Balcombe C of E Primary School
Design and Technology Progression
(Design and Technology Progression Framework from the Design and Technology Association)

Designing

<table>
<tr><td rowspan="2">Understanding contexts, users and purposes</td><td rowspan="2">In EYFS pupils should:
• begin to be able to talk about what they are going to make</td><td rowspan="2">Across KS1 pupils should:
• work confidently within a range of contexts, such as imaginary, story-based, home, school,
gardens, playgrounds, local community, industry and the wider environment
• state what products they are designing and making
• say whether their products are for themselves or other users
• describe what their products are for
• say how their products will work
• say how they will make their products suitable for their intended users
• use simple design criteria to help develop their ideas</td><td colspan="2">Across KS2 pupils should:
• work confidently within a range of contexts, such as the home, school, leisure, culture,
enterprise, industry and the wider environment
• describe the purpose of their products
• indicate the design features of their products that will appeal to intended users
• explain how particular parts of their products work</td></tr>
<tr><td>In lower KS2 pupils should also:
• gather information about the needs and wants of particular individuals and groups
• develop their own design criteria and use these to inform their ideas</td><td>In upper KS2 pupils should also:
• carry out research, using surveys, interviews, questionnaires and web-based resources
• identify the needs, wants, preferences and values of particular individuals and groups
• develop a simple design specification to guide their thinking</td></tr>
<tr><td rowspan="2">Generating, developing, modelling and communicating ideas</td><td rowspan="2">In EYFS pupils should:
• design a product thinking about colour, design, form, texture and function</td><td rowspan="2">Across KS1 pupils should:
• generate ideas by drawing on their own experiences
• use knowledge of existing products to help come up with ideas
• develop and communicate ideas by talking and drawing
• model ideas by exploring materials, components and construction kits and by making templates and mockups
• use information and communication technology, where appropriate, to develop and communicate their ideas</td><