



Highfield Primary School

Design & Technology Progression Map

	Nursery	Reception
Understanding the World	<ul style="list-style-type: none"> Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Show interest in different occupations. Explore how things work. Talk about the differences between materials and changes they notice. 	<ul style="list-style-type: none"> Explore the natural world around them. Observe and interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water.
Expressive Art and Design	<ul style="list-style-type: none"> Explore different materials freely, to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures. Create closed shapes with continuous lines and begin to use these shapes to represent objects. Draw with increasing complexity and detail, such as representing a face with a circle and including details. Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Join different materials and explore different textures. 	<ul style="list-style-type: none"> Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills
Mathematics	<ul style="list-style-type: none"> Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc. Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. 	<ul style="list-style-type: none"> Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it. Continue, copy and create repeating patterns.

Designing	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Understanding contexts, users and purposes	<ul style="list-style-type: none"> Working within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. Stating what products they are designing and making. 	<ul style="list-style-type: none"> Working confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. Stating what products they are designing and making. 	<ul style="list-style-type: none"> Working confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describing the purpose of their products. Indicating the design features of their products 	<ul style="list-style-type: none"> Working confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describing the purpose of their products. Indicating the design features of their products 	<ul style="list-style-type: none"> Working confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describing the purpose of their products. Indicating the design features of their products 	<ul style="list-style-type: none"> Working confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment Describing the purpose of their products. Indicating the design features of their products that will appeal to intended users.

	<ul style="list-style-type: none"> - Saying whether their products are for themselves or other users. - Describing what their products are for. - Saying how their products will work. 	<ul style="list-style-type: none"> - Saying whether their products are for themselves or other users. - Describing what their products are for. - Saying how their products will work. - Saying how they will make their products suitable for their intended users. - Using simple design criteria to help develop their ideas. 	<p>that will appeal to intended users.</p> <ul style="list-style-type: none"> - Explaining how particular parts of their products work. - Develop their own design criteria and use these to inform their ideas. 	<p>that will appeal to intended users.</p> <ul style="list-style-type: none"> - Explaining how particular parts of their products work. - Gathering information about the needs and wants of individuals and groups. - Develop their own design criteria and use these to inform their ideas. 	<p>that will appeal to intended users.</p> <ul style="list-style-type: none"> - Explaining how particular parts of their products work. - Gathering information about the needs and wants of individuals and groups. - Develop their own design criteria and use these to inform their ideas. - Carrying out small-scale research in class. - Identifying the needs, wants, preferences and values of particular individuals and groups. 	<ul style="list-style-type: none"> - Explaining how particular parts of their products work. - Gathering information about the needs and wants of individuals and groups. - Develop their own design criteria and use these to inform their ideas. - Carrying out research, using surveys, interviews, questionnaires and web-based resources. - Identifying the needs, wants, preferences and values of particular individuals and groups.
Generating, developing, modelling and communicating ideas	<ul style="list-style-type: none"> - Generating ideas by drawing on their own experiences. - Using knowledge of existing products to help come up with ideas. - Developing and communicating ideas by talking and drawing. 	<ul style="list-style-type: none"> - Generating ideas by drawing on their own experiences. - Using knowledge of existing products to help come up with ideas. - Developing and communicating ideas by talking and drawing. - Modelling ideas by exploring materials, components and construction kits and by making templates and mock-ups. - Using information and communication technology, where appropriate, to develop and communicate their ideas. 	<ul style="list-style-type: none"> - Sharing and clarifying ideas through discussion. - Modelling their ideas using prototypes and pattern pieces. - Using annotated sketches and cross-sectional drawings to develop and communicate their ideas. 	<ul style="list-style-type: none"> - Sharing and clarifying ideas through discussion. - Modelling their ideas using prototypes and pattern pieces. - Using annotated sketches and cross-sectional drawings to develop and communicate their ideas. 	<ul style="list-style-type: none"> - Sharing and clarifying ideas through discussion. - Modelling their ideas using prototypes and pattern pieces. - Using annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - Generating realistic ideas, focusing on the needs of the user. 	<ul style="list-style-type: none"> - Sharing and clarifying ideas through discussion. - Modelling their ideas using prototypes and pattern pieces. - Using annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. - Using computer-aided design to develop and communicate their ideas. - Generating realistic ideas, focusing on the needs of the user. - Generating innovative ideas, drawing on research.
Making	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning	<ul style="list-style-type: none"> - Planning by suggesting what to do next. - Selecting from a range of tools and equipment. 	<ul style="list-style-type: none"> - Planning by suggesting what to do next. - Selecting from a range of tools and equipment, explaining their choices. - Select from a range of materials and components according to their characteristics. 	<ul style="list-style-type: none"> - Selecting tools and equipment suitable for the task - Explaining their choice of tools and equipment. - Selecting materials and components suitable for the task. - Explaining their choice of materials and components according to functional properties and aesthetic qualities. 	<ul style="list-style-type: none"> - Selecting tools and equipment suitable for the task - Explaining their choice of tools and equipment. - Selecting materials and components suitable for the task. - Explaining their choice of materials and components according to functional properties and aesthetic qualities. 	<ul style="list-style-type: none"> - Selecting tools and equipment suitable for the task - Explaining their choice of tools and equipment in relation to the skills and techniques they will be using. - Selecting materials and components suitable for the task. - Explaining their choice of materials and components according to functional properties and aesthetic 	<ul style="list-style-type: none"> - Selecting tools and equipment suitable for the task - Explaining their choice of tools and equipment in relation to the skills and techniques they will be using. - Selecting materials and components suitable for the task. - Explaining their choice of materials and components according to functional properties and aesthetic qualities.

