Design and Technology Progression – Moorlands Primary School

By the end of EYFS pupils should:	By the end of Year 1 pupils should:	By the end of Year 2 pupils should:	By the end of Year 3 pupils should:	By the end of Year 4 pupils should:	By the end of Year 5 pupils should:	By the end of Year 6 pupils should:
Design:	**Design:**	**Design:**	**Design:**	**Design:**	**Design:**	**Design:**
Pupils should: • state what products they are designing and making • say whether their products are for themselves or other users • develop and communicate ideas by talking and drawing • use information and communication technology, where appropriate, to develop and communicate their ideas	Pupils should: • state what products they are designing and making • say whether their products are for themselves or other users • describe what their products are for • say how their products will work • say how they will make their products suitable for their intended users • use simple design criteria to help develop their ideas • generate ideas by drawing on their own experiences • use knowledge of existing products to help come up with ideas • develop and communicate ideas by talking and drawing • model ideas by exploring materials, components and construction kits and by making templates and mock-ups • use information and communication technology, where appropriate, to develop and communicate their ideas		Pupils should: work confidently within a range of contexts, such as the 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 products work • 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 • use computer-aided design to develop and communicate their ideas			
			Y3 / Y4 pupils should: • gather information about the needs and wants of particular individuals and groups • develop their own design criteria and use these to inform their ideas generate realistic ideas, focusing on the needs of the user • make design decisions that take account of the availability of resources		Y5 / Y6 pupils should: • 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 • generate innovative ideas, drawing on research • make design decisions, taking account of constraints such as time, resources and cost	

