HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	KS1	LKS2	UKS2
Design	**KS1 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts such as; the home, garden, school and wider environment. Children can; a Design purposeful, functional, appealing products for themselves and other users based on design criteria. b Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment). Children can; a 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. b Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. **In early KS2 pupils should also:** • Gather information about the needs and wants of particular individuals and groups • Develop their own design criteria and use these to inform their ideas.	**KS2 Design and Technology National Curriculum** Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of contexts (for example, the home, school, leisure, culture, enterprise, industry and the wider environment). Children can; a 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. b Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. **In late KS2 pupils should also:** • Carry out research, using surveys, interviews, questionnaires and wed-based resources • Identify the needs, wants, preferences and values of particular individuals and groups. • Develop a simple design specification to guide their thinking.

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	KS1	LKS2	UKS2
Make	**KS1 Design and Technology National Curriculum** Children can; a Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) b Select from and use a wide range of materials and compoments, including construction materials, textiles and ingredients, according to their characteristics	**KS2 Design and Technology National Curriculum** Children can; a Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately b 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 **In early KS2 pupils should also:** •Order the main stages of making.	**KS2 Design and Technology National Curriculum** Children can; a Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately b 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 **In late KS2 pupils should also:** • Produce appropriate lists of tools, equipment and materials that they need. • Formulate step-by-step plans as a guide to making.

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	KS1	LKS2	UKS2
Evaluate	**KS1 Design and Technology National Curriculum** Children can; a Explore and evaluate a range of existing products b Evaluate their ideas and products against a design criteria	**KS2 Design and Technology National Curriculum** Children can; a) Investigate and analyse a range of existing products b) Evaluate their ideas and products against their own design criteria and consider the views of others work c) Understand how key events and individuals in design and technology have helped shape the world **In early KS2 pupils should also:** • Refer to their design criteria as they design and make • Use their design criteria to evaluate their completed products	**KS2 Design and Technology National Curriculum** Children can; d) Investigate and analyse a range of existing products e) Evaluate their ideas and products against their own design criteria and consider the views of others work f) Understand how key events and individuals in design and technology have helped shape the world **In late KS2 pupils should also:** • Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. • Evaluate their product against their original design specification.

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	KS1 Design and Technology National Curriculum	KS2 Design and Technology National Curriculum	KS2 Design and Technology National Curriculum
Technical Knowledge	Children can; a Build structures, exploring how they can be made stronger, stiffer and more stable b Explore and use mechanisms (for example levers, sliders, wheels, axles), in their products	Children can; a Apply their understanding of how to strengthen, stiffen and reinforce more complex structures b Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages) c Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) d Apply their understanding of computing to program, monitor and control their products. **In early KS2 pupils should also:** • Know how simple electrical circuits and components can be used to create functional products. • Know how to program a computer to control their products. • Know how mechanical systems such as levers and linkages or pneumatic systems create movement. • Know how to make string, stiff structures.	Children can; e Apply their understanding of how to strengthen, stiffen and reinforce more complex structures f Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages) g Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) Apply their understanding of computing to program, monitor and control their products. **In late KS2 pupils should also:** • Know how more complex electrical circuits and components can be used to create functional products. • Know how to program a computer to monitor changes in the environment and control their products. • Know how mechanical systems such as cams, pulleys or gears create movement. • Know how to reinforce and strengthen a 3D framework

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	KS1 Design and Technology National Curriculum	KS2 Design and Technology National Curriculum	KS2 Design and Technology National Curriculum
Cooking and nutrition	Children can; a Use the basic principles of a healthy and varies diet to prepare dishes b Understand	Children can; a Understand and apply the principles of a healthy and varied diet b Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques c Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **In early KS2 pupils should also:** • Know that a healthy diet is made up from a variety and balance of different food and drink. • That to be active and healthy, food and drink are needed to provide energy for the body.	Children can; a Understand and apply the principles of a healthy and varied diet b Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques c Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **In late KS2 pupils should also:** • That recipes can be adapted to change the appearance, taste, texture and aroma. • That different food and drink contain different substances, nutrients, water and fibre that are needed for our health.

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

SKILL	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Generating ideas – Designing	Create simple designs for a product. Use pictures and words to describe what he/she wants to do. Research similar existing products	Design purposeful, functional, appealing products for self and other users based on design criteria. Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. 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. Create a plan which shows order, equipment and tools Describe design using an accurately labelled sketch and words. 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. Produce a plan and explain it to others, 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. 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 and 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	Explain what I'm making and why. Consider what I need to do next.	Explain what I am making and why it fits the purpose.	Select suitable tools/equipment, explain choices; begin to use them accurately.	Select suitable tools and equipment; explain choices in relation to required techniques and use accurately.	Use selected tools/equipment with good level of precision. Produce suitable lists of tools, equipment/materials needed.	Use selected tools and equipment precisely. Produce suitable lists of tools, equipment, materials

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	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.	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 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 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.	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.	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
Evaluate	Talk about my work, linking it to what I was asked to do. 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	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. Talk about what I would do differently if I were to do it again and why.	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.	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.	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. 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

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

			Begin to understand by whom, when and where products were designed	Begin to know about some inventors/designers/ engineers/chefs/manufacturers.	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.	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.
Technical Knowledge - Structures	Begin to measure and join materials, with some support. Describe differences in materials. Suggest ways to make material/product stronger		use appropriate materials. Work accurately to make cuts and holes. Join materials. Begin to make strong structures		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	
Technical Knowledge- Mechanisms.	Begin to use sliders or levers in a product	Use levers or sliders. Begin to understand how to use wheels and axles		Select most appropriate tools / techniques. Explain alterations to product after checking it .	Refine product after testing. Begin to use cams, pulleys or gears to create movement	

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

				Use levers and linkages to create movement. Use pneumatics to create movement		
Technical Knowledge- 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'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- Electrical systems				Use number of components in circuit. Learn about how to program a computer to 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
Food preparation, cooking and nutrition	Describe textures.	Explain hygiene and keep a hygienic kitchen.	Use equipment safely.	Explain how to be safe/hygienic.	Explain how to be safe / hygienic and follow own guidelines.	Understand a recipe can be adapted by adding / substituting ingredients.

HIGH HESKET C of E SCHOOL (VC)

Design & Technology Progression of Skills Document

	Wash hands & clean surfaces. 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 and become familiar with The eatwell plate. Cut, peel and grate safely, with support	Describe properties of ingredients and importance of varied diet including how fruit and vegetables are part of The eatwell plate. Say where food comes from (animal, underground etc.) Cut, peel and grate with increasing confidence	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.	Think about presenting product in interesting/ attractive ways Understand ingredients can be fresh 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.	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.	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.