

Design and Technology Curriculum Progression Map



This progression map details the skills and knowledge that children at The Free School Norwich will gain at each stage of the curriculum.

Design

The Design process is iterative, and children should be encouraged to revisit and revise their designs as they progress through each stage. Additionally, incorporating feedback and collaboration with peers is essential for fostering creativity and critical thinking in the Design and Technology curriculum.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Explore and Discover: Encourage creativity and exploration through play with construction toys like building blocks, Lego, and other manipulative materials. Provide opportunities for artistic activities like drawing, painting, and collage to explore basic shapes, colours, and patterns.</p>	<p>Understand the Brief: Introduce design briefs for creative projects, such as designing a simple toy or a character. Help students understand the problem they need to solve and who their design is for.</p> <p>Research and Gather Ideas: Encourage students to gather ideas from their own experiences and the world around them. Discuss existing designs to inspire their own creativity.</p> <p>Generate Ideas: Support students in brainstorming and sketching various design possibilities. Encourage them to share their ideas with peers and discuss different approaches.</p>	<p>Understand the Brief: Continue to present design briefs for projects, but with more complexity and considerations. Encourage students to think about user needs and preferences when designing.</p> <p>Research and Gather Ideas: Support students in researching similar designs and existing products to gain inspiration and understanding of design principles.</p> <p>Generate Ideas: Encourage more detailed sketches and annotated drawings to communicate design concepts effectively. Emphasize the importance of multiple iterations.</p> <p>Select and Develop: Help students</p>	<p>Identify the Problem: Present design challenges that require problem-solving and critical thinking. Encourage students to consider user needs and constraints.</p> <p>Research and Gather Ideas: Support students in conducting research to understand the context of their design project better. Discuss different design approaches and styles.</p> <p>Generate Ideas: Encourage students to explore a range of design possibilities, considering materials, mechanisms, and basic electronics.</p> <p>Select and Develop: Guide students in selecting the most appropriate design</p>	<p>Identify the Problem: Present more open-ended design challenges that allow students to explore their interests and passions within the design process.</p> <p>Research and Gather Ideas: Encourage independent research to gain a deeper understanding of the context and potential users. Introduce the importance of ethical considerations in design.</p> <p>Generate Ideas: Encourage students to think outside the box and consider innovative solutions to their design problems. Support them in exploring different design possibilities and</p>	<p>Identify the Problem: Challenge students with more complex and real-world design problems, such as designing products for specific user groups or addressing environmental issues.</p> <p>Research and Gather Ideas: Encourage in-depth research, including interviews and surveys, to inform the design process. Discuss the importance of sustainable design practices.</p> <p>Generate Ideas: Encourage creativity and risk-taking in generating design ideas. Support students in exploring multiple design concepts with the potential for significant impact.</p> <p>Select and Develop: Guide students in</p>	<p>Identify the Problem: Present complex and ambitious design challenges that require students to think critically and demonstrate their understanding of the design process.</p> <p>Research and Gather Ideas: Encourage students to conduct in-depth research, considering social, cultural, and environmental implications of their designs. Emphasize the importance of originality and creativity.</p> <p>Generate Ideas: Challenge students to push their creative boundaries and explore truly innovative and unique design concepts.</p> <p>Select and Develop: Guide students in</p>	<p>Identify the Problem: Present open-ended design challenges that require critical thinking and problem-solving at a higher level. Encourage students to tackle real-world issues, such as sustainable design, accessibility, or social impact projects.</p> <p>Research and Analysis</p> <p>Guide students in conducting comprehensive research, including primary and secondary sources, to gain a deep understanding of the design context. Encourage critical analysis of existing products, considering their strengths, weaknesses, and potential for improvement.</p>

