Headlands Primary School: Progression of skills in Design and Technology

Strands	Reception	Year 1/2	Year 3/4	Year 5/6
Design, make, evaluate and improve	Design products that have a clear purpose and an intended user.	Design products that have a clear purpose and an intended user based on a design criteria. Generate, develop, model and communicate ideas. Make products, refining the design as work progresses.	Design with purpose by identifying opportunities to design. Research to develop design criteria. Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the end product design. Use software to design and represent product designs.	Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Investigate and analyse existing products. Evaluate your own ideas and products against the design criteria and consider others views to improve. 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.
Design throughout history	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs.	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. Explore how products have been created	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work.	Understand how key events and individuals have helped shape the world in terms of design. Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. Create innovative designs that improve upon existing products. Evaluate the design of products to suggest improvements to the user experience.

Cooking and nutrition	Mix ingredients. Assemble food together. Introduce a healthy diet.	Select, assemble or cook ingredients. Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Understand a healthy and varied diet (Eatwell plate) Understand where food comes from (Farm to fork)	Prepare ingredients hygienically using appropriate utensils. Measure accurately (to the nearest gram). Follow a recipe. Assemble and cook ingredients (controlling the temperature of the oven or hob, if cooking). Cook savoury dishes Understand a healthy and varied diet (Eatwell plate) Understand seasonality in food Understand where ingredients are grown, reared caught or processed	Understand the importance of correct storage and handling of ingredients (knowledge of micro-organisms). Demonstrate a range of baking and cooking techniques. Measure accurately and calculate ratios of ingredients to scale up or down from recipe. Create and refine recipes, including ingredients, methods, cooking times and temperatures. Understand a healthy and varied diet (Eatwell plate) Understand seasonality in food Understand where ingredients are grown, reared caught or processed
Materials	Hold and use scissors safely and correctly. Cut close to a line guide. Select suitable objects to use for purpose (e.g. junk modelling).	Select and use suitable materials for purpose. Cut materials safely using tools provided. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Measure and mark out to nearest cm. Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).	Cut materials accurately and safely by selecting appropriate tools. Select appropriate joining techniques. Measure and mark out to the nearest mm. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).	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 choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper).

Textiles	Use sewing cards. Use basic stitches (e.g. running stitch). Colour and decorate textiles.	Select and use suitable textiles for purpose Shape textiles using templates. Join textiles using running stitch. Colour and decorate textiles using a number of techniques	Understand the need for a seam allowance. Join textiles with appropriate stitching Select the most appropriate techniques to decorate textiles	Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (e.g. back stitch for seams and running stitch to attach decoration). Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion).
Electricals & Electronics			Create series circuits.	Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).
Computing			Control and monitor models using software designed for this purpose.	Write code to control and monitor models or products.
Construction	Build structures and models. Use glue sticks, PVA, split pins and tape to join and adapt materials appropriately.	Select and use materials to practise joining, drilling, screwing, gluing and nailing materials to make and strengthen products. Build structures, exploring how they can be made stronger, stiffer and more stable.	Select and use tools and materials to practise constructing, cutting, shaping, joining and finishing products. Choose suitable tools and techniques to repair items. Strengthen materials using suitable techniques and tools.	Develop a range of practical skills to create products (e.g cutting, drilling and screwing, nailing, gluing, filling and sanding). Select materials, components and ingredients according to a products functional properties or aesthetics. Choose how to improve more complex structures.
Mechanics	Use a range of mechanical devices and discuss how they work.	Create products using axles, levers, sliders, wheels and winding mechanisms.	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).	Convert rotary motion to linear using cams and mechanical linkages. Use innovative combinations of electronics (or computing) and mechanics in product designs (e.g. a series of circuits, switches, bulbs, buzzers and motors).