



Bolham Primary School Design Technology Progression Map – Lower Key Stage Two

Design	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.</p> <p>They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.</p> <p>They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.</p>	<p>Children can:</p> <ul style="list-style-type: none"> a identify the design features of their products that will appeal to intended customers; b use their knowledge of a broad range of existing products to help generate their ideas; c design innovative and appealing products that have a clear purpose and are aimed at a specific user; d explain how particular parts of their products work; e use annotated sketches and cross-sectional drawings to develop and communicate their ideas; f when designing, explore different initial ideas before coming up with a final design; g when planning, start to explain their choice of materials and components including function and aesthetics; h test ideas out through using prototypes; i use computer-aided design to develop and communicate their ideas (see note on p. 1); j develop and follow simple design criteria; <p>work in a broader range of relevant contexts, for example entertainment, the home, school, leisure, food industry and the wider environment.</p>
Make	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.</p> <p>Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately.</p> <p>They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p>	<p>Children can:</p> <p>Plan</p> <ul style="list-style-type: none"> a with growing confidence, carefully select from a range of tools and equipment, explaining their choices; b select from a range of materials and components according to their functional properties and aesthetic qualities; c place the main stages of making in a systematic order; <p>Practical skills and techniques</p> <ul style="list-style-type: none"> d learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures; e use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components; f with growing independence, measure and mark out to the nearest cm and millimetre; g cut, shape and score materials with some degree of accuracy; h assemble, join and combine material and components with some degree of accuracy; i demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple

		<p>product;</p> <p>j join textiles with an appropriate sewing technique;</p> <p>begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.</p>
Evaluate	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.</p> <p>Children investigate and analyse a range of existing products.</p> <p>They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>They understand how key events and individuals in design and technology have helped shape the world.</p>	<p>Children can:</p> <ul style="list-style-type: none"> a explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose; b explore what materials/ingredients products are made from and suggest reasons for this; c consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product; d evaluate their product against their original design criteria; <p>evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.</p>
Technical Knowledge	<p>Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p> <p>They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].</p> <p>They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].</p> <p>They apply their understanding of computing to program, monitor and control their products.</p>	<p>Children can:</p> <ul style="list-style-type: none"> a understand that materials have both functional properties and aesthetic qualities; b apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; c understand and demonstrate how mechanical and electrical systems have an input and output process; d make and represent simple electrical circuits, such as a series and parallel, and components to create functional products; e explain how mechanical systems such as levers and linkages create movement; <p>use mechanical systems in their products.</p>



Bolham Primary School Design Technology Progression Map – Upper Key Stage Two

Design	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.</p> <p>They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.</p> <p>They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.</p>	<p>Children can:</p> <ul style="list-style-type: none">a use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market;b use their knowledge of a broad range of existing products to help generate their ideas;c design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user;d explain how particular parts of their products work;e use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas;f generate a range of design ideas and clearly communicate final designs;g consider the availability and costings of resources when planning out designs; <p>work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.</p>
Make	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.</p> <p>Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.</p> <p>They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p>	<p>Children can:</p> <p>Planning</p> <ul style="list-style-type: none">a independently plan by suggesting what to do next;b with growing confidence, select from a wide range of tools and equipment, explaining their choices;c select from a range of materials and components according to their functional properties and aesthetic qualities;d create step-by-step plans as a guide to making; <p>Practical skills and techniques</p> <ul style="list-style-type: none">e learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures;f independently take exact measurements and mark out, to within 1 millimetre;g use a full range of materials and components, including construction materials and kits, textiles, and mechanical components;h cut a range of materials with precision and accuracy;i shape and score materials with precision and accuracy;j assemble, join and combine materials and components with accuracy;k demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with

		<p>precision to make a more complex product;</p> <p>l join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch; refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.</p>
Evaluate	<p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.</p> <p>Children investigate and analyse a range of existing products.</p> <p>They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>They understand how key events and individuals in design and technology have helped shape the world.</p>	<p>Children can:</p> <ul style="list-style-type: none"> a complete detailed competitor analysis of other products on the market; b critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make; <p>evaluate their ideas and products against the original design criteria, making changes as needed.</p>
Technical Knowledge	<p>Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</p> <p>They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].</p> <p>They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].</p> <p>They apply their understanding of computing to program, monitor and control their products.</p>	<p>Children can:</p> <ul style="list-style-type: none"> a apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products; b understand and demonstrate that mechanical and electrical systems have an input, process and output; c explain how mechanical systems, such as cams, create movement and use mechanical systems in their products; <p>apply their understanding of computing to program, monitor and control a product.</p>