DT skills progression document Updated Spring 2023

DESIGNING

Understanding context—uses and purposes Generating, developing, modelling and communicating ideas

MAKING

Planning Practical skills and techniques

EVALUATING

Own ideas and products Existing products Key events and individuals

TECHNICAL KNOWLEDGE

Making products work

COOKING AND NUTRITION

Where food comes from (knowledge) Food preparation, cooking and nutrition

To be used alongside TTeducation - A Guide to Progression in Design and Technology

Designing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Understanding context users and purposes	 Work within a range of contexts, such as imaginary, storybased, home, school, gardens, playgrounds and the local community. Describe what their products are for and who might use them. Say how their products will work. Make simple comments on how they will make their products suitable for their intended users. Use simple design criteria to help develop their ideas 	 Work confidently within a range of contexts, such as 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 products are for themselves or other users. Describe the purpose of their products. 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 	 Work within a range of contexts, such as the home, school, leisure, industry and the wider environment. Identify the purpose of their products. Indicate the design features of their products that will appeal to intended users. Explain how their products work. Gather information about the needs and wants of particular individuals and groups. Have some understanding of how to write their own design criteria 	 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. Gather information about the needs and wants of particular individuals and groups. Develop their own design criteria and use these to inform their ideas 	 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, in detail, how particular parts of their products work. Identify the needs, wants, preferences and values of particular individuals and groups. Develop a simple design specification to guide their thinking 	 Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Identify, describe and discuss with peers 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. Carry out / use research, using surveys, interviews, questionnaires and web-based resources. Identify the needs, wants, preferences and values of particular individuals and groups. Develop a design specification to guide their thinking.
Generating, developing, modelling and communicating ideas.	 Use knowledge of existing products to help come up with ideas. Communicate ideas by talking and drawing. Use information and communication 	 Generate ideas by drawing on their own experiences. Use knowledge of existing products to help come up with ideas. Develop and communicate ideas 	 Use discussion to share ideas. Use annotated sketches, cross- sectional drawings and exploded diagrams to develop and communicate their ideas. 	 Share and clarify ideas through discussion. Use annotated sketches, crosssectional drawings to develop and communicate their ideas. 	 Share, clarify and develop ideas through discussion. Model their ideas using prototypes Use annotated sketches, cross-sectional 	 Share, clarify and develop ideas through discussion and peer critique sessions. Model their ideas using prototypes and pattern pieces. Use annotated

technology, where appropriate, to develop and communicate their ideas	by talking and drawing. Model ideas by exploring materials, components and construction kits. Use information and communication technology, where appropriate, to develop and communicate their ideas	communication technology to aid the idea thought process. • Make decisions that take account of the availability of resources. communication technology to aid the idea aid idea idea account of the availability of account of the account of the account of the availability of account of the account of t	drawings and exploded diagrams to develop and communicate their ideas. Use computeraided design to develop and communicate their ideas. Use computeraided design to develop and communicate their idea. Generate ideas, drawing on research. Make design decisions, taking account of constraints such as resources.	sketches, cross- sectional drawings and exploded diagrams to develop and communicate their ideas. Use computer-aided design to develop and communicate their idea. Generate innovative ideas, drawing on research. Make design decisions, taking account of constraints such as time, resources and cost
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Making	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning	 Plan by suggesting what to do next. Select from a range of tools and equipment. Identify some materials as being a good choice based on characteristics. 	 Plan by suggesting what to do in a suitable order. Select from a range of tools and equipment, explaining their choices. Select from a range of materials and components according to their characteristics 	 Select tools and equipment suitable for the task. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Select materials and components suitable for the task. Explain their choice of materials Order the main stages of making 	 Select tools and equipment suitable for the task. Explain their choice of tools and equipment to others. Select materials and components suitable for the task. Explain their choice of materials and discuss their reason for choosing them. Order the main stages of making 	 Select tools and equipment suitable for the task. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Select materials and components suitable for the task. Explain their choice of materials and components according to functional properties and aesthetic qualities Produce 	 Select tools and equipment suitable for the task. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Select materials and components suitable for the task. Explain their choice of materials and components according to functional properties and aesthetic qualities Produce

