

Design & Technology: Skills & Knowledge Progression

Area	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	I can make observations about the features of objects I can use my senses to explore and describe objects? I can talk about what I want to make and what tools and equipment I might use	Understanding contexts: I can work within a range of familiar contexts, including story-based, home, school, gardens, playgrounds, local community, industry and the wider environment I can state what products I am designing and making and can say whether my products are for myself or other users. I will use simple design criteria to develop my ideas. Generating, developing, modelling and communicating ideas I can generate ideas by drawing on my own experiences and will use knowledge of existing products to help come up with ideas. I can develop and communicate ideas by talking and drawing	Understanding contexts: I can work more confidently within a range of familiar contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. I can state what products I am designing and making and say whether my products are for myself or other users. I can say how my products will work and how I will make my products suitable for the intended users I can use simple design criteria to help develop my ideas Generating, developing, modelling and communicating ideas. I can generate ideas by drawing on my own experiences and can use knowledge of existing products to help come with ideas. I can develop and communicate ideas by talking and drawing and can model ideas by exploring materials, components and by making templates and mock- ups. I can use information and communication technology, where appropriate, to develop and communicate my ideas	Understanding contexts: I can work within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment I can begin to describe the purpose of my products I can indicate the design features of my products that will appeal to intended users I can explain how particular parts of my products work Generating, developing, modelling and communicating ideas. I can share and clarify ideas through discussion I can model my ideas using prototypes and pattern pieces I can use annotated sketches, to develop and communicate my ideas I can use computer-aided design to develop and communicate my ideas I can generate realistic ideas, focusing on the needs of the user	Understanding contexts: I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment I can describe the purpose of my products I can indicate the design features of my products that will appeal to intended users I can explain how particular parts of my products work I can gather information about the needs and wants of particular individuals and groups I can develop my own design criteria and use these to inform my ideas Generating, developing, modelling and communicating ideas. I can share and clarify ideas through discussion I can model my ideas using prototypes and pattern pieces I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate my ideas I can use annotated sketches, and cross-sectional drawings to develop and ideas I can use computer-aided design to develop and communicate my ideas I can generate realistic ideas, focusing on the needs of the user and make design decisions that take account of the availability of resources	Understanding contexts: I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment I can describe the purpose of my products I can indicate the design features of my products that will appeal to intended users I can explain how particular parts of my products work I can carry out research, using surveys, interviews, questionnaires and web-based resources I can identify the needs, wants, preferences and values of particular individuals and groups. Generating, developing, modelling and communicating ideas. I can share and clarify ideas through discussion I can model my ideas using prototypes and pattern pieces I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate my ideas and know that annotations are ways of showing comments and notes and that I can be revised during the designing and making process. I can use computer-aided design to develop and communicate my ideas I can generate innovative ideas, drawing on research	Understanding contexts: I can work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment I can describe the purpose of my products I can indicate the design features of my products that will appeal to intended users I can explain how particular parts of my products work I can carry out research, using surveys, interviews, questionnaires and web-based resources I can identify the needs, wants, preferences and values of particular individuals and groups I can develop a simple design specification to guide my thinking I can Generate, develop, model and communicate ideas Generating, developing, modelling and communicating ideas. I can share and clarify ideas through discussion I can model I ideas using prototypes and pattern pieces I can use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate my ideas I can use computer-aided design to develop and communicate my ideas I can generate innovative ideas, drawing on research I can make design decisions, taking account of constraints such as time, resources and cost

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Planning	I can plan how best to approach a task Children can plan by drawing ideas and designs	I can plan by suggesting what to do next I can select from a range of tools and equipment, I can select from a range of materials and components according to characteristics	I can plan by suggesting what to do next I can select from a range of tools and equipment and explain my choices I can select from a range of materials and components according to characteristics and explain my choices	Pupil can select tools and equipment suitable for the task and explain my choice of tools and equipment. I can select materials and components suitable for the task I can explain I choice of materials and components I can order the main stages of making	I can select tools and equipment suitable for the task I can explain my choice of tools and equipment in relation to the skills and techniques I will be using I can select materials and components suitable for the task I can explain my choice of materials and components according to functional properties and aesthetic qualities I can order the main stages of making and explain my decisions for the order of completing stages.	I can select tools and equipment suitable for the task I can explain my choice of tools and equipment in relation to the skills and techniques I will be using I can select materials and components suitable for the task I can explain my choice of materials and components according to functional properties and aesthetic qualities I can produce appropriate lists of tools, equipment and materials that I need I can formulate step-by-step plans as a guide to making	I can select tools and equipment suitable for the task I can explain my choice of tools and equipment in relation to the skills and techniques I will be using I can select materials and components suitable for the task I can explain I choice of materials and components according to functional properties and aesthetic qualities I can produce appropriate lists of tools, equipment and materials that I need, taking into consideration constraints such as resources and cost I can formulate step-by-step plans as a guide to making, explaining my reasons for completing steps in the order I have chosen.

