	<ul style="list-style-type: none"> * look at design criteria while designing and making *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 ground-breaking projects. 	<ul style="list-style-type: none"> *refer to design criteria while designing and making *use criteria to evaluate product * 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 	<ul style="list-style-type: none"> evaluate quality of design while designing and making *evaluate ideas and finished 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 	<ul style="list-style-type: none"> *evaluate quality of design while designing and making; is it fit for purpose? * 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 *research and discuss how sustainable materials are *consider the impact of products beyond their intended purpose *discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products
Technical Knowledge – Materials/Structures						

<p>KS1</p> <p>*Build structures, exploring how they can be made stronger, stiffer and more stable</p> <p>KS2</p> <p>*Apply their understanding of how to strengthen, stiffen and reinforce more <i>complex structures</i></p>	<p>*begin to measure and join materials, with some support</p> <p>*describe differences in materials</p> <p>*suggest ways to make material/product stronger</p>	<p>*measure materials</p> <p>*describe some different characteristics of materials</p> <p>*join materials in different ways</p> <p>*use joining, rolling or folding to make it stronger</p> <p>*use own ideas to try to make product stronger</p>	<p>*use appropriate materials</p> <p>*work accurately to make cuts and holes</p> <p>*join materials</p> <p>*begin to make strong structures</p>	<p>*measure carefully to avoid mistakes</p> <p>*attempt to make product strong</p> <p>*continue working on product even if original didn't work</p> <p>*make a strong, stiff structure</p>	<p>*select materials carefully, considering intended use of product and appearance</p> <p>*explain how product meets design criteria</p> <p>*measure accurately enough to ensure precision</p> <p>*ensure product is strong and fit for purpose</p> <p>*begin to reinforce</p>	<p>select materials carefully, considering intended use of the product, the aesthetics and functionality.</p> <p>*explain how product meets design criteria</p> <p>*reinforce and strengthen a 3D frame</p>
Technical Knowledge - Mechanisms						
<p>KS1</p> <p>*Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>KS2</p> <p>*Understand and use mechanical systems in their products [for example, <i>gears, pulleys, cams</i>, levers and <i>linkages</i>]</p>	<p>*begin to use levers or slides</p>	<p>*use levers or slides</p> <p>*begin to understand how to use wheels and axles</p>	<p>*select appropriate tools / techniques</p> <p>*alter product after checking, to make it better</p> <p>*begin to try new/different ideas</p> <p>*use simple lever and</p>	<p>*select most appropriate tools / techniques</p> <p>*explain alterations to product after checking it</p> <p>*grow in confidence about trying new / different ideas.</p> <p>*use levers and linkages to create movement</p> <p>*use pneumatics</p>	<p>*refine product after testing</p> <p>*grow in confidence about trying new / different ideas</p> <p>*begin to use cams, pulleys or gears to create movement</p>	<p>*refine product after testing, considering aesthetics, functionality and purpose</p> <p>*incorporate hydraulics and pneumatics</p> <p>*be confident to try new / different ideas</p> <p>*use cams, pulleys and gears to create movement</p>
Technical Knowledge - Textiles						
	<p>*measure, cut and join textiles to make a product, with some support</p> <p>*choose suitable textiles</p>	<p>*measure textiles</p> <p>*join textiles together to make a product, and explain how I did it</p> <p>*carefully cut textiles to produce accurate pieces</p> <p>*explain choices of textile</p> <p>*understand that a 3D textile structure can be made from two identical fabric shapes.</p>	<p>*join different textiles in different ways</p> <p>*choose textiles considering appearance and functionality</p> <p>*begin to understand that a simple fabric shape can be used to make a 3D textiles project</p>	<p>*think about user when choosing textiles</p> <p>*think about how to make product strong</p> <p>*begin to devise a template</p> <p>*explain how to join things in a different way</p> <p>*understand that a simple fabric shape can be used to make a 3D textiles project</p>	<p>*think about user and aesthetics when choosing textiles</p> <p>*use own template</p> <p>*think about how to make product strong and look better</p> <p>*think of a range of ways to join things</p> <p>*begin to understand that a single 3D textiles project can be made from a combination of fabric shapes.</p>	<p>*think about user's wants/needs and aesthetics when choosing textiles</p> <p>*make product attractive and strong</p> <p>*make a prototype</p> <p>*use a range of joining techniques</p> <p>*think about how product might be sold</p> <p>*think carefully about what would improve product</p> <p>*understand that a single 3D textiles project can be made from a combination of fabric shapes.</p>
Technical Knowledge – Food and Nutrition						
<p>KS1</p> <p>*Use the basic principles of a healthy and varied diet to prepare dishes</p> <p>*Understand where food comes from.</p> <p>KS2</p>	<p>*describe textures</p> <p>*wash hands & clean surfaces</p> <p>*think of interesting ways to decorate food</p> <p>*say where some foods come from,</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>*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>*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>*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 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</p>

<p><i>*Understand and apply the principles of a healthy and varied diet</i></p> <p><i>*Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</i></p> <p><i>*Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</i></p>	<p>(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</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>*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 some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading</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 some dishes safely and hygienically</p> <p>*use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</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 / drink needed for health</p> <p>*prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source</p> <p>* use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading,</p>	<p>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 health</p> <p>*prepare and cook a variety of savoury dishes safely and hygienically including, where appropriate, the use of heat source.</p> <p>*use a range of techniques confidently such as peeling, chopping, slicing, grating, mixing,</p>
<p>Technical Knowledge – Electrical systems</p>						
<p>KS2</p> <p><i>*Understand and use electrical systems in their products [for example, series circuits</i></p>			<p>*use simple circuit in product</p> <p>*learn about how to program a computer to control product.</p>	<p>*use number of components in circuit</p> <p>*program a computer to control product</p>	<p>*incorporate switch into product</p> <p>*confidently use number of components in circuit</p> <p>*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</p> <p>* think of ways in which adding a circuit would improve product</p> <p>* program a computer to monitor changes in environment and control product</p>