

Curriculum Skills Progression Overview for Design Technology

Across KS1

When Making pupils will:

- *Follow procedures for safety and hygiene
- *Use a range of material ad components, including construction materials and kits, textiles, food ingredients and mechanical components
- *Measure, mark out, cut and shape materials and components
- *Use finishing techniques, including those from art and design

When Designing pupils will:

- *Work confidently within a range of contexts, imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment
- *State what products they are designing and making; say whether their product is for themselves or other users; describe what their products are for and say how their product will work
- *Describe how they will make their product suitable for their intended users
- *Use simple design criteria to help develop their ideas; generate ideas by drawing on their own experiences and use knowledge of existing products to help generate ideas
- *Model ideas by exploring materials, components and construction kits ad by making templates and mock-ups
- *Use ICT, where appropriate, to develop and communicate their ideas

Year	Designing: Understanding users and purposes; generating, developing, modelling and communicating ideas	Making: Planning practical skills and techniques	Evaluating: Own ideas and existing products	Technical Knowledge
1	*Use pictures and words to describe what they want to do	<ul style="list-style-type: none"> *Generate ideas and recognise the characteristics of familiar products *Show that, with hep, they can put their ideas into practice and what to do next *Use tools and materials, with help, where needed *Choose materials from a range independently or as suggested by the teacher 	<ul style="list-style-type: none"> *Talk about their own and other people's work in simple terms *Begin to describe how a product works *Think of things they could have improved *Consider: what products are used for? *Consider: who products are designed for? 	<ul style="list-style-type: none"> *Understand about the working characteristics of some materials *Understand how mechanisms can be used in different ways *Know how free standing structures can be made stiffer and more stable *Know that 3D textile products can be produced from identical 2D shapes e.g. puppets
2	*Use models, pictures and words to describe their designs	<ul style="list-style-type: none"> Generate ideas and plan what to do next, based on their experience of working with materials and components *Select appropriate tools, techniques and material, explaining their choices *Select and use tools from a range suggested by the teacher *Choose materials and techniques from a range selected by the teacher *Begin to assemble, join and combine materials and components in a variety of ways 	<ul style="list-style-type: none"> *Begin to recognise that they have done well as work progresses *Begin to suggest things that they could do better in the future *Consider: how are products used? *Consider: what materials are used? 	<ul style="list-style-type: none"> *Explain about the working characteristics of common materials *Explain how mechanisms can be used in different ways – levers, sliders, wheels and axles *Use the correct vocabulary for projects

Across KS2**When Making pupils will:**

- Measure, mark out, cut and shape a range of materials with increasing accuracy
- *Join, assemble and combine materials with increasing accuracy
- *Use finishing techniques to improve the appearance or strengthen their product

When Designing pupils will:

- *Share and clarify ideas through discussion
- *Model their ideas using prototypes and pattern pieces
- *Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas
- *Know about inventors, designers, engineers, chefs and manufacturers who have developed ground breaking products
- *Work confidently within a range of contexts, such as home, school, leisure, culture, enterprise, industry and the wider environment
- *Describe the purpose of their products; indicate the design features of their products that will appeal to intended users; explain how particular parts of their product work

Technical Knowledge:

- *Know how to use learning from mathematics and science to help design and make products that work
- *Know that materials have both functional properties and aesthetic qualities
- *Know that material can be combined and mixed to create more useful characteristics
- *Know that electrical systems have an input, process and output
- *know the correct technical vocabulary for the projects that they are undertaking

Year	Designing: Understanding users and purposes; generating, developing, modelling and communicating ideas	Making: Planning practical skills and techniques	Evaluating: Own ideas and existing products	Technical Knowledge
3	<ul style="list-style-type: none">*Generate realistic ideas, focussing on the needs of the user*Make design decisions that take account of the availability of resources*Gather information about the needs and wants of particular individuals and groups*Develop their own design criteria and use these to inform their ideas Analyse and Investigate: <ul style="list-style-type: none">*Who designed and made products*Where products were designed and made*When products were designed and made*Whether products can be recycled or reused	<ul style="list-style-type: none">*Generate ideas and begin to recognise that their designs have to meet a range of different needs*Clarify ideas when asked and begin to use words, labelled sketches and models to communicate the details of their designs*Make a realistic plan for achieving their aims i.e. ordering the stages of making*Begin to think about the order of their work*Begin to identify appropriate tools, equipment, materials, components and techniques; select appropriate tools*Use a wider range of materials and components than KS1, including construction kits, textiles, food ingredients, mechanical and electronic components	<ul style="list-style-type: none">*Compare their work with that of others*Say what they think and feel about their own work*Explain why materials were chosen	<ul style="list-style-type: none">*Explain how the working characteristics of common materials affect the way they might be used*Suggest how a mechanism could be used to make something move in a different way e.g. how mechanical systems such as levers and linkages or pneumatic systems create movement*That a single fabric shape can be used to make a 3D textiles project

