

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 | *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 | *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? | *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 | 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 | *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? | *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 <p>Analyse and Investigate:</p> <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 |

| 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 |
|------|---|--|---|---|
| 4 | <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 <p>Analyse and Investigate:</p> <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 by collecting and using information, take users' views into account *Begin to produce step-by-step plans *Communicate alternative ideas using words, labelled sketches and models *Begin to demonstrate an awareness of constraints *Select appropriate techniques to make a product *Demonstrate safe and careful procedures when handling food | <ul style="list-style-type: none"> *Reflect on their designs as they develop, bearing in mind the way that the product will be used *Begin to identify what is working well and what could be improved *Know how real products have been designed *Assess if the product achieves its purpose | <ul style="list-style-type: none"> *Explain how the working characteristics of materials affect the way they might be used *Suggest how a mechanism could be used to make something move in a different way *Use electrical circuits with switches to good effect *Know how to make strong stable structures *Know how to program a computer to control their products |
| 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 |

| 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 |
|------|--|--|--|--|
| 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 |

| <p align="center">COOKING AND NUTRITION WHERE FOOD COMES FROM</p> | <p align="center">FOOD PREPARATION, COOKING AND NUTRITION</p> |
|--|---|
| <p align="center">KEY STAGE 1</p> <p>Across KS1 pupils should know:</p> <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 | <p align="center">KEY STAGE 1</p> <p>Across KS1 pupils should know:</p> <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 |
| <p align="center">IN KEY STAGE 1 THE CHILDREN SHOULD COVER THE ABOVE SKILLS AND KNOWLEDGE AT LEAST ONCE A YEAR THIS <u>MUST</u> INCLDE MAKING A RECIPE TO INCLUDE ABOVE FOOD PREPARATION e.g. FRUIT SALAD, FRUIT KEBABS, MAKING SALADS ETC.</p> | |
| <p align="center">KEY STAGE 2</p> <p>Across key stage2 pupils should know:</p> <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 <p>I n late KS2 pupils should also know:</p> <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 | <p align="center">KEY STAGE 2</p> <p>Across key stage2 pupils should know:</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • how to be able to communicate safe procedures for safety and hygiene <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in <i>The eatwell plate</i> • that to be active and healthy, food is needed to provide energy for the body <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that recipes can be adapted to change the appearance, taste, texture and aroma • that different foods contain different substances – nutrients, water and fibre – that are needed for health |
| <p align="center">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</p> | |