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	<p>Select and Develop: Help students choose the most promising design idea from their sketches. Guide them in developing and refining that idea further.</p>	<p>evaluate their design ideas based on practicality, feasibility, and user feedback. Guide them in making design improvements.</p>	<p>concept and developing it further. Introduce the use of models or prototypes to test their ideas. Plan and Communicate: Help students create more detailed design plans with specifications, measurements, and materials needed. Encourage clear communication of their ideas through sketches, diagrams, and models.</p>	<p>documenting their design journeys. Select and Develop: Guide students in selecting a design concept that aligns with the design brief and user needs. Help them refine their ideas through detailed planning and prototyping. Plan and Communicate: Emphasize the importance of clear and effective communication in the design process. Encourage students to create detailed design documentation and presentations.</p>	<p>selecting the most innovative and feasible design concept. Encourage iterative development and the use of advanced prototyping techniques. Plan and Communicate: Support students in creating comprehensive design plans, considering all aspects of their project, including aesthetics, functionality, and sustainability. Help them communicate their ideas confidently to different audiences.</p>	<p>selecting a design concept that aligns with their research and personal values. Encourage them to develop prototypes or models that showcase their designs effectively. Plan and Communicate: Emphasize the importance of professional and persuasive communication in the design process. Support students in creating detailed and compelling design presentations.</p>	<p>Creative Ideation and Conceptualization Challenge students to think divergently and come up with original and innovative design ideas. Explore advanced brainstorming techniques, such as mind mapping or lateral thinking, to generate a wide range of concepts. Select and Justify Design Concepts Assist students in critically evaluating their design ideas, selecting the most promising ones, and justifying their choices based on research and design criteria. Encourage them to consider the impact of their designs on various stakeholders and the environment. Effective Communication and Presentation Teach students advanced presentation skills, including public speaking, to confidently communicate their</p>
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							design concepts to different audiences. Encourage them to articulate design choices, addressing potential challenges and demonstrating their understanding of the design process.
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Make							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
Engage in sensory and exploratory play with a variety of safe and age-appropriate materials, such as playdough, sand, water, and natural objects. Participate in simple craft activities using glue, scissors, and various materials like paper, cardboard, and fabric to create basic artwork and models.	Develop basic crafting skills, including cutting, sticking, folding, and assembling materials. Create simple 2D and 3D models using a range of materials such as cardboard, clay, and recyclable materials. Engage in construction play with building blocks and construction sets to build basic structures and models.	Enhance craftsmanship skills and refine cutting, joining, and assembling techniques. Create more intricate 3D models and structures using various materials like wood, plastic, and metal. Incorporate basic mechanisms into their creations, such as levers, pulleys, and gears.	Apply cutting, shaping, and joining techniques to create more complex 3D models and structures. Introduce basic electrical components (e.g., bulbs, wires) to construct simple circuits in their projects. Experiment with textiles and fabric to create basic sewn or woven items.	Refine craftsmanship skills and use a variety of tools safely to work with wood, plastic, and other materials. Introduce basic programming and simple coding concepts to create interactive elements in their designs. Explore more complex textile techniques to create functional textile products.	Demonstrate mastery of cutting, shaping, and joining techniques to create sophisticated models and structures. Incorporate advanced mechanisms and basic electronics to add movement and interactivity to their projects. Explore food preparation techniques and create simple recipes with an emphasis on presentation.	Undertake more ambitious and intricate design projects that require a high level of craftsmanship and technical skill. Integrate advanced electronics and programming to create interactive and automated designs. Experiment with more complex food preparation techniques and present dishes creatively.	Engage in ambitious and innovative design projects that demonstrate a high level of creativity and technical expertise. Utilize advanced making techniques and tools to create intricate and precise prototypes or final products. Integrate technology, such as microcontrollers or sensors, to add advanced functionality to their designs.