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Practical skills and techniques	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Using a range of materials and components, including construction materials and kits, textiles and food ingredients. Measuring, marking out, cutting and shaping materials. Assembling, joining and combining materials. 	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Using a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. Measuring, marking out, cutting and shaping materials and components. Assembling, joining and combining materials and components Using finishing techniques, including those from art and design. 	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Using a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients and mechanical components. Measuring, marking out, cutting and shaping materials and components with some accuracy. Assembling, joining and combining materials and components with some accuracy Applying a range of finishing techniques, including those from art and design, with some accuracy. 	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Using a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Measuring, marking out, cutting and shaping materials and components with increased accuracy. Assembling, joining and combining materials and components with increased accuracy. Applying a range of finishing techniques, including those from art and design, with accuracy. 	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Accurately measuring, marking out, cutting and shaping materials and components. Accurately assembling, joining and combining materials and components. Accurately applying a range of finishing techniques, including those from art and design. Demonstrating resourcefulness when tackling practical problems. 	<ul style="list-style-type: none"> Following procedures for safety and hygiene. Accurately measuring, marking out, cutting and shaping materials and components. Accurately assembling, joining and combining materials and components. Accurately applying a range of finishing techniques, including those from art and design. Demonstrating resourcefulness when tackling practical problems.
Evaluating	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Own ideas and products	<ul style="list-style-type: none"> Talking about their design ideas and what they are making. Making simple judgements about their products and ideas. 	<ul style="list-style-type: none"> Talking about their design ideas and what they are making. Making simple judgements about their products and ideas against design criteria. Suggesting how their products could be improved. 	<ul style="list-style-type: none"> Identifying the strengths and areas for development in their ideas and products. Considering the views of others to improve their work. Referring to their design criteria as they design and make. Using their design criteria to evaluate their completed products. 	<ul style="list-style-type: none"> Identifying the strengths and areas for development in their ideas and products. Considering the views of others to improve their work. Referring to their design criteria as they design and make. Using their design criteria to evaluate their completed products. 	<ul style="list-style-type: none"> Identifying the strengths and areas for development in their ideas and products. Considering the views of others, including intended users, to improve their work. Critically evaluating the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluating their ideas and products against their original design specification. 	<ul style="list-style-type: none"> Identifying the strengths and areas for development in their ideas and products. Considering the views of others, including intended users, to improve their work. Critically evaluating the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluating their ideas and products against their original design specification.
Existing products	<ul style="list-style-type: none"> Exploring what products are. Exploring who products are for. Exploring what products are for. Understanding how products work. 	<ul style="list-style-type: none"> Exploring what products are. Exploring who products are for. Exploring what products are for. 	<ul style="list-style-type: none"> Analysing how well products have been designed. Investigating how well products have been made. 	<ul style="list-style-type: none"> Analysing how well products have been designed. Investigating how well products have been made. 	<ul style="list-style-type: none"> Analysing how well products have been designed. Investigating how well products have been made. Understanding why materials have been chosen. 	<ul style="list-style-type: none"> Analysing how well products have been designed. Investigating how well products have been made. Understanding why materials have been chosen.

