Design and Technology

Skills Progression

Key Stage 1 Skills Progression

	Year 1	Year 2
Autumn	**Structure** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - design purposeful, functional, appealing products for themselves and other users based on design criteria **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 **Evaluate** - explore and evaluate a range of existing products **Technical knowledge** - build structures, exploring how they can be made	**Structure** <u>National Curriculum content.</u> When designing and making, pupils should be taught to: **Design** - design a purposeful, functional product for themselves and other users based on the design criteria. Generate, develop and model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. **Make** - select from and use a range of tools and equipment to perform practical tasks. **Evaluate** - explore and evaluate a range of existing products. - evaluate their ideas and products against design criteria. **Technical knowledge** - build structures, exploring how they can be made

	stronger, stiffer and more stable. **Skills ref:** - cut materials safely using the tools provided. - demonstrate a range of cutting and shaping techniques. - design products that have a clear purpose and an intended user. - make products, refining the design as work progresses	stronger, stiffer and more stable. **Skills ref:** - design products that have a clear purpose and an intended user. - make products, refining the design as work progresses. - explore objects and designs to identify likes and dislikes of the designs. - suggest improvements to existing designs.
Spring	**Papier Mache and Clay** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - design purposeful, functional, appealing products for themselves and other users based on design criteria **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	**Cooking** <u>National Curriculum content.</u> When designing and making, pupils should be taught to: **Design** - design a purposeful, functional product for themselves and other users based on the design criteria. - generate, develop and model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT. **Make** - select from and use a range of tools and equipment to perform practical tasks.

	and ingredients, according to their characteristics **Evaluate** **-** explore and evaluate a range of existing products **Technical knowledge** - build structures, exploring how they can be made stronger, stiffer and more stable **Skills ref:** - shape textiles using templates. - use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. - create products using levers, wheels and winding mechanisms. - design products that have a clear purpose and an intended user. - make products, refining the design as work progresses	**Evaluate** - explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria **Technical knowledge** – - 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. **Skills ref:** - use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. - design products that have a clear purpose and an intended user. - make products, refining the design as work progresses. - use software to design. - explore objects and designs to identify likes and dislikes of the designs. - suggest improvements to existing designs - explore how products have been created.
Summer	**Cooking** <u>National Curriculum content</u>	UNIT NEEDS CHECKING <u>National Curriculum content</u>

	When designing and making, pupils should be taught to: **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. **Make** - select from and use a range of tools and equipment to perform practical tasks - Cutting - select from and use a wide range of materials **Evaluate** - explore and evaluate a range of existing products **Skills ref:** - cut, peel or grate ingredients safely and hygienically. - measure or weigh using measuring cups or electronic scales. - assemble or cook ingredients. - design products that have a clear purpose and an intended user. - make products, refining the design as work progresses	When designing and making, pupils should be taught to: **Design** **Make** **Evaluate** **Skills ref.**

Lower Key Stage 2 Skills Progression

	Year 3	Year 4
Autumn	**Textiles** <u>National Curriculum content:</u> When designing and making, pupils should be taught to: **Design** - 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 **Make** - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **Evaluate** - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Skills ref:** - create weavings	**Construction** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** **Make** **Evaluate** **Skills ref.** -Choose suitable techniques to construct products or to repair items. -Strengthen materials using suitable techniques.

	- develop ideas from starting points throughout the curriculum - mix colours effectively - measure and mark out to the nearest millimetre - use coiling, overlapping, tessellation, mosaic and montage. - comment on artworks using visual language.	
Spring	**Food Technology** National Curriculum content **Design** **Make** **Evaluate** **Skills ref** -Prepare ingredients hygienically using appropriate utensils. -Measure ingredients to the nearest gram accurately. -Follow a recipe. -Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).	**Structure** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - 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 **Make** - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **Evaluate** - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

		Technical knowledge - apply their understanding of how to strengthen, stiffen and reinforce more complex structures **Skills ref:** - cut materials accurately and safely by selecting appropriate tools. - measure and mark out to the nearest millimetre. - apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). - select appropriate joining techniques. - choose suitable techniques to construct products or to repair items. - strengthen materials using suitable techniques
Summer	**Mechanisms and Structure** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - use research and develop design criteria to inform the design of functional products that are fit for purpose	**Textiles** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - use research and develop design criteria to inform the design of innovative, functional, appealing products that

	- generate, develop, model and communicate their ideas through discussion, annotated sketches **Make** - select from and use a wider range of tools and equipment to perform practical tasks cutting, shaping accurately - select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities **Technical knowledge** - apply their understanding of how to strengthen, stiffen and reinforce more complex structures **Evaluate** - 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 **Skills ref:** - develop ideas from starting points throughout the curriculum - collect information, sketches and resources. - choose suitable techniques to construct products or to repair items. - strengthen materials using suitable techniques. - use scientific knowledge of the transference of forces to	are fit for purpose, aimed at particular individuals or groups **Make** - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **Evaluate** - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Skills ref:** - create weavings. - develop ideas from starting points throughout the curriculum. - mix colours effectively. - measure and mark out to the nearest millimetre. - use coiling, overlapping, tessellation, mosaic and montage. - comment on artworks using visual language.

	choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	

Lower Key Stage 2 Skills Progression

	Year 5	**Year 6**
Autumn	**Food Technology** National Curriculum content When designing and making, pupils should be taught to: **Design** - design with the user in mind, motivated by the service a product will offer (rather than simply for profit) - 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 **Make** - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	**Construction** National Curriculum content When designing and making, pupils should be taught to: **Design** - 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 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**

	Evaluate - evaluate the design of products so as to suggest improvements to the user - 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 **Skills ref** - understand the importance of correct storage and handling of ingredients - measure accurately and calculate ratios of ingredients to scale up or down from a recipe - demonstrate a range of baking and cooking techniques. - create and refine recipes, including ingredients, methods, cooking times and temperatures.	- 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** - 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] **Skills ref:** - develop a range of practical skills to create products - cut materials with precision and refine the finish with appropriate tools - develop a range of practical skills to create products - ensure products have a high quality finish, using art skills where appropriate. - combine elements of design from a range of inspirational designers throughout history, giving reasons for choices
Spring	**Textiles** <u>National Curriculum content</u>	**Food technology** <u>National Curriculum content</u>

	When designing and making, pupils should be taught to: **Design** - 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 **Make** - 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** - 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 **Technical knowledge** - apply their understanding of how to strengthen, stiffen and reinforce more complex structures **Skills ref:** - cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). - show an understanding of the qualities of materials to	When designing and making, pupils should be taught to: **Design** - 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 **Make** - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **Evaluate** - 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 **Skills ref:** - understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). - measure accurately and calculate ratios of ingredients to scale up or down from a recipe - demonstrate a range of baking and cooking techniques - create and refine recipes, including ingredients, methods, cooking times and temperatures.

	choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). - create objects (such as a cushion) that employ a seam allowance. - join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).	
Summer	**Construction** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** **-** 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 from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	**Sewing** <u>National Curriculum content</u> When designing and making, pupils should be taught to: **Design** - 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 **Make** - 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** - investigate and analyse a range of existing products

	- 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** - 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. **Skills ref:** **-** make products through stages of prototypes, making continual refinements - ensure products have a high quality finish, using art skills where appropriate - use prototypes, cross-sectional diagrams and computer aided designs to represent designs	- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Technical knowledge** - apply their understanding of how to strengthen, stiffen and reinforce more complex structures **Skills ref:** - select from and use a wider range of tools and equipment to perform practical tasks, such as 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. - 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, such as 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