Fir Tree Junior School
Curriculum Knowledge and Skills Progression
Design Technology

	Year 3 and 4	Year 5 and 6
Background Research **Exploring context and existing products**	Identify who made the product, when it was made and what its purpose is Identify what the product has been made from Evaluate the product on design and use Research facts about famous inventors/ chefs / designers etc linked to product	Identify who made the product, when it was made and what its purpose is .. Identify what the product has been made from and how environmentally friendly the materials are Identify the cost to make the product and whether it has any other purposes e.g. Leading innovation of the time, trend setting Evaluate the product on design, appearance and use Research facts about famous inventors/ chefs / designers etc linked to product
Design Criteria **Understanding their intended users and their own product**	Understand and gather information about what a particular group or people want from a product Describe the purpose of their product and how it will work Identify design features that will appeal to intended users Explain how parts of their product works Develop their own design criteria and use for planning ideas Generate realistic ideas that meet needs of user and take into account availability of resource	Understand and gather information about what a particular group or people want from a product, using questionnaires, surveys etc Describe the purpose of their product Identify design features that will appeal to intended users Explain how parts of their product will work Develop their own design criteria and use for planning ideas/ Create a design description for their product Generate innovative ideas that meet needs of user and take into account availability of resources Highlight the impact of time, resources and cost within their design ideas
Planning **Communicating ideas and creating prototypes for product**	Share and discuss ideas with others Order the main stages of making Choose materials to use based on suitability of their properties Represent ideas in diagrams, annotated sketches and computer based programmes (where appropriate) Create pattern pieces and prototypes	Share and discuss ideas with others Record a step by step plan for making Produce lists for the tools, equipment and materials they will be using Choose materials to use based on suitability of their properties and aesthetic qualities Represent ideas in diagrams, annotated sketches and computer-based programmes (where appropriate) Create pattern pieces and prototypes

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Making **Selecting the tools and applying the practical skills and techniques**	Use materials - construction materials and kits, textiles, food, mechanical and electrical components Choose suitable tools for making whilst explaining why they should be used Use design criteria whilst making Follow safety and food hygiene procedures Measure, mark, cut and shape materials and components with some accuracy Join, assemble and combine materials and components with some accuracy Use finishing techniques, including skills learnt in Art with some accuracy	Use materials - construction materials and kits, textiles, food, mechanical and electrical components Choose suitable tools for making whilst explaining why they should be used Use design criteria whilst making Follow safety and food hygiene procedures Measure, mark, cut and shape materials and components accurately Join, assemble and combine materials and components accurately Demonstrate problem solving skills when encountering a mistake or practical problem Use finishing techniques, including skills learnt in Art accurately
Evaluation **Referring to planning and initial ideas in evaluating their product**	Use design criteria to evaluate product – identifying both strengths and areas for development Consider the views of others, including intended user, whilst evaluating product	Use design criteria to evaluate product – identifying both strengths and areas for development and whether it is fit for the intended purpose Consider the view of others, including intended user, whilst evaluating product
Technical Knowledge **Making products work**	Know how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics • that mechanical and electrical systems have an input, process and output the correct technical vocabulary for the projects they are undertaking how mechanical systems such as levers and linkages or pneumatic systems create movement	Know how to use learning from science to help design and make products that work how to use learning from mathematics to help design and make products that work that materials have both functional properties and aesthetic qualities • that materials can be combined and mixed to create more useful characteristics • that mechanical and electrical systems have an input, process and output the correct technical vocabulary for the projects they are undertaking how mechanical systems such as cams or pulleys or gears create movement how more complex electrical circuits and components can be used to create functional products how to program a computer to monitor changes in the environment and control their products

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	how simple electrical circuits and components can be used to create functional products how to program a computer to control their products how to make strong, stiff shell structures that a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed	how to reinforce and strengthen a 3D framework that a 3D textiles product can be made from a combination of fabric shapes that a recipe can be adapted by adding or substituting one or more ingredient
Teaching cooking and nutrition **Food preparation, cooking and nutrition**	Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink are needed to provide energy for a healthy and active lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking	Sort foods into the 5 groups using The Eatwell Plate and identify that this makes up a healthy diet Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking

Teaching cooking and nutrition **Understanding food and food preparation**	Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that recipes can be changed by adding or taking away ingredients Understand that the seasons can affect food produce	: Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that the seasons can affect food produce Understand that sometimes raw ingredients need to be processed before they can be used in cooking (eg removing feathers from a chicken before cooking; removing skins from various vegetables etc) Understand that recipes can be adapted to change the appearance, taste and aroma of a dish