Design and Technology

Skills Progression across school

****The skills in bold and italics are only covered once throughout KS2. All the other skills are covered twice.****

National curriculum (coverage y3/4 and y5/6 or both) **The skills highlighted in purple are the key performance indicators.**
By the end of key stage 2 pupils should be taught:

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
- 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
- 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]
- 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.

Cooking and Nutrition (to be taught through forest schools)

- 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.

	Year 3/4 Plan A How have natural disasters led to change? *(Mechanisms: pulleys used in cranes)*	**Year 3/4 Plan B Can small actions make a difference? *(Cooking and Nutrition. Making bread)***	**Year 5/6 Plan A How will we live in the future? *(Electrical systems, gears and computing- microbits/crumble controllers and moving vehicles.)***	**Year 5/6 Plan B Do we appreciate what we have? *(Textiles- Upcycling)***
Developing, planning and communicating ideas.	I can generate ideas for an item, considering its purpose and the users.	I can generate ideas for an item, considering its purpose and the users.	I can generate ideas through brainstorming and identify a purpose for my product. ***(English)***	I can generate ideas through brainstorming and identify a purpose for my product. ***(English)***

	I can identify a purpose and establish criteria for a successful product. I can plan the order of my work before starting. ***(English)*** I can explore, develop and communicate design proposals by modelling ideas. I can make drawings with labels when designing. ***(Art)***	I can identify a purpose and establish criteria for a successful product. I can plan the order of my work before starting. ***(English)*** I can explore, develop and communicate design proposals by modelling ideas. I can make drawings with labels when designing. ***(Art)***	I can draw up a specification for my design. ***(Science, maths, art, topic, geography)*** I can develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. ***(Science, maths, art, topic, geography)*** I can use results of investigations, information sources, including ICT when developing design ideas. ***(Computing, science, writing)*** I can develop a design specification. ***(Art, maths, Forest schools)***	I can draw up a specification for my design. ***(Science, maths, art, topic, geography)*** I can develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. ***(Science, maths, art, topic, geography)*** I can use results of investigations, information sources, including ICT when developing design ideas. ***(Computing, science, writing)*** I can develop a design specification. ***(Art, maths, Forest schools)***
Working with tools, equipment, materials and components to make quality products (inc-food)	I can select appropriate tools and techniques for making my product. I can use simple graphical communication techniques. ***(Art and computing)*** ***I can join and combine materials and components accurately in temporary and permanent ways.***	I can select appropriate tools and techniques for making my product. I can use simple graphical communication techniques. ***(Art and computing)*** ***I can join and combine ingredients accurately to make bread that is edible.***	I can cut and join with accuracy to ensure a good-quality finish to the product ***(Forest school, science)*** I can achieve a quality product. ***(Art, science, English)*** I can make modifications as I go along. ***(Art, maths, Forest schools, English)***	I can cut and join with accuracy to ensure a good-quality finish to the product. ***(Forest school, science)*** I can achieve a quality product. ***(Art, science, English)*** I can make modifications as I go along. ***(Art, maths, Forest schools, English)***

	I can measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. ***I can measure, tape or cut with some accuracy. (Maths)*** ***I can use finishing techniques strengthen and improve the appearance of my product using a range of equipment including (Computing)***	***I can weigh and measure accurately (time, dry ingredients, liquids). (Maths)*** ***I can demonstrate hygienic food preparation and storage. (PHSE)*** ***I can apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens (PSHE, Science)***	I can use skills in using different tools and equipment safely and accurately. ***(Forest school, science, maths)*** ***I can assemble components make working models. (Art, maths, Forest schools, English).*** ***I can construct products using permanent joining techniques. (Art, maths, Forest schools, English)***	I can use skills in using different tools and equipment safely and accurately. ***(Forest school, science, maths)*** ***I can pin, sew and stitch materials together and create a product. (Art)*** ***I can sew using a range of different stitches, weave and knit***
Evaluating processes and products	I can evaluate my product against original design criteria *e.g. how well it meets its intended purpose.* ***(Writing-English)*** I can disassemble and evaluate familiar products	I can evaluate my product against original design criteria *e.g. how well it meets its intended purpose.* ***(Writing-English)*** I can disassemble and evaluate familiar products	I can evaluate my products, identifying strengths and areas for development, and carrying out appropriate tests. ***(Science, writing)*** I can record my evaluations using drawings with labels. ***(maths, art, science, English)*** I can evaluate against my original criteria and suggest ways that my product could be improved. ***(Writing, science)***	I can evaluate my products, identifying strengths and areas for development, and carrying out appropriate tests. ***(Science, writing)*** I can record my evaluations using drawings with labels. ***(maths, art, science, English)*** I can evaluate against my original criteria and suggest ways that my product could be improved. ***(Writing, science)***