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Evaluate							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Encourage self-assessment and reflection by asking simple questions like "What do you like about your creation?" or "How could you improve it?"</p> <p>Provide opportunities for children to discuss their creations with peers and teachers, sharing their thoughts and feelings about their work.</p>	<p>Introduce the concept of evaluating designs based on specific criteria, such as functionality, aesthetics, and intended purpose.</p> <p>Encourage students to discuss their creations with peers, explaining their design choices and seeking feedback.</p>	<p>Develop students' ability to evaluate their designs critically by considering both successful aspects and areas for improvement.</p> <p>Encourage peer evaluations, where students provide constructive feedback to their classmates.</p>	<p>Introduce the importance of evaluating against design criteria and user feedback.</p> <p>Guide students in conducting self-assessment and making design improvements based on their evaluations.</p>	<p>Develop a deeper understanding of the design process, including the iterative nature of evaluation and improvement.</p> <p>Encourage students to consider the views and opinions of potential users when evaluating their designs.</p>	<p>Encourage students to use evaluation as a tool for refining their designs and making informed decisions.</p> <p>Introduce peer evaluation sessions where students give and receive constructive feedback on their work.</p>	<p>Develop a deeper understanding of the design process and the importance of critical evaluation in design projects.</p> <p>Encourage students to assess their designs against specific criteria, considering functionality, aesthetics, user needs, and environmental impact.</p>	<p>Foster a high level of critical evaluation, where students analyse their designs in detail, considering the impact of their choices on the final product.</p> <p>Teach students how to use feedback and evaluation to refine and iterate their designs, pushing the boundaries of their creativity and problem-solving skills.</p>

Technical Knowledge.							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Identify and explore different food textures, colours, and tastes through sensory experiences.</p> <p>Familiarize with basic textiles like fabrics and explore their tactile properties through touch and play.</p> <p>Engage in construction play with various materials to understand simple</p>	<p>Learn about basic food groups and their role in a balanced diet.</p> <p>Explore different types of fabrics and their common uses in textiles.</p> <p>Investigate simple structures and mechanisms through play and basic construction sets.</p>	<p>Understand the importance of hygiene and safety in food preparation.</p> <p>Explore different textile techniques, such as weaving and stitching, and create basic textile products.</p> <p>Investigate more complex structures and mechanisms, such as pulleys and levers, through hands-on activities.</p>	<p>Learn about food storage and preservation methods.</p> <p>Develop sewing skills and create more advanced textile products with decorative elements.</p> <p>Explore the basic principles of structural stability and apply them in simple construction projects.</p>	<p>Understand the nutritional value of different foods and consider dietary choices.</p> <p>Explore more advanced textile techniques, such as appliqué and tie-dye, to create unique textile designs.</p> <p>Investigate more complex structures, such as arches and trusses, and understand their</p>	<p>Learn about the origins and cultural significance of different foods from around the world.</p> <p>Explore advanced textile materials, such as technical fabrics and their properties, for specific applications.</p> <p>Investigate the mechanical principles of gears and cams in creating movement</p>	<p>Understand food preparation techniques and principles of recipe development.</p> <p>Explore advanced textile construction methods, such as pattern making and garment assembly.</p> <p>Investigate the structural properties of materials used in modern architecture and engineering.</p>	<p>Explore complex food science concepts, such as emulsification and fermentation, and apply them in recipe development.</p> <p>Investigate advanced textile technologies, such as smart textiles and their potential applications in various industries.</p> <p>Explore sophisticated mechanical principles, such as linkages and</p>

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structures and mechanisms.				applications in buildings.	and apply them in simple mechanisms.		pneumatic systems, and apply them in complex mechanisms.
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Textiles							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Explore a variety of fabrics and materials through sensory play, discovering different textures and colours. Engage in simple fabric manipulation activities, such as folding, scrunching, and draping, to understand basic textile properties.</p>	<p>Identify different types of fabrics and understand their common uses in everyday items. Develop basic sewing skills, such as threading a needle and creating simple stitches. Create basic textile crafts, such as hand puppets or fabric collages.</p>	<p>Explore a wider range of textile techniques, such as weaving and braiding, to create more intricate designs. Create textile products with a focus on functional items, such as bags or cushions. Understand the importance of colour and pattern in textile design.</p>	<p>Learn about the history and cultural significance of textiles in different societies. Experiment with fabric dyeing techniques, such as tie-dye or batik, to create unique patterns. Create simple clothing items, considering basic garment construction.</p>	<p>Explore more advanced textile construction methods, such as appliqué and embroidery, to add decorative elements to fabric. Investigate the properties of different fabrics and their suitability for specific purposes. Create textile products with an emphasis on sustainability and eco-friendly materials.</p>	<p>Learn about contemporary textile designers and their innovative work. Experiment with more complex textile techniques, such as fabric manipulation and fabric printing. Design and create textile products with a focus on aesthetics and functionality.</p>	<p>Explore the principles of pattern-making and garment assembly to create more complex clothing items. Investigate the use of textiles in various industries, such as fashion, interior design, and automotive. Develop a deeper understanding of fabric properties and their performance in different contexts.</p>	<p>Explore cutting-edge textile technologies, such as smart textiles and conductive fabrics, and their potential applications in various industries. Investigate sustainable textile practices and the importance of ethical considerations in the fashion and textile industry. Undertake independent textile design projects, pushing the boundaries of creativity and innovation.</p>

