

# Grange Primary school

## DT progression of knowledge, skills grid

EYFS	Characteristics of effective learning
	<p>Show curiosity about objects, events and people</p> <p>Questions why things happen</p> <p>Engage in open-ended activity</p> <p>Thinking of ideas</p> <p>Find ways to solve problems / find new ways to do things / test their ideas</p> <p>Use senses to explore the world around them</p> <p>Create simple representations of events, people and objects</p> <p>Planning, making decisions about how to approach a task, solve a problem and reach a goal</p> <p>Checking how well their activities are going</p> <p>Changing strategy as needed</p> <p>Reviewing how well the approach worked</p>

Skills	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Generating ideas - designing	<ul style="list-style-type: none"> <li>Design appealing products for a particular user based on simple design criteria.</li> <li>Generate initial ideas and design criteria through own experiences.</li> <li>Develop and communicate these ideas through talk and drawings and mock ups where relevant.</li> </ul>	<ul style="list-style-type: none"> <li>Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>Develop, model and communicate their ideas through talking, mock-ups and drawings.</li> </ul>	<ul style="list-style-type: none"> <li>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</li> <li>Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</li> <li>Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</li> <li>Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> </ul>	<ul style="list-style-type: none"> <li>Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers to develop a design brief and criteria for a design specification.</li> <li>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> <li>Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design</li> </ul>	<ul style="list-style-type: none"> <li>Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products.</li> <li>Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.</li> <li>Generate and develop innovative ideas and share and clarify these through discussion.</li> <li>Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.</li> </ul>

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Making	<ul style="list-style-type: none"> <li>• Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card.</li> <li>• Select from a range of ingredients and materials according to their characteristics to create a chosen product.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan by suggesting what to do next. Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices.</li> <li>• Select new and materials, components, reclaimed materials and construction kits to build and create their products.</li> <li>• Use simple finishing techniques suitable for the products they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan the main stages of making. Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product.</li> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> </ul>	<ul style="list-style-type: none"> <li>• Order the main stages of making. Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products.</li> <li>• Explain their choice of materials according to functional properties and aesthetic qualities.</li> <li>• Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Write a step-by-step plan, i Produce detailed lists of equipment and fabrics relevant to their tasks including a list of resources required.</li> <li>• Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</li> <li>• Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products.</li> <li>• Use finishing and decorative techniques suitable for the product they are designing and making.</li> </ul>
Evaluating	<ul style="list-style-type: none"> <li>• Taste, explore and evaluate a range of products to determine the intended user's preferences for the product</li> <li>• Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore a range of existing products related to their design criteria.</li> <li>• Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project.</li> <li>• Test their product against the original design criteria and with the intended user.</li> <li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used.</li> <li>• Test and evaluate their own products against design criteria and the intended user and purpose.</li> <li>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate and analyse products linked to their final product.</li> <li>• Compare the final product to the original design specification and record the evaluations.</li> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work</li> </ul>	<ul style="list-style-type: none"> <li>• Continually evaluate and modify the working features of the product to match the initial design specification.</li> <li>• Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>• Test the system to demonstrate its effectiveness for the intended user and purpose.</li> </ul>

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Knowledge	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	<ul style="list-style-type: none"> <li>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> </ul>	Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.	<ul style="list-style-type: none"> <li>Know how to use appropriate equipment and utensils to prepare and combine food.</li> </ul>	<ul style="list-style-type: none"> <li>Know how to use appropriate equipment and utensils to prepare and combine food.</li> </ul>	<ul style="list-style-type: none"> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> </ul>	<ul style="list-style-type: none"> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> </ul>
	<ul style="list-style-type: none"> <li>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>.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>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>.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</li> <li>Know and use relevant technical and sensory vocabulary appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</li> <li>Know and use relevant technical and sensory vocabulary appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>Understand about seasonality in relation to food products and the source of different food products.</li> <li>Know and use relevant technical and sensory vocabulary.</li> </ul>	<ul style="list-style-type: none"> <li>Understand about seasonality in relation to food products and the source of different food products.</li> <li>Know and use relevant technical and sensory vocabulary.</li> </ul>
Structures		<ul style="list-style-type: none"> <li>Know how to make freestanding structures stronger, stiffer and more stable.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li>Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>Understand how to strengthen, stiffen and reinforce 3-D frameworks.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>
Textiles	<ul style="list-style-type: none"> <li>Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li>Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>Explore different finishing techniques</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>Understand how to securely join two pieces of fabric together.</li> <li>Understand the need for patterns and seam allowances.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>Produce a 3-D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li>Understand how fabrics can be strengthened, stiffened and reinforced where appropriate.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	
Mechanisms/mechanical systems	<ul style="list-style-type: none"> <li>Explore and use sliders and levers.</li> <li>Understand that different mechanisms produce different types of movement.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Explore and use wheels, axles and axle holders.</li> <li>Distinguish between fixed and freely moving axles.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Understand and use lever and linkage mechanisms.</li> <li>Distinguish between fixed and loose pivots.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>Understand that mechanical and electrical systems have an input, process and an output.</li> <li>Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	

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Electrical systems				<ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products linked to science coverage.</li> <li>• Apply their understanding of computing to program and control their products.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>		<ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products linked to science coverage.</li> <li>• Apply their understanding of computing to program, monitor and control their products.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>

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