

John Rankin Schools-DT skills progression

| Skill | NC Statements | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Design Curriculum level 1a-d | <p>To design purposeful, functional, appealing products for themselves and other users based on design criteria</p> <p>1a. To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</p> <p>1b 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>1c. Plan, suggesting a sequence of actions or alternatives if needed.</p> <p>1d. generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> | <ul style="list-style-type: none"> • Draw on their own ideas and experiences to generate ideas. • Identify a target group for what they are going to design and make. • Suggest and explain their ideas and how they are going to create them. • Model or create a pattern using paper or card. • Modify and improve ideas at the planning stage. | <ul style="list-style-type: none"> • Draw on their own ideas and experiences to generate ideas. • Develop and modify ideas through discussion, observation, drawing and modelling. • Identify the purpose for what they will design and make. • Work with given design criteria. • Label plans. | <ul style="list-style-type: none"> • Consider the purpose of an item and identify the user/s when generating ideas. • Agree on a design criteria for the item. • Identify and plan the order of work. • Indicate how their design will work by modelling ideas. • Explain how parts of the product will work. | <ul style="list-style-type: none"> • Consider the purpose of the item being designed. • Gather information about the demographic they are designing for. • Evaluate similar products and assimilate ideas for their own design. • Produce labelled plan of the item from different perspectives. • Identify and plan the design criteria. • Communicate ideas about their planning and discuss feasibility and back up plans. | <ul style="list-style-type: none"> • Generate ideas by brainstorming and identify a purpose for their product and the demographic they are aiming for. • Develop and explain ideas with clear design objectives. • Plan a sequence of actions, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail. • Use results of investigations, information sources, including ICT when developing design ideas. • Share outcomes, including things that went well and those that had to be modified. | <ul style="list-style-type: none"> • Communicate ideas through detailed labelled drawings. • Develop a design specification specifying the purpose and demographic aimed at. • Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of physical and technological ways. • Plan the order of their work, choosing appropriate materials, tools and techniques. • Develop ideas and solutions for modifications if necessary. |
| Working with tools, equipment, materials and components to | 2a Select tools, techniques and materials. | <ul style="list-style-type: none"> • Make their design using appropriate techniques for | <ul style="list-style-type: none"> • Begin to select tools and materials; use | <ul style="list-style-type: none"> • Select tools and techniques for making their | <ul style="list-style-type: none"> • Select appropriate tools and techniques | <ul style="list-style-type: none"> • Select appropriate materials, tools | <ul style="list-style-type: none"> • Select appropriate tools, materials, |

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| <p>make quality products (including food) Curriculum levels 2a-f</p> | <p>2b Suggest alternative ways of making a product if the first attempt fails. 2c Explore the sensory qualities of materials and how to use them. 2d Measure, mark out, cut and shape materials accurately. 2e Use finishing techniques to strengthen and improve the appearance of the product. 2f Follow safe procedures for food safety and hygiene.</p> | <p>the materials chosen.</p> <ul style="list-style-type: none"> • With help measure, mark out, cut and shape a range of materials. • Handle and use tools eg scissors and a hole punch safely. • Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. • Use correct vocabulary for characteristics of materials and components • Select and use appropriate fruit and vegetables, use appropriate processes and tools. • Use basic food handling, hygienic practices and personal hygiene. • Use simple finishing techniques to improve the appearance of their product. | <p>appropriate vocabulary to name and describe them.</p> <ul style="list-style-type: none"> • Measure, cut and score with some accuracy. • Use hand tools safely and appropriately. • Use a wider variety of joining methods. • Assemble, join and combine materials in order to make a product. • Learn about the movement of simple mechanisms such as levers, sliders, wheels and axles. • Know how freestanding structures can be made stronger and more stable. • Cut, shape and join fabric to make a simple garment. • Use basic sewing techniques. • Learn how to make knots. • Follow safe procedures for food safety and hygiene. • Choose and use appropriate finishing techniques. | <p>product.</p> <ul style="list-style-type: none"> • Measure, mark out, cut, score and assemble components with more accuracy. • Work safely and accurately with a range of simple tools. • Think about their ideas as they make progress and be willing change things if this helps them improve their work. • Measure, tape or pin, cut and join fabric with some accuracy. • Demonstrate safe and hygienic food preparation and storage. • Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT. | <p>for making their product.</p> <ul style="list-style-type: none"> • Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. • Join and combine materials and components accurately in temporary and permanent ways. • Sew using a range of different stitches, weave and knit a range of materials. • Measure, tape or pin, cut and join fabric with some accuracy. • Use simple graphical communication techniques. | <p>and techniques.</p> <ul style="list-style-type: none"> • Measure and mark out accurately. • Use skills in using different tools and equipment safely and accurately. • Weigh and measure accurately (time, dry ingredients, liquids). • Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens. Safely prepare meat. • Cut and join with accuracy to ensure a good-quality finish to the product. | <p>components and techniques.</p> <ul style="list-style-type: none"> • Assemble components to make working models. • Use tools safely and accurately. • Construct products using permanent joining techniques. • Make modifications if necessary as they go along. • Pin, sew and stitch materials together create a product. • Achieve a quality product. |
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| Food and nutrition | <p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught • how to name and sort foods into the five groups in The Eatwell plate • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating | | | <p>Across KS2 children should know 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</p> <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking | <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body | <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking | <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that recipes can be adapted to change the appearance, taste, texture and aroma • that different food and drink contain different substances - nutrients, water and fibre - that are needed for health |
| Technical knowledge | <p>Across KS1 the children should know that;</p> <ul style="list-style-type: none"> • a 3-D textiles product can be assembled from two identical fabric shapes. • the correct technical vocabulary for the projects they | • | • | <p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • how to use learning from science to help design and make products that work • how to use learning from mathematics to help design and make products that work • that materials have both functional | <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> • how mechanical systems such as levers and linkages or pneumatic systems create movement • how simple electrical circuits and components can be used to create functional products | | <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> • how mechanical systems such as cams or pulleys or gears create movement • how more complex electrical circuits and components can be used to create functional products • how to program a |

