Design and Technology Progression Map

KS1

Design		Make	Evaluate	Technical Knowledge
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	build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Year 1	Design and make purposeful and functional products. Use pictures and words to convey what they want to design and make. Describe and explain what they are making, how it works and what they need to do next.	Name the tools you are using. .Use given tools for a variety of tasks e.g. Knife, grater, chopping board, scissors, needles, pins, scissors, templates, glue, tape. .Join appropriately for different materials and situations. **.**Explore ideas by rearranging materials e.g. paper, card, ingredients, fabrics, sequins, buttons, tubes, dowel, cotton reels, paper, card, mouldable materials. materials and situations.	Explore existing products. Say what they like and do not like about products they have made. Consider and explain how the finished product could be improved.	Build structures and investigate how they can be made more stable. Create models with wheels and axels. Insert paper fasteners for card linkages.

Year 2	Design and make purposeful, functional and appealing products. Use drawings with notes to record ideas as they are developed. Discuss their work as it progresses.	Select and name the tools needed to work the materials. E.g. spoons, cups, needles, yarn, scissors, saws, drills. Select materials from a limited range to meet design criteria.	Explore and evaluate existing products. Talk about their developing designs and identify good points and areas to improve throughout the design process. Evaluate their product and its appearance against a design criteria.	Build structures and investigate how they can be made stronger, stiffer and more stable. Use a range of materials to create models with wheels, axels or hinges. Investigate temporary, fixed and moving joining's.

LKS2				
Design		**Make**	**Evaluate**	**Technical Knowledge**
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		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	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	.apply their understanding of how to strengthen, stiffen and reinforce more complex structures .understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] .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.
Year 3	Use research to develop the design of functional and appealing products. Record plan by drawing labeled sketches or writing and discuss this while working.	Think ahead about the order of their work and plan tools and materials needed. E.g. Weighing scales, glue gun, ruler. Consider working characteristics of materials.	Investigate and analyse a range of existing products. Identify strengths and areas to improve in their own design. Identify what does and does not work in the product.	Create shell or frame structures and make structures more stable. Join and combine materials with temporary, fixed or moving joining. Incorporate a circuit with a bulb or buzzer into a model.

Year 4	Use research and develop design criteria to design functional and appealing products that are fit for purpose. Consider different ways in which they can creatively record their planning to engage an audience.	Use tools and equipment, including those needed to weigh and measure ingredients, with accuracy. Join and combine a range of materials, some with temporary, fixed or moving joints.	Use investigations of existing products to inform planning of their own product. Check their work as it develops and modify approach in light of progress. Discuss how well their product meets the design criteria and the needs of the user.	Prototype shell or frame structures. Strengthen frames with diagonal struts. Use lolly sticks/card to make levers and linkages.

UKS2				
Design		**Make**	**Evaluate**	**Technical Knowledge**
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		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	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	.apply their understanding of how to strengthen, stiffen and reinforce more complex structures .understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] .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.
Year 5	.Use research and develop design criteria to design innovative, functional and appealing products that are fit for purpose and aimed at particular groups or individuals. .Develop and communicate design ideas using annotated sketches, detailed plans, oral and digital presentations.	Select and use tools and equipment for a range of uses. E.g. cut and shape ingredients, join fabrics, cut accurately and safely, use bradawl to mark holes, hand drill and pin and tacks during textile work. Join and combine a range of materials and ingredients using appropriate methods. E.g. beating, rubbing in, drilling, glueing, sewing, screwing.	Show a clear understanding of the specification and use this to inform decisions. Justify decisions about materials and methods of construction. Evaluate products and use of information sources.	Build frameworks using a range of materials e.g. wood, corrugated card, plastic to support mechanisms. Use linkages to make movement larger or more varied. Incorporate motor and a switch into a model.

Year 6	.Use research and exploration to identify and understand user needs when designing a product. .Develop and communicate design ideas using annotated sketches, detailed plans, oral and digital presentations and computer based tools.	Select from and use specialist tools and techniques for a range of uses. E.g. Whisk, craft knife, cutting mat, safety ruler. Select from and use a wider range of materials, components and ingredients taking into account their aesthetic properties.	Test, evaluate and refine ideas and products against a specification. Justify decisions made during the design process. Evaluate products and use of information sources throughout the process and use this to inform planning.	Build complex frameworks using a range of materials to support mechanisms. Use a CAM to make an up and down mechanism. Control a model using an ICT control programme.