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Food							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Explore different food textures, tastes, and colours through sensory experiences. Engage in simple food preparation activities, such as washing fruits and vegetables.</p>	<p>Learn about the importance of a balanced diet and the different food groups. Engage in basic food preparation, such as making simple sandwiches and fruit salads.</p>	<p>Explore basic cooking techniques, such as baking, grilling, and boiling. Investigate food sources and the journey of food from farm to table.</p>	<p>Understand the principles of food hygiene and safety in the kitchen. Follow simple recipes to create dishes using a variety of ingredients.</p>	<p>Explore more complex cooking techniques, such as sautéing, roasting, and steaming. Investigate the nutritional value of different foods and make informed food choices.</p>	<p>Learn about the cultural significance of food and traditional dishes from different regions. Develop more advanced cooking skills and experiment with flavors and ingredients.</p>	<p>Understand food sustainability and the importance of making environmentally conscious food choices. Explore more challenging recipes and cooking methods, preparing multi-course meals.</p>	<p>Investigate advanced culinary techniques, such as molecular gastronomy or cake decorating. Explore the cultural and historical aspects of food and its impact on societies.</p>

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Structures							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Explore and build basic structures using construction toys like building blocks and wooden bricks.</p> <p>Learn about the stability and balance of structures through hands-on play and experimentation.</p> <p>Discover different shapes and their role in building stable structures.</p>	<p>Introduce different types of structures, such as towers, bridges, and simple shelters.</p> <p>Engage in group projects to build basic structures using various materials like cardboard, straws, and popsicle sticks.</p> <p>Understand the importance of stable foundations in structures.</p>	<p>Investigate the strength and stability of different materials through construction projects.</p> <p>Explore the basic principles of architecture and engineering in structures.</p> <p>Collaborate in teams to build more complex structures, incorporating simple joints and connections.</p>	<p>Build more complex structures, understanding the role of foundations and load-bearing elements.</p> <p>Investigate different types of bridges and their designs, experimenting with model bridges.</p> <p>Learn about basic structural properties, such as tension and compression.</p>	<p>Investigate famous structures and landmarks from around the world, considering their architectural features and historical significance.</p> <p>Collaborate on group projects to design and build more advanced structures, incorporating stronger joints and connections.</p> <p>Explore the concept of stability and how to improve the stability of structures.</p>	<p>Critiquing art styles: Analyse and critique different art styles, discussing their characteristics and impact.</p> <p>Analysing cultural influences: Explore how art is influenced by different cultures and societies.</p> <p>Evaluating composition: Teach students to evaluate the use of composition techniques in creating visually engaging artworks.</p>	<p>Evaluating art movements: Analyse and evaluate the characteristics and impact of various art movements throughout history.</p> <p>Exploring artistic intention: Encourage students to analyse and discuss the intentions and messages behind artworks.</p> <p>Reflecting on personal growth: Prompt students to reflect on their own artistic growth and development throughout the year.</p>	<p>Conducting in-depth research on specific artists, art movements, or periods.</p> <p>Analysing complex art techniques and experimenting with advanced artistic processes.</p> <p>Examining the historical, social, and cultural significance of artworks in greater detail.</p> <p>Evaluating and critiquing artwork using sophisticated art vocabulary and references to art theory.</p> <p>Producing highly refined and conceptually developed artworks that demonstrate originality and creativity.</p>