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Practical skills and techniques	I can select appropriate resources and tools and use the tools safely	I can follow procedures for safety and hygiene	I can follow procedures for safety and hygiene	I can follow procedures for safety and hygiene	I can follow procedures for safety and hygiene	I can follow procedures for safety and hygiene	I can follow procedures for safety and hygiene
	I can build, combine, join, shape to make products	I can use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components	I can use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components	I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components	I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components	I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components	I can use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components
		I can measure, mark out, cut and shape materials and components	I can measure, mark out, cut and shape materials and components	I can measure, mark out, cut and shape materials and components with some accuracy	I can measure, mark out, cut and shape materials and components with increasing accuracy	I can mostly accurately measure, mark out, cut and shape materials and components	I can accurately measure, mark out, cut and shape materials and components
		I can assemble, join and combine materials and components	I can assemble, join and combine materials and components	I can assemble, join and combine materials and components with some accuracy	I can assemble, join and combine materials and components with increasing accuracy	I can mostly accurately assemble, join and combine materials and components	I can accurately assemble, join and combine materials and components
		I can use finishing techniques, including those from art and design	I can use finishing techniques, including those from art and design	I can apply a range of finishing techniques, including those from art and design, with some accuracy	I can apply a range of finishing techniques, including those from art and design, with increasing accuracy	I can mostly accurately apply a range of finishing techniques, including those from art and design.	I can accurately apply a range of finishing techniques, including those from art and design
						I can begin to demonstrate resourcefulness when tackling practical problems	I can use techniques that involve a number of steps
							I can demonstrate resourcefulness when tackling practical problems

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Evaluating	I am excited about what I have made and can talk about my product. I can talk about what I like and dislike about my product, and what I might change to make it better.	Own ideas and products: I can talk about my design ideas and what I have made I can make simple judgements about my products and ideas against design criteria Existing products: I can explore ideas about: • <i>what products are</i> • <i>who products are for</i> • <i>what products are for</i> • <i>how products work</i> • <i>where products might be used</i> • <i>what materials products are made from</i> • <i>what I like and dislike about products</i>	Own ideas and products: I can talk about my design ideas and what I have made I can make simple judgements about my products and ideas against design criteria I can suggest how my products could be improved Existing products: I can explore ideas about: • <i>what products are</i> • <i>who products are for</i> • <i>what products are for</i> • <i>how products work</i> • <i>how products are used</i> • <i>where products might be used</i> • <i>what materials products are made from</i> • <i>what I like and dislike about products</i>	Own ideas and products: I can begin to identify the strengths and areas for development in my ideas and products I can consider the views of others to improve my work I can refer to design criteria as I evaluate my product Existing products: I can learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products I can investigate and analyse: • <i>how well products have been designed</i> • <i>how well products have been made</i> • <i>why materials have been chosen</i> • <i>who designed and made the products</i> • <i>where products were designed and made</i> • <i>when products were designed and made</i> • <i>whether products can be recycled or reused</i>	Own ideas and products: I can identify the strengths and areas for development in I ideas and products and use I design criteria to evaluate I completed products I can consider the views of others, including intended users, to improve my work I can refer to design criteria as I evaluate my product Existing products: I can learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products I can investigate and analyse: • <i>how well products have been designed</i> • <i>how well products have been made</i> • <i>why materials have been chosen</i> • <i>what methods of construction have been used</i> • <i>how well products work</i> • <i>how well products achieve I purposes</i> • <i>how well products meet user needs and wants</i> • <i>who designed and made the products</i> • <i>where products were designed and made</i> • <i>when products were designed and made</i> • <i>whether products can be recycled or reused</i>	Own ideas and products: I can identify the strengths and areas for development in my ideas and products I can consider the views of others, including intended users, to improve my work I can critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make Existing products: I can learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products I can investigate and analyse: • <i>how well products have been designed</i> • <i>how well products have been made</i> • <i>why materials have been chosen</i> • <i>what methods of construction have been used</i> • <i>how well products work</i> • <i>how well products achieve I purposes</i> • <i>how well products meet user needs and wants</i> • <i>who designed and made the products</i> • <i>where products were designed and made</i> • <i>when products were designed and made</i> • <i>whether products can be recycled or reused</i> • <i>how much products cost to make</i> • <i>how innovative products are</i> • <i>how sustainable the materials in products are</i> • <i>what impact products have beyond I intended purpose</i>	Own ideas and products: I can identify the strengths and areas for development in my ideas and products I can consider the views of others, including intended users, to improve my work I can critically evaluate the quality of the design, manufacture and fitness for purpose of my products as I design and make I can evaluate my ideas and products against the original design specification Existing products: I can learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products I can investigate and analyse: • <i>how well products have been designed</i> • <i>how well products have been made</i> • <i>why materials have been chosen</i> • <i>what methods of construction have been used</i> • <i>how well products work</i> • <i>how well products achieve I purposes</i> • <i>how well products meet user needs and wants</i> • <i>who designed and made the products</i> • <i>where products were designed and made</i> • <i>when products were designed and made</i> • <i>whether products can be recycled or reused</i> • <i>how much products cost to make</i> • <i>how innovative products are</i> • <i>how sustainable the materials in products are</i> • <i>what impact products have beyond I intended purposes</i>