	<ul style="list-style-type: none"> - Understanding how products are used. - Understanding where products might be used. - Understanding what materials products are made from. 	<ul style="list-style-type: none"> - Understanding how products work. - Understanding how products are used. - Understanding where products might be used. - Understanding what materials products are made from. - Describing what they like and dislike about products. 	<ul style="list-style-type: none"> - Understanding why materials have been chosen. -Understanding what methods of construction have been used. - Investigating how well products work. -Analysing how well products achieve their purposes. 	<ul style="list-style-type: none"> - Understanding why materials have been chosen. -Understanding what methods of construction have been used. - Investigating how well products work. -Analysing how well products achieve their purposes. - Understanding who designed and made the products. - Understanding when products were designed and made. 	<ul style="list-style-type: none"> -Understanding what methods of construction have been used. - Investigating how well products work. -Analysing how well products achieve their purposes. - Analysing how well products meet user needs and wants. - Understanding how much products cost to make. - Understanding how innovative products are. - Understanding how sustainable the materials in products are. 	<ul style="list-style-type: none"> -Understanding what methods of construction have been used. - Investigating how well products work. -Analysing how well products achieve their purposes. - Analysing how well products meet user needs and wants. - Understanding how much products cost to make. - Understanding how innovative products are. - Understanding how sustainable the materials in products are. - Discussing what impact products have beyond their intended purpose.
Key events and individuals	Not a requirement in KS1.	Not a requirement in KS1.	<ul style="list-style-type: none"> - Knowing about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. - Explaining how a particular form has played an important role in design in different historical periods. 	<ul style="list-style-type: none"> - Knowing about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. 	<ul style="list-style-type: none"> - Knowing about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. - Evaluating the impact of Design & Technology on daily life and the wider world. 	<ul style="list-style-type: none"> - Knowing about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.
Technical Knowledge	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Making products work	<ul style="list-style-type: none"> - Knowing about the simple working characteristics of materials and components. - Knowing about the movement of simple mechanisms such as levers, sliders, wheels and axles. - Knowing how products can be made stronger. 	<ul style="list-style-type: none"> - Knowing about the simple working characteristics of materials and components. - Knowing about the movement of simple mechanisms such as levers, sliders, wheels and axles. - Knowing how freestanding structures can be made stronger, stiffer and more stable. 	<ul style="list-style-type: none"> - Knowing how to use learning from maths to help design and make products that work. - Understanding that materials have both functional properties and aesthetic qualities. - Understanding how mechanical systems such as levers and linkages or pneumatic systems create movement. - Knowing how to make strong, stiff shell structures. 	<ul style="list-style-type: none"> - Knowing how to use learning from maths and science to help design and make products that work. - Understanding that materials have both functional properties and aesthetic qualities. - Knowing that mechanical and electrical systems have an input, process and output. - Understanding how simple electrical circuits and components can be used to create functional products. 	<ul style="list-style-type: none"> - Knowing how to use learning from maths and science to help design and make products that work. - Understanding that materials have both functional properties and aesthetic qualities. - Understanding how mechanical systems such as cams or pulleys or gears create movement. 	<ul style="list-style-type: none"> - Knowing how to use learning from maths and science to help design and make products that work. - Understanding how more complex electrical circuits and components can be used to create functional products. - Knowing how to program a computer to monitor changes in the environment and control their products.
Cooking and Nutrition	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Where food comes from	<ul style="list-style-type: none"> - Understanding the difference between fruits and vegetables. - Describing and grouping fruits by texture and taste. 	<ul style="list-style-type: none"> - Understanding that all food comes from plants or animals. - Knowing that food has to be farmed, grown elsewhere (e.g. home) or caught. 	<ul style="list-style-type: none"> - Understanding 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. 	<ul style="list-style-type: none"> - Understanding 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. 	<ul style="list-style-type: none"> - Knowing how food is processed into ingredients that can be eaten or used in cooking. 	<ul style="list-style-type: none"> - Knowing how food is processed into ingredients that can be eaten or used in cooking. -Understanding that seasons may affect the food available.
Food preparation, cooking and nutrition	<ul style="list-style-type: none"> - Knowing that everyone should eat at least five portions of fruit and vegetables every day - Understanding how to prepare simple dishes safely and hygienically, without using a heat source - Knowing how to use techniques such as cutting, peeling and grating. 	<ul style="list-style-type: none"> - Knowing how to name and sort foods into the five groups in The Eatwell plate - Understanding how to prepare simple dishes safely and hygienically, without using a heat source - Knowing how to use techniques such as cutting, peeling and grating. 	<ul style="list-style-type: none"> - Knowing how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Knowing how to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading. - Understanding that a healthy diet is made up from a variety and balance of different food and drink. 	<ul style="list-style-type: none"> - Knowing how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Knowing how to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading. - Understanding that a healthy diet is made up from a variety and balance of different food and drink. - Understanding that to be active and healthy, food and drink are needed to provide energy for the body. 	<ul style="list-style-type: none"> - Knowing how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Knowing how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. -Understanding the impact of the cost and importance of budgeting when cooking. 	<ul style="list-style-type: none"> - Knowing how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. - Knowing how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. -Understanding that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.