Curriculum Objectives to be completed by end of year DT

Design and Technology Progression Map

<table>
<tr><th colspan="6">DT Technical Knowledge- Cooking and Nutrition</th></tr>
<tr><td colspan="2">-Use the basic principles of a healthy and varied diet to prepare dishes
-Understand where food comes from</td><td colspan="4">-Understand and apply the principles of a healthy and varied diet
-Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
-Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</td></tr>
<tr><td>Year 1</td><td>Year 2</td><td>Year 3</td><td>Year 4</td><td>Year 5</td><td>Year 6</td></tr>
<tr>
<td>● describe textures
● wash hands & 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
● describe “five a day”</td>
<td>● Understanding the basic principles of a healthy and varied diet is covered in Science</td>
<td>● carefully select ingredients
● use equipment safely
● 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
● say where food comes from (animal, underground etc.)</td>
<td>● Understanding and applying the principles of a healthy and varied diet is covered in Science</td>
<td>● 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
● understand a recipe can be adapted by adding / substituting ingredients
● describe eat well plate and how a healthy diet=variety / balance of food and drinks
● 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.</td>
<td>● Understanding and applying the principles of a healthy and varied diet is covered in Science</td>
</tr>
<tr><th colspan="6">DT Technical Knowledge- Structures</th></tr>
</table>

Curriculum Objectives to be completed by end of year DT

Build structures, exploring how they can be made stronger, stiffer and more stable		*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures*			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• begin to measure and join materials, with some support • describe differences in materials • suggest ways to make material/product stronger	• measure materials • describe some different characteristics of materials • join materials in different ways • use joining, rolling or folding to make it stronger • use own ideas to try to make product stronger	• use appropriate materials • work accurately to make cuts and holes • join materials • begin to make strong structures	• measure carefully to avoid mistakes • attempt to make product strong • continue working on product even if original didn't work • make a strong, stiff structure	• select materials carefully, considering intended use of product and appearance • explain how product meets design criteria • measure accurately enough to ensure precision • ensure product is strong and fit for purpose • begin to reinforce and strengthen a 3D frame	• select materials carefully, considering intended use of the product, the aesthetics and functionality. • explain how product meets design criteria • reinforce and strengthen a 3D frame

DT Technical Knowledge-Mechanical Systems					
-Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.		*-Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]*			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• begin to understand how to use wheels and axles	• 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 • refine product after testing • grow in confidence about trying new / different ideas • Use cams, wheels, axels, pulleys or gears to create movement	

Curriculum Objectives to be completed by end of year DT

		● begin to use pneumatics to create movement		● Name components such as chassis, axel et	
DT Technical Knowledge-Electrical Systems					
		Understand and use electrical systems in their products (for example, series circuits)			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		● Learn about static electricity and how it moves objects through attraction or repulsion *(objective covered in Mechanisms Pneumatic toys unit)*	● use number of components in circuit ● Know about electrical items and how they work ● Know what a series circuit is ● create a circuit with a switch		● create and use electric circuits in their designs ● Know how to make electromagnetic motors
DT Technical Knowledge-textiles					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	● To know how to join fabric by pinning, stapling or gluing ● join textiles together with a running stitch to make a product, and explain how I did it ● carefully cut textiles to produce accurate pieces ● explain choices of textile		● think about user when choosing textiles ● choose textiles considering appearance and functionality ● think about how to make product strong ● begin to devise a template ● explain how to join things in a different way		● 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

Curriculum Objectives to be completed by end of year DT

	• understand that a 3D textile structure can be made from two identical fabric shapes		• understand that a simple fabric shape can be used to make a 3D textiles project		• think carefully about what would improve product • understand that a single 3D textiles project can be made from a combination of fabric shapes.
DT- Design					
-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*		*-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* *-Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design*			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• have own ideas • explain what they want to do • explain what their product is for, and how it will work • use pictures and words to plan, begin to use models • design a product for themselves following design criteria • research similar existing products	• have own ideas and plan what to do next • explain what they want to do and describe how they 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	• 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	• 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.	• 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	• 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.

Curriculum Objectives to be completed by end of year DT

	• choose best tools and materials, and explain choices • use knowledge of existing products to produce ideas	• explain how product will work • make a prototype • begin to use computers to show design	• 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.	• 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	• 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
DT Make					
-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*		*Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately* *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*			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• 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. • describe which tools I'm using and why • choose suitable materials and explain choices depending on characteristics. • use finishing techniques to make product look good	• 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, join and combine materials and	• 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 materials/components with some accuracy	• 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 appeal to an audience • mainly accurately measure, mark out, cut and shape materials/components • mainly accurately assemble, join and combine materials/components	• 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 • create, follow, and adapt detailed step-by-step plans • explain how product will appeal to audience; make changes to improve quality

Curriculum Objectives to be completed by end of year DT

• work in a safe and hygienic manner	• work safely and hygienically	components with some accuracy • begin to apply a range of finishing techniques with some accuracy	• assemble, join and combine materials and components with some accuracy • apply a range of finishing techniques with some accuracy	• mainly accurately apply a range of finishing techniques • use techniques that involve a small number of steps • begin to be resourceful with practical problems	• accurately measure, mark out, cut and shape materials/components • accurately assemble, join and combine materials/components • accurately apply a range of finishing techniques • use techniques that involve a number of steps • be resourceful with practical problems
DT Evaluate					
-Explore and evaluate a range of existing products *-Evaluate their ideas and products against design criteria*		*-Investigate and analyse a range of existing products.* *-Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.* *-Understand how key events and individuals in design and technology have helped shape the world*			
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• talk about their work, linking it to what they were 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	• 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	• 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	• 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	• 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	• 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

Curriculum Objectives to be completed by end of year DT

• begin to talk about what could make product better		• begin to understand by whom, when and where products were designed • learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products	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	• 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 ground-breaking products	• 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