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Technical knowledge	I can learn about the simple working characteristics of materials and components	I can learn about the simple working characteristics of materials and components	I can learn about the simple working characteristics of materials and components	I know how to use learning from science to help design and make products that work	I know how to use learning from science to help design and make products that work	I know how to use learning from science to help design and make products that work	I know how to use learning from science to help design and make products that work
		I can learn about the movement of simple mechanisms such as levers, sliders, wheels and axles	I can learn about the movement of simple mechanisms such as levers, sliders, wheels and axles	I know how to use learning from mathematics to help design and make products that work	I know how to use learning from mathematics to help design and make products that work	I know how to use learning from mathematics to help design and make products that work	I know how to use learning from mathematics to help design and make products that work
		I can learn about how freestanding structures can be made stronger, stiffer and more stable	I can learn about how freestanding structures can be made stronger, stiffer and more stable	I know that materials have both functional properties and aesthetic qualities	I know that materials have both functional properties and aesthetic qualities	I know that materials have both functional properties and aesthetic qualities	I know that materials have both functional properties and aesthetic qualities
		I can know that food ingredients should be combined according to I sensory characteristics	I know that food ingredients should be combined according to sensory characteristics	I know that mechanical and electrical systems have an input, process and output	I know that materials can be combined and mixed to create more useful characteristics	I know that materials can be combined and mixed to create more useful characteristics	I know that materials can be combined and mixed to create more useful characteristics
			I know and use the correct technical vocabulary for the projects I am undertaking	I know and use the correct technical vocabulary for the projects I am undertaking	I know that mechanical and electrical systems have an input, process and output	I know that mechanical and electrical systems have an input, process and output	I know that mechanical and electrical systems have an input, process and output
				I know how mechanical systems such as levers and linkages or pneumatic systems create movement	I know and use the correct technical vocabulary for the projects I am undertaking	I know and use the correct technical vocabulary for the projects I am undertaking	I know and use the correct technical vocabulary for the projects I am undertaking
				I know how simple electrical circuits and components can be used to create functional products	I know how mechanical systems such as levers and linkages or pneumatic systems create movement	I know how mechanical systems such as cams or pulleys or gears create movement	I know how mechanical systems such as cams or pulleys or gears create movement
				I know how to make strong, stiff structures	I know how simple electrical circuits and components can be used to create functional products	I know how more complex electrical circuits and components can be used to create functional products	I know how more complex electrical circuits and components can be used to create functional products
				I know that food ingredients can be fresh, pre-cooked and processed	I know how to make strong, stiff structures	I know how to reinforce and strengthen a 3D framework	I know how to reinforce and strengthen a 3D framework
					I know that food ingredients can be fresh, pre-cooked and processed	I know that a recipe can be adapted by adding or substituting one or more ingredients	I know that a recipe can be adapted by adding or substituting one or more ingredients

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Cooking and nutrition	Children expand their knowledge and understanding of the world, finding out about different ingredients, what happens when things are mixed together and how heat and cold changes substances. Through preparing and eating food, children can find out about other cultures and traditions.	Where food comes from: I know that all food comes from plants or animals I know that food has to be farmed, grown elsewhere (e.g., home) or caught Food preparation, cooking and nutrition: I know how to name and sort foods into the five groups in The Eatwell plate I know that everyone should eat at least five portions of fruit and vegetables every day I know how to prepare simple dishes safely and hygienically, without using a heat source I know how to use techniques such as cutting, peeling and grating	Where food comes from: I know that all food comes from plants or animals I know that food has to be farmed, grown elsewhere (e.g., home) or caught Food preparation, cooking and nutrition: I know how to name and sort foods into the five groups in The Eatwell plate I know that everyone should eat at least five portions of fruit and vegetables every day I know how to prepare simple dishes safely and hygienically, without using a heat source I know how to use techniques such as cutting, peeling and grating	Where food comes from: I know that a recipe can be adapted a by adding or substituting one or more ingredients I 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 Food preparation, c ooking and nutrition: I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate I know that to be active and healthy, food and drink are needed to provide energy for the body	Where food comes from: I know that a recipe can be adapted a by adding or substituting one or more ingredients I 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 Food preparation, cooking and nutrition: I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate I know that to be active and healthy, food and drink are needed to provide energy for the body	Where food comes from: I know that a recipe can be adapted a by adding or substituting one or more ingredients I 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 I know that seasons may affect the food available I know how food is processed into ingredients that can be eaten or used in cooking Food preparation, cooking and nutrition: I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate I know that to be active and healthy, food and drink are needed to provide energy for the body I know that recipes can be adapted to change the appearance, taste, texture and aroma I know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health	Where food comes from: I know that a recipe can be adapted a by adding or substituting one or more ingredients I 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 I know that seasons may affect the food available I know how food is processed into ingredients that can be eaten or used in cooking Food preparation, cooking and nutrition: I know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking I know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate I know that to be active and healthy, food and drink are needed to provide energy for the body I know that recipes can be adapted to change the appearance, taste, texture and aroma I know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health