<table>
<tr><th>Make:</th><th colspan="2">Make:</th><th colspan="2">Make:</th><th colspan="2">Make:</th></tr>
<tr><td rowspan="2">Pupils should:
-Self select from a range of tools and equipment, explaining their choices
• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components
• measure, mark out, cut and shape materials and components
• assemble, join and combine materials and components
• follow procedures for safety and hygiene</td><td colspan="2" rowspan="2">Pupils should:
-Select from a range of tools and equipment, explaining their choices
• select from a range of materials and components according to their characteristics
• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components
• measure, mark out, cut and shape materials and components
• assemble, join and combine materials and components
• use finishing techniques, including those from art and design</td><td colspan="4">Pupils should:
• follow procedures for safety and hygiene
• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</td></tr>
<tr><td colspan="2">Y3 / Y4 pupils should:
• measure, mark out, cut and shape materials and components with some accuracy
• assemble, join and combine materials and components with some accuracy
• apply a range of finishing techniques, including those from art and design, with some accuracy</td><td colspan="2">Y5 / Y6 pupils should:
• accurately measure, mark out, cut and shape materials and components
• accurately assemble, join and combine materials and components
• accurately apply a range of finishing techniques, including those from art and design
• use techniques that involve a number of steps
• demonstrate resourcefulness when tackling practical problems</td></tr>
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<tr><th>Evaluate</th><th colspan="2">Evaluate:</th><th colspan="2">Evaluate:</th><th colspan="2">Evaluate:</th><th>Evaluate:</th></tr>
<tr><td rowspan="2">Pupils should:
• talk about their design ideas and what they are making
• know what they like and dislike about their products
• suggest how their products could be improved</td><td colspan="2" rowspan="2">Pupils should:
• talk about their design ideas and what they are making
• make simple judgements about their products and ideas against design criteria
• suggest how their products could be improved
• know what products are
• know who products are for
• know what products are for
• know how products work
• know how products are used
• know where products might be used
• know what materials products are made from
• know what they like and dislike about their products</td><td colspan="5">Pupils should:
• identify the strengths and areas for development in their ideas and products
• consider the views of others, including intended users, to improve their work
• how well products have been designed
• how well products have been made
• why materials have been chosen
• what methods of construction have been used
• how well products work
• how well products achieve their purposes
• how well products meet user needs and wants</td></tr>
<tr><td colspan="3">Y3 / Y4 pupils should:
• refer to their design criteria as they design and make
• use their design criteria to evaluate their completed products
• who designed and made the products
• where products were designed and made
• when products were designed and made
• whether products can be recycled or reused</td><td colspan="2">Y5 / Y6 pupils should:
• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
• evaluate their ideas and products against their original design specification
• how much products cost to make
• how innovative products are
• how sustainable the materials in products are
• what impact products have beyond their intended purpose
• know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</td></tr>
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<tr><td></td><td colspan="2">Technical knowledge:</td><td colspan="2">Technical knowledge:</td><td colspan="2">Technical knowledge:</td></tr>
<tr><td rowspan="2">Pupils should know:
• about the movement of simple mechanisms such as levers, sliders, wheels and axles
• how freestanding structures can be made stronger, stiffer and more stable</td><td colspan="2">Pupils should know:
• about the simple working characteristics of materials and components
• about the movement of simple mechanisms such as levers, sliders, wheels and axles
• how freestanding structures can be made stronger, stiffer and more stable
• that a 3-D textiles product can be assembled from two identical fabric shapes
• that food ingredients should be combined according to their sensory characteristics
• the correct technical vocabulary for the projects they are undertaking.</td><td colspan="4">Pupils should 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</td></tr>
<tr><td colspan="3">Y3 / Y4 pupils should:
• how mechanical systems such as levers and linkages or pneumatic systems create movement
• 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</td><td colspan="2">Y5 / Y6 pupils should:
• 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
• 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 ingredients</td></tr>
<tr><td>Cooking and Nutrition:</td><td colspan="2">Cooking and Nutrition:</td><td colspan="2">Cooking and Nutrition:</td><td colspan="2">Cooking and Nutrition:</td></tr>
<tr><td>Pupils should know:
• that all food comes from plants or animals
• that everyone should eat at least</td><td colspan="2">Pupils should know:
• that all food comes from plants or animals
• that food has to be farmed, grown elsewhere (e.g. home) or caught
• how to name and sort foods into the five groups on The Eatwell Plate</td><td colspan="4">Pupils should know:
• 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
• 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</td></tr>
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<tr><td>five portions of fruit and vegetables every day
• how to use techniques such as cutting, peeling and grating</td><td colspan="2">• 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</td><td colspan="2">Pupils should know:
• that a healthy diet is made up from a variety and balance of different food and drink, as depicted on The Eatwell Plate
• that to be active and healthy, food and drink are needed to provide energy for the body</td><td colspan="2">Pupils should know:
• that seasons may affect the food available
• how food is processed into ingredients that can be eaten or used in cooking
• that recipes can be adapted to change the appearance, taste, texture and aroma
• that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</td></tr>
<tr><td>Questioning:</td><td>Questioning:</td><td>Questioning:</td><td>Questioning:</td><td>Questioning:</td><td>Questioning:</td><td>Questioning:</td></tr>
<tr><td colspan="3">Pupils respond to:
• Can you describe some of the problems you have with…?
• In what ways do you think we could improve…?
• How does everyone feel about…?
• Tell us how you feel about…
• Which suggestion do you prefer?
• Do you think xxx will work?
• Is xxx the right solution?
• Do you agree?
• Now that you have seen our ideas does anyone have any suggestions for improvements we could make?</td><td colspan="4">Pupils respond to:
• Can you tell us a little more about...?
• Are there any more suggestions we can consider?
• Can you be more specific about…?
• Does anyone have more thoughts about xxx?
Building on responses
• Can we explore your suggestion in a little more detail?
• Can we think a little more about xxx and see how we can develop it?
• Perhaps we could try linking the two ideas about xxx to see if we can solve both problems.
• With so many good suggestions it might be worth going over each one and thinking about how it might work.</td></tr>
<tr><td>Communication:</td><td>Communication:</td><td>Communication:</td><td>Communication:</td><td>Communication:</td><td>Communication:</td><td>Communication:</td></tr>
<tr><td colspan="3">Putting forward a new idea:
• I’ve got a suggestion….
• I think that…because…
Making constructive criticisms of others’ suggestions:
• I think your idea is good but have you thought about…
• I would like to suggest a change…</td><td colspan="4">Discussion in mini plenaries or plenaries – sentence starters / suggestions
Putting forward a new idea:
• I’ve got a suggestion….
• Can I add to your idea…
• Have you thought about…
• I think that…because…
Making constructive criticisms of others’ suggestions:
• I think your idea is good but have you thought about…
• I would like to suggest a change…</td></tr>
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	• Can we think about the suggestion in more detail… • I think there may be some issues with the idea which we need to think about… **Gathering and reviewing ideas** • Shall we stop and think about where we have got to so far? • Let's think about the ideas that everyone has suggested so far. • Is there anything we haven't really considered so far? • I want to suggest that we move the discussion to think about… **Reaching a decision** • So, let's think about all the ideas and decide which we are going to go with. • What we can do is ask each of us which idea we think is the best and then decide • Shall we take a vote to see which idea is the best? • We can list all the good things and all the difficulties about each of the ideas then we can make a suggestion. **Responding to a pupil presentation of work:** **Responding** • Thank you for that question. I think xxx is the best person to answer this point. • That is a very good question which I will answer myself. • Thank you for your point which is about an aspect we have not considered in detail. We will take it back and come back to you with an answer. **Asking for further responses** • That was an interesting question and I wonder if anyone else has anything to add on that aspect? • Does anyone want to ask a question about other aspects we haven't considered so far? • Now that you have seen our ideas does anyone have any suggestions for improvements we could make?

Vocabulary	**Vocabulary:**	**Vocabulary:**	**Vocabulary:**	**Vocabulary:**	**Vocabulary:**	**Vocabulary:**
By the end of Y6 all children will understand and have had an opportunity to use the following vocab:						
Cooking and nutrition: Apron Baking tray Bowl Chopping Board Grater Whisk Ladle Millilitres Litres Pint Grammes Kilogrammes			**Textiles**: Bodkin Fabric Loom Pinking Shears Tape measure Thimble Binca Thread Velcro Hook and eye Wool Silk		**Workshop**: Bench hook Bradawl Crocodile Clip Coping Saw File G – Clamp Jointer Junior Hacksaw Pliers Snips Pulley Gears Tenon Saw Vice Wire Strippers	