Design and Technology Progression Map

Lower Key Stage Two (Years Three and Four)	Upper Key Stage Two (Years Five and Six)
Design • Identify the design features of their products that will appeal to their intended audience. • Use their knowledge of a broad range of existing products to help generate their ideas. • Design innovative and appealing products that have a clear purpose and are aimed at a specific audience. • Be able to explain how particular elements of their products work. • Use annotated drawings and cross-sectional drawings to develop and communicate their ideas. • When designing, explore different initial ideas before coming up with a final design. • When planning, start to explain their choice of materials, function and aesthetics. • Build and test ideas out through using/building prototypes. • Develop and follow simple design criteria. • Work in a broader range of relevant contexts.	**Design** • Use research to inform and develop detailed design criteria, to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market. • Use their knowledge of a broad range of existing products to help inform and develop their ideas; • Design products that have a clear purpose and identify the design features of their products, that will appeal to the intended user. • Explain how particular parts of their products work; • Use annotated and cross-sectional drawings and exploded diagrams to develop and communicate their ideas; • Generate a range of design ideas, clearly communicating their final designs. • Consider the availability and costings of resources when planning out designs; • Work in a broad range of relevant contexts, for example conservation.
Make • With growing confidence, carefully select from a range of tools and equipment, explaining their choice. • Select from a range of materials and components according to their functional properties. • Organise the main stages of construction, into a systematic order;	**Make** • Independently plan by suggesting what to do next. • With growing confidence, select from a wide range of tools and equipment, explaining their choices. • Select from a range of materials and components according to their functional properties and aesthetic qualities. • Create step-by-step plans as a guide to making.

Practical skills and techniques • Learn to use a range of tools and equipment safely. • Use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components. • As independently as possible, measure and mark out to the nearest cm and millimeter. • Cut, shape and score materials with some degree of accuracy' • Assemble, join and combine material and components with some degree of accuracy. • Demonstrate how to measure, cut, shape and join fabric with some accuracy. Using appropriate sewing technique. • Begin to select and use different and appropriate finishing techniques to improve the appearance of a product	• Learn to use a range of tools and equipment safely and appropriately and follow the appropriate hygiene procedures. • Independently take exact measurements and use appropriately. • Use a full range of materials and components, including construction materials and kits, textiles, and mechanical components. • Cut a range of materials with precision and accuracy. • Shape and score materials with precision and accuracy. • Assemble, join and combine materials and components with accuracy. • Demonstrate how to measure, make a seam, tape, pin, cut, shape and join fabric. • Join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch. • Refine the finish using techniques to improve the appearance of their product.
Technical Knowledge • Recognise and understand that materials have both functional properties and aesthetic qualities. • Apply their understanding of how to strengthen, stiffen and reinforce more in order to create, more complex structures with useful characteristics. • Understand and demonstrate how mechanical and electrical systems have an input and output process. • Construct and represent simple electrical circuits, to create functional products • Explain how mechanical systems such as levers and linkages create movement. • Use mechanical systems in their products.	**Technical Knowledge** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures to improve the product. • Understand and demonstrate that mechanical and electrical systems have an input, process and output. • Explain how mechanical systems, such as cams, create movement and use mechanical systems in their products. • Apply their understanding of computing to program, monitor and control a product.
Cooking and nutrition • Start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world.	**Cooking and Nutrition** • To know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the

• Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically. • With support, use a heat source to cook ingredients showing awareness of the need to control the temperature. • Use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking; • Explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes. • Understand that to be active and healthy, nutritious food and drink are needed to provide energy for a healthy body. • Prepare ingredients using appropriate cooking utensils; hygienically. • Measure and weigh ingredients accurately • Start to independently follow a recipe.	wider world. • Understand about seasonality, • Understand that food is processed into ingredients that can be eaten or used in cooking. • Demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically using the appropriate heat source. • Demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling. • Explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes. • Adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma. • Alter methods, cooking times and/or temperatures measure accurately and calculate ratios of ingredients. • Independently follow a recipe.
Evaluate • Explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose. • Explore what materials/ingredients products are made from and suggest reasons for this. • Consider their design criteria as they make progress and be willing to alter their plans, considering the views of others to helps them improve their product design • Evaluate their product against their original design criteria. • Evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.	**Evaluate** • Complete detailed analysis of other products on the market. • Critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and build. • Evaluate their ideas and products against the original design criteria, be willing to make changes as needed.