Design Technology Progression of Skills

	PROGRAMME OF STUDY	SKILLS TAUGHT	
YEAR 1	Key stage 1 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. 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, templates, mock-ups and, where appropriate, information and communication technology 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 ✓ 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. ✓ use the basic principles of a healthy and varied diet to prepare dishes ✓ understand where food comes from.	**Background Research** –Exploring context and existing products	▪ Understand what a product is and who it is for. ▪ Understand how a product works and how it is used ▪ Identify where you might find this product
		Design Criteria –Understanding their intended users and their own product	▪ Explain what product they will be designing and making. ▪ Explain who their product will be used by. ▪ Describe what their product will be used for.
		Planning Communicating ideas and creating prototypes for product	▪ Discuss what their steps for making could be . ▪ Represent ideas through talking and drawing.
		Making *(can be several lessons depending on project)* Selecting the tools and applying the practical skills and techniques	▪ Use materials: construction materials and kits, textiles, food and mechanical components. ▪ Choose suitable tools for making. ▪ Follow safety and food hygiene procedures. ▪ Measure, mark, cut and shape materials and components. ▪ Join, assemble and combine materials and components.
		Evaluation Referring to planning and initial ideas in evaluating their product	▪ Talk about their design ideas and what they have made. ▪ Make simple judgements of how the product met their design ideas.
		Cooking and Nutrition Understanding food and food preparation cooking and nutrition	**Across KS1** ▪ Understand that food comes from plants or animals. ▪ Understand that food has to be farmed, caught, or grown. ▪ Sort foods into the 5 groups using The Eatwell Plate. ▪ Identify that people should eat at least 5 portions of fruit and vegetables a day. ▪ Prepare simple dishes hygienically and safely without a heat source. ▪ Use cooking techniques such as: cutting, peeling and grating.
YEAR 2		**Background Research** –Exploring context and existing products	▪ Understand what a product is and who it is for. ▪ Understand how a product works and how it is used. ▪ Identify where you might find this product. ▪ Identify the materials used to make the product. Express an opinion about the product
		Design Criteria –Understanding their intended users and their own product	▪ Use own experiences and existing products to develop ideas. ▪ Explain what product they will be designing and making. ▪ Explain who their product will be used by. ▪ Describe what their product will be used for and how it will work. ▪ Explain why their product is suitable for the intended user.
		Planning Communicating ideas and creating prototypes for product	▪ Discuss what their steps for making could be. ▪ Represent ideas through talking, drawing and computing – (where appropriate). ▪ Choose materials to use based on suitability of their properties. ▪ Create templates/pattern pieces and explore materials whilst developing ideas.
		Making *(can be several lessons depending on project)* Selecting the tools and applying the practical skills and techniques	▪ Use materials: construction materials and kits, textiles, food and mechanical components. ▪ Choose suitable tools for making whilst explaining why they should be used. ▪ Follow safety and food hygiene procedures. ▪ Measure, mark, cut and shape materials and components. ▪ Join, assemble and combine materials and components. ▪ Use finishing techniques, including skills learnt in Art.
		Evaluation Referring to planning and initial ideas in evaluating their product	▪ Talk about their design ideas and what they have made. ▪ Make simple judgements of how the product met their design ideas. ▪ Suggest how their product could be improved.
		Cooking and Nutrition Understanding food and food preparation cooking and nutrition	**Across KS1** ▪ Understand that food comes from plants or animals. ▪ Understand that food has to be farmed, caught, or grown. ▪ Sort foods into the 5 groups using The Eatwell Plate. ▪ Identify that people should eat at least 5 portions of fruit and vegetables a day. ▪ Prepare simple dishes hygienically and safely without a heat source. ▪ Use cooking techniques such as: cutting, peeling and grating.

YEAR 3	Key stage 2 Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to: <u>Design</u> ✓ 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 <u>Make</u> ✓ 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 <u>Evaluate</u> ✓ 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 ✓ understand how key events and individuals in design and technology have helped shape the world <u>Technical knowledge</u> ✓ 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,	**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. <u>Extra skills</u>: ▪ 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. ▪ Generate realistic ideas that meet needs of user. ▪ 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 resources.
		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 prototype.
		Making *(can be several lessons depending on project)* 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.
		Evaluation Referring to planning and initial ideas in evaluating their product	**Across KS2** ▪ Use design criteria to evaluate product – identifying both strengths and areas for development. ▪ Consider the views of others, including intended user, whilst evaluating product.
		Cooking and Nutrition Understanding food and food preparation cooking and nutrition	▪ **Lower KS2** ▪ 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 ▪ 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.
YEAR 4		**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. <u>Extra skills</u>: ▪ 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. ▪ 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.
		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
		Making *(can be several lessons depending on project)* 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.
		Evaluation Referring to planning and initial ideas in evaluating their product	**Across KS2** ▪ Use design criteria to evaluate product – identifying both strengths and areas for development. ▪ Consider the views of others, including intended user, whilst evaluating product.
		Cooking and Nutrition Understanding food and food	**Lower KS2** ▪ Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe.

	buzzers and motors] ✓ apply their understanding of computing to program, monitor and control their products. <u>Cooking & Nutrition</u> ✓ 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.	preparation cooking and nutrition	▪ Understand that recipes can be changed by adding or taking away ingredients. ▪ Understand that the seasons can affect food produce **Lower KS2** ▪ 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.
YEAR 5		**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 and how environmentally friendly the materials are. Evaluate the product on design, appearance and use. ▪ Identify the cost to make the product. <u>Extra skills</u> ▪ 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, using questionnaires, surveys etc . ▪ Describe the purpose of their product Identify design features at will appeal to the intended users. ▪ Explain how parts of their product will work. ▪ Develop their own design criteria and use for planning ideas ▪ Generate innovative ideas that meet needs of user and take into account availability of resources
		Planning Communicating ideas and creating prototypes for product	▪ 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
		Making *(can be several lessons depending on project)* 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 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	**Across KS2** ▪ Use design criteria to evaluate product – identifying both strengths and areas for development. ▪ Consider the views of others, including intended user, whilst evaluating product.
		Cooking and Nutrition Understanding food and food preparation cooking and nutrition	**Upper KS2** ▪ 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. De -feathering a chicken) ▪ Understand that recipes can be adapted to change the appearance, taste and aroma of a dish ▪ 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.
YEAR 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 and how environmentally friendly the materials are. ▪ Evaluate the product on design, appearance and use. ▪ Identify the cost to make the product and whether it has any other purposes eg. Leading innovation of the time, trend setting. <u>Extra skills</u> ▪ 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, 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. ▪ Create a design description for their product. ▪ Highlight the impact of time, resources and cost within their design ideas. ▪ Generate innovative ideas that meet needs of user.
		Planning Communicating ideas and creating prototypes for product	▪ 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.
		Making *(can be several lessons*	▪ Use materials: construction materials and kits, textiles, food, mechanical and electrical components.

		depending on project) Selecting the tools and applying the practical skills and techniques	▪ 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 that involve a number of steps, including skills learnt in Art accurately.	
		Evaluation Referring to planning and initial ideas in evaluating their product	**Across Upper KS 2** ▪ Use design criteria to evaluate product – identifying both strengths and areas for development. ▪ Consider the views of others, including intended user, whilst evaluating product.	
		Cooking and Nutrition Understanding food and food preparation cooking and nutrition	▪ **Upper KS2** ▪ 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. De -feathering a chicken) ▪ Understand that recipes can be adapted to change the appearance, taste and aroma of a dish ▪ 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.	