

Holyoakes Field First School Design Technology Curriculum Overview

Projects on a Page scheme to be used as basis for planning DT teaching and learning. A3 sheets with DT resources. Copies also on server.
 Project title to follow same format - "Design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose)."

Topics to be covered throughout year			
Early Years	<ul style="list-style-type: none"> • Early experiences of working with paper and card to make simple flaps and hinges. • Experience of simple cutting, shaping and joining skills using scissors, glue, paper fasteners and masking tape. • Experience of using construction kits to build walls, towers and frameworks. • Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. • Experience of different methods of joining card and paper. • Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. • Experience of cutting soft fruit and vegetables using appropriate utensils. • Explored and used different fabrics. • Cut and joined fabrics with simple techniques. • Thought about the user and purpose of products. • Assembled vehicles with moving wheels using construction kits. • Explore moving vehicles through play. • Gained some experience of designing, making and evaluating products for a specified user and purpose. • Developed some cutting, joining and finishing skills with card. 		
Year 1	<p>Mechanisms - sliders and levers</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through drawings and mock-ups with card and paper. <p>Making</p> <ul style="list-style-type: none"> - Plan by suggesting what to do next. 	<p>Food - preparing fruit and vegetables (cooking and nutrition requirements)</p> <p>Designing</p> <ul style="list-style-type: none"> - Design appealing products for a particular user based on simple design criteria. - Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. 	<p>Textiles - templates and joining techniques</p> <p>Designing</p> <ul style="list-style-type: none"> - Design a functional and appealing product for a chosen user and purpose based on simple design criteria. - Generate, develop, model and communicate their ideas as appropriate through talking,

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<ul style="list-style-type: none"> - Select and use tools, explaining their choices, to cut, shape and join paper and card. - Use simple finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> - Explore a range of existing books and everyday products that use simple sliders and levers. - Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Explore and use sliders and levers. - Understand that different mechanisms produce different types of movement. - Know and use technical vocabulary relevant to the project. <p>-</p>	<ul style="list-style-type: none"> - Communicate these ideas through talk and drawings. <p>Making</p> <ul style="list-style-type: none"> - Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. - Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. <p>Evaluating</p> <ul style="list-style-type: none"> - Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. - Evaluate ideas and finished products against design criteria, including intended user and purpose. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. - Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eatwell plate</i>. 	<p>drawing, templates, mock-ups and information and communication technology.</p> <p>Making</p> <ul style="list-style-type: none"> - Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. - Select from and use textiles according to their characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> - Explore and evaluate a range of existing textile products relevant to the project being undertaken. - Evaluate their ideas throughout and their final products against original design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Understand how simple 3-D textile products are made, using a template to create two identical shapes. - Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. - Explore different finishing techniques e.g. using painting,
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		<ul style="list-style-type: none"> - Know and use technical and sensory vocabulary relevant to the project. 	<p style="text-align: center;">fabric crayons, stitching, sequins, buttons and ribbons.</p> <p>Know and use technical vocabulary relevant to the project.</p>
Year 2	<p>Mechanisms - wheels and axles</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate initial ideas and simple design criteria through talking and using own experiences. - Develop and communicate ideas through drawings and mock-ups. <p>Making</p> <ul style="list-style-type: none"> - Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. - Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> - Explore and evaluate a range of products with wheels and axles. - Evaluate their ideas throughout and their products against original criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Explore and use wheels, axles and axle holders. - Distinguish between fixed and freely moving axles. - Know and use technical vocabulary relevant to the project. - 	<p>Food - preparing fruit and vegetables (cooking and nutrition requirements) (Same as Year 1)</p>	<p>Structures - Freestanding structures</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through talking, mock-ups and drawings. <p>Making</p> <ul style="list-style-type: none"> - Plan by suggesting what to do next. - Select and use tools, skills and techniques, explaining their choices. - Select new and reclaimed materials and construction kits to build their structures. - Use simple finishing techniques suitable for the structure they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> - Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.

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			<ul style="list-style-type: none"> - Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Know how to make freestanding structures stronger, stiffer and more stable. - Know and use technical vocabulary relevant to the project.
<p>Year 3</p>	<p>Structures - shell structures</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product. - Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> - Order the main stages of making. - Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy. - Explain their choice of materials according to functional properties and aesthetic qualities. - Use finishing techniques suitable for the product they are creating. 	<p>Food - healthy and varied diet (cooking and nutrition requirements)</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. - Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p>	<p>Textiles - 2D shape to 3D product</p> <p>Designing</p> <ul style="list-style-type: none"> - Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. - Produce annotated sketches, prototypes, final product sketches and pattern pieces. <p>Making</p> <ul style="list-style-type: none"> - Plan the main stages of making. - Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.

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<p>Evaluating</p> <ul style="list-style-type: none"> - Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. - Test and evaluate their own products against design criteria and the intended user and purpose. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Develop and use knowledge of how to construct strong, stiff shell structures. - Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. - Know and use technical vocabulary relevant to the project. - 	<ul style="list-style-type: none"> - Plan the main stages of a recipe, listing ingredients, utensils and equipment. - Select and use appropriate utensils and equipment to prepare and combine ingredients. - Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> - Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. - Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Know how to use appropriate equipment and utensils to prepare and combine food. - Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. 	<ul style="list-style-type: none"> - Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. <p>Evaluating</p> <ul style="list-style-type: none"> - Investigate a range of 3-D textile products relevant to the project. - Test their product against the original design criteria and with the intended user. - Take into account others' views. - Understand how a key event/individual has influenced the development of the chosen product and/or fabric. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Know how to strengthen, stiffen and reinforce existing fabrics. - Understand how to securely join two pieces of fabric together. - Understand the need for patterns and seam allowances. <p>Know and use technical vocabulary relevant to the project.</p>
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		<ul style="list-style-type: none"> - Know and use relevant technical and sensory vocabulary appropriately. 	
Year 4	<p><i>Mechanical systems - levers and linkages</i></p> <p>Designing</p> <ul style="list-style-type: none"> - Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. - Use annotated sketches and prototypes to develop, model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> - Order the main stages of making. - Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. - Select from and use finishing techniques suitable for the product they are creating. <p>Evaluating</p> <p>Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</p> <ul style="list-style-type: none"> - - Evaluate their own products and ideas against criteria and user needs, as they design and make. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Understand and use lever and linkage mechanisms. <p>Distinguish between fixed and loose pivots.</p> <ul style="list-style-type: none"> - 	<p><i>Food - healthy and varied diet (cooking and nutrition requirements)</i></p> <p>(Same as Year 3)</p>	<p><i>Electrical systems - simple circuits and switches</i></p> <p>Designing</p> <ul style="list-style-type: none"> - Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. - Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. <p>Making</p> <ul style="list-style-type: none"> - Order the main stages of making. - Select from and use tools and equipment to cut, shape, join and finish with some accuracy. - Select from and use materials and components, including construction materials and electrical components according

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	<ul style="list-style-type: none"> - Know and use technical vocabulary relevant to the project. 		<p>to their functional properties and aesthetic qualities.</p> <p>Evaluating</p> <ul style="list-style-type: none"> - Investigate and analyse a range of existing battery-powered products. - Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> - Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. - Apply their understanding of computing to program and control their products. - Know and use technical vocabulary relevant to the project.
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