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| | <ul style="list-style-type: none"> are undertaking Know that food ingredients should be combined according to their sensory characteristics | | | <p>properties and aesthetic qualities</p> <ul style="list-style-type: none"> that materials can be combined and mixed to create more useful characteristics that mechanical and electrical systems have an input, process and output the correct technical vocabulary for the projects they are undertaking | <ul style="list-style-type: none"> how to program a computer to control their products how to make strong, stiff shell structures that a single fabric shape can be used to make a 3D textiles product that food ingredients can be fresh, pre-cooked and processed | | <ul style="list-style-type: none"> computer to monitor changes in the environment and control their products how to reinforce and strengthen a 3D framework that a 3D textiles product can be made from a combination of fabric shapes that a recipe can be adapted by adding or substituting one or more ingredients |
| Evaluate | <ul style="list-style-type: none"> Explore and evaluate existing products by deciding how they are suited to the criteria. Explore and evaluate existing products by deconstructing them to see how they are made. Evaluate their product by discussing how well it works in relation to the purpose and criteria. Evaluate their products as they are developed, identifying strengths and possible changes they might make. Evaluate their product by asking questions about what they have made and how | <ul style="list-style-type: none"> Across KS1 pupils should explore: what products are who products are for what products are for how products work how products are used where products might be used what materials products are made from what they like and dislike about products Deconstruct and discuss products similar to the ones they are creating. Evaluate against their design criteria. Evaluate their products as they are developed, | <ul style="list-style-type: none"> Evaluate their product against original design criteria e.g. how well it meets its intended purpose. Disassemble and evaluate familiar products | <p>Across KS2 pupils should investigate and analyse</p> <ul style="list-style-type: none"> how well products have been designed how well products have been made why materials have been chosen what methods of construction have been used how well products work how well products achieve their purposes how well products meet user needs and wants who designed and made the products where products were designed and made when products were designed and made whether | <ul style="list-style-type: none"> Evaluate a product against the original design specification. Evaluate it personally and seek evaluation from others | <p>In late KS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> how much products cost to make how innovative products are how sustainable the materials in products are what impact products have beyond their intended purpose Evaluate their work both during and at the end of the assignment. Evaluate their products, evaluating strengths and areas for development, and carrying out appropriate test. Record their evaluations using drawings with labels. | |

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| | they have gone about it. | identifying strengths and possible changes they might make. <ul style="list-style-type: none">• Talk about their ideas, saying what they like and dislike about them. | | products can be recycled or reused <ul style="list-style-type: none">• Evaluate their products carrying out appropriate tests | | <ul style="list-style-type: none">• Evaluate against their original criteria and suggest ways that their product could be improved | |
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