				 appropriate lists of tools, equipment and materials needed. formulate step-by-step plans as a guide to making 	 appropriate lists of tools, equipment and materials that they need. Formulate step-bystep plans as a guide to making
Follow procedures for safety and hygiene. Use a range of materials and components Measure, mark out and shape materials and components. Assemble, join and combine materials and components. Use finishing techniques, including those from art and design Practical skills and techniques	construction materials and kits, textiles, food ingredients and mechanical components. • Measure, mark out, cut and shape	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 Measure, mark out, cut and shape materials and components Assemble, join and combine materials and components with some accuracy	 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 Measure, mark out, cut and shape materials and components 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 	 Ensure procedures for safety and hygiene are followed. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components 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 	 Ensure procedures for safety and hygiene are followed. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components 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 and procedures Demonstrate resourcefulness when tackling practical problems

Evaluating	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Own ideas and products	 Talk about their design ideas and what they are making. Make simple judgements about their products and ideas against design criteria. Make simple suggestions on how their products could be improved. 	 Talk about their design ideas and what they are making. Make judgements about their products and ideas against design criteria. Suggest how their products could be improved 	Identify strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products	 Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products 	 Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products Evaluate their ideas and products against their original design specification 	 Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products 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
Existing products	 What products are for how products work how products are used where products might be used what materials products are made from what they like and dislike about products 	 What products are for what products are for what products are for how products work how products are used where products might be used what materials products are made from what they like and 	 Investigate and analyse 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 	 Investigate and analyse 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 	 Investigate and analyse 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 	 Investigate and analyse 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

	dislike about products	purposes. 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	purposes. How well products meet user needs and wants. 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	achieve their purposes. How well products meet user needs and wants. 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.	purposes. How well products meet user needs and wants. 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 How products can generate further designs.
Key events and individuals.		Children should know About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products	Children should know About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products Link to focused architects in Art unit. For example Wrenn. Links to Science focused person.	Children should know About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products Link to focused architects in Art unit. For example Wrenn. Links to Science focused person.

	Technical Knowledge	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Across KS1 pupils	Across KS1 pupils	Across KS2 pupils	Across KS2 pupils	Across pupils should	Across pupils should
- 1		should know	should know	should know	should know	know	know
- 1	Making	 About the simple 	 About the simple 	 How to use learning 	 How to use learning 	How to use learning	 How to use learning
- 1	products work	working	working	from science to	from science to help	from science to	from science to help
- 1		characteristics of	characteristics of	help design and	design and make	help design and	design and make
		materials and	materials and	make products that	products that work.	make products that	products that work.

- 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.
- technical
 vocabulary for the
 projects they are
 undertaking

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- 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

- 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

Lower KS2 Should also know

- 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.

- How to use learning from mathematics to help design and make products that work.
- That materials have both functional properties and aesthetic qualities.
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- That mechanical and electrical systems have an input, process and output.
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- 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

- 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

Upper KS2 Should also know

- 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 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

Upper KS2 Should also Know

- 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 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 How to use learning from science and maths to help design and make products that work. 	 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 How to use learning from science and maths to help design and make products that work.
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Cooking and nutrition	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Where food comes from (knowledge)	 Across KS1 pupils should know: that all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught 	 Across KS1 pupils should know: that all food comes from plants or animals that food has to be farmed, grown elsewhere (e.g. home) or caught 	Across KS2 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	Across KS2 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	Across KS2 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 In late KS2 pupils should also know: • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking	Across KS2 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 In late KS2 pupils should also know: • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking

Food preparation cooking an nutrition

Across KS1 pupils should know:

- how to name and sort foods into the five groups in The eatwell plate
- 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

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- 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

Across KS2 pupils should know:

- 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

In early KS2 pupils should also know:

- that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The eat well plate
- that to be active and healthy, food and drink are needed to provide energy for the body

Across KS2 pupils should know:

- how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source
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- how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking

In late KS2 pupils should also know:

- 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

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