Design Technology Skills Progression –Key Stage 2

Key Skills	Year 3 Implementation	Year 4 Implementation	Year 5 Implementation	Year 6 Implementation	Impact
Design	*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	*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

Make	*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 components with some accuracy * begin to apply a range of finishing techniques with some accuracy	* 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 *assemble, join and combine materials and components with some accuracy *apply a range of finishing techniques 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 * mainly accurately apply a range of finishing techniques * use techniques that involve a small number of steps * begin to be resourceful with practical problems	* 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 * 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	*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*

Evaluate	* 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 products	*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	*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 ground-breaking products	*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	**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*

Technical knowledge – food & nutrition	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	*Apply their understanding of how to strengthen, stiffen and reinforce more *complex structures*
Technical Knowledge – Material structures	*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	**Understand* and use mechanical systems in their products [for example, *gears, pulleys, cams,* levers and *linkages*]
Technical knowledge - Mechanism	*****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 can be used to make a 3D textiles project	*****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 combination of fabric shapes.	*****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 project can be made from a combination of fabric shapes.	

Technical knowledge - Textiles	*****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	*****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	*****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.	*****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.	*****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.*
Technical knowledge Electrical systems	*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	**Understand and use electrical systems in their products [for example, series circuits*