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Mechanisms and Electrical Systems							
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Greater Depth
<p>Explore simple cause-and-effect relationships through play with toys and objects that move or make sounds. Investigate basic mechanical systems, such as wheels and axles, and explore how they create movement.</p>	<p>Explore the principles of levers and simple machines through hands-on activities and construction projects. Investigate how different mechanisms are used in everyday objects, such as doors and wheels.</p>	<p>Experiment with more complex mechanical systems like gears and cams in moving toys and models. Create simple pulley systems to understand the concept of force and motion. Investigate the use of levers and linkages in various applications.</p>	<p>Investigate more sophisticated mechanical systems, such as rack-and-pinion systems and ratchets, in moving toys and models. Explore the use of simple switches and buttons in electrical circuits to control moving parts. Understand how to create and interpret simple circuit diagrams.</p>	<p>Build more advanced mechanisms, such as pulley systems and complex gears, to create motion in their projects. Investigate the concept of energy transfer and conversion in mechanical systems. Apply knowledge of mechanisms to design and construct functional devices.</p>	<p>Investigate mechanical systems in everyday objects and explore how they facilitate movement. Explore the principles of cam mechanisms and apply them in automata and kinetic sculptures. Investigate the use of simple pneumatic systems to create movement in their projects.</p>	<p>Study more advanced mechanical principles, such as hydraulics and more complex gear systems. Investigate the application of mechanisms in engineering and how they enhance efficiency and functionality. Design and create intricate mechanical models and devices.</p>	<p>Explore advanced mechanical systems, such as robotics and automated devices, and their applications in industry and everyday life. Engage in independent research projects on cutting-edge mechanical technologies and innovations. Develop complex automata or robotic projects that demonstrate a deeper understanding of mechanical principles and creativity.</p>

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Key Vocabulary

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • Design • Make • Materials • Tools • Model • Explore • Create • Shape • Build • Investigate • Craft • Construction • Imagination • Texture • Patterns • Colours • Form • Sensory • Assembly • Play 	<ul style="list-style-type: none"> • Prototype • Evaluate • Joining • Mechanism • Textiles • Food • Craftsmanship • Designing • Measurement • Trial • Error • Adhesive • Planning • Safety • Shape • Structure • Investigate • Pattern • Tools • Assembly 	<ul style="list-style-type: none"> • Structure • Function • Evaluate • Mechanism • Textiles • Food • Components • Shape • Design Criteria • Assembly • Measurements • Stability • Experiment • Ingredients • Sustainability • Explore • Investigate • Technique • Innovate • Adapting 	<ul style="list-style-type: none"> • Construction • Evaluate • Mechanism • Technical Knowledge • Textiles • Food • Materials • Circuit • Innovate • Sustainability • Evaluate • Accuracy • Design Process • Experimentation • Pattern • Prototype • Health and Safety • Functionality • Problem-Solving • Energy 	<ul style="list-style-type: none"> • Sustainability • Evaluate • Mechanism • Technical Knowledge • Textiles • Food • Structure • Innovation • Adaptation • Components • Energy Transfer • Efficiency • Environmentally Friendly • Research • Modelling • Circuits • Systems • Testing • Functionality • Nutrition 	<ul style="list-style-type: none"> • Design Criteria • Evaluate • Mechanism • Technical Knowledge • Textiles • Food • Modelling • Iterative Design • Sustainability • Automation • Computer-Aided Design (CAD) • Ergonomics • Criteria • Testing • Energy Efficiency • Evaluation • Environmentally Responsible • Creativity • Prototyping • Biomimicry 	<ul style="list-style-type: none"> • Iterative Design • Evaluate • Mechanism • Technical Knowledge • Textiles • Food • Sustainable Design • Computer Numerical Control (CNC) • Biomimicry • Innovation • Criteria • Accuracy • Resilience • Adaptation • Experimentation • Integration • Iteration • Sustainability • Form and Function • Design Thinking