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5	<ul style="list-style-type: none"> *Carry out research, using surveys, interviews, questionnaires and web-based resources *Identify the needs, wants, preferences and values of particular individuals and groups *Develop a simple design specification to guide their thinking *Know how much products cost to make *Know how innovative products are *Recognise what impact products have beyond their intended purpose *Generate innovative ideas, drawing on research 	<ul style="list-style-type: none"> *Draw on and use various sources of information *Use their understanding of the characteristics of familiar products when developing their own ideas *Clarify their ideas through discussion, drawing and modelling *Demonstrate an awareness of constraints *Work with their own detailed plans, modifying where appropriate *Select appropriate tools and techniques to make the product *Explain the sensory qualities of different materials *Formulate step-by-step plans as a guide to making 	<ul style="list-style-type: none"> *Think how materials might be combined to create more useful properties *Suggest how a mechanism such as a belt and a pulley could be used to make something move in a different way *Use electrical circuits with motors and switches to good effect *Know how to reinforce and strengthen a 3D framework *Know that a 3D textiles product can be made from a combination of fabric shapes 	<ul style="list-style-type: none"> *Begin to test and evaluate products *Show an understanding of the situations in which their designs will have to function *Evaluate their products and their use of information sources *Assess how well products have been designed *Assess whether the design achieves its purpose

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6	<ul style="list-style-type: none"> *Carry out research, using surveys, interviews, questionnaires and web-based resources *Identify the needs, wants, preferences and values of particular individuals and groups *Develop a simple design specification to guide their thinking *Know how much products cost to make *know how innovative products are *Recognise what impact products have beyond their intended purpose *Generate innovative ideas, drawing on research *Make designs decisions, taking account of constraints such as time, materials available and cost 	<ul style="list-style-type: none"> *Draw on a range of sources of information including those of others *Show how they understand the form and function of familiar products *Develop criteria for their designs and use these to explore design proposals *Produce plans that outline alternative methods of progressing *Make models and drawings to explore and test their design thinking, discussing their ideas *Produce step-by-step plans as a guide for making *Select and use appropriate tools and techniques and explain why they have been chosen *Explain how different materials and processes might be used *Check their work as it develops and modify their approach in the light of progress 	<ul style="list-style-type: none"> *Evaluate how effectively they have used information sources *Reflect on the quality of design and quality of build as they work *recognise that the quality of the product depends upon how well it meets its purpose *Critically evaluate the quality of the design, manufacture and fitness for purpose as they design and make *Evaluate their ideas and products against their original specification 	<ul style="list-style-type: none"> *Suggest materials that could be combined for properties such as strength *Use ICT control programme to make a mechanism work *Create mechanical systems such as cars, pulleys or gears to create movement *Know how more complex electrical circuits and components can be used to create functional products *Use techniques that involve a number of steps *Demonstrate resourcefulness when tackling practical problems

COOKING AND NUTRITION WHERE FOOD COMES FROM	FOOD PREPARATION, COOKING AND NUTRITION
KEY STAGE 1 Across KS1 pupils should know: <ul style="list-style-type: none">• that all food comes from plants or animals• that food has to be farmed, grown elsewhere (e.g. home) or caught	KEY STAGE 1 Across KS1 pupils should know: <ul style="list-style-type: none">• how to name and sort foods to the five groups in <i>The eatwell plate</i>• that everyone should eat at least five portions of fruit and vegetables every day• how to prepare simple dishes safely and hygienically, without using a heat source• how to use techniques such as cutting, peeling and grating• that food ingredients should be combined according to sensory characteristics• how to follow safe procedures for food safety and hygiene
IN KEY STAGE 1 THE CHILDREN SHOULD COVER THE ABOVE SKILLS AND KNOWLEDGE AT LEAST ONCE A YEAR THIS <u>MUST</u> INCLUDE MAKING A RECIPE TO INCLUDE ABOVE FOOD PREPARATION e.g. FRUIT SALAD, FRUIT KEBABS, MAKING SALADS ETC.	KEY STAGE 2 Across key stage2 pupils should know: <ul style="list-style-type: none">• that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world In late KS2 pupils should also know: <ul style="list-style-type: none">• that seasons may affect the food available• how food is processed into ingredients that can be eaten or used in cooking
IN KEY STAGE 2 THE CHILDREN SHOULD COVER THE ABOVE SKILLS ON A FOOD / NUTRITION TOPIC AT LEAST ONCE A YEAR. THIS <u>MUST</u> INCLUDE FOOD PREPARATION AND COOKING. PREPARATION AND COOKING. WORK WITH KAREN (COOKING) CAN BE USED TO SUPPORT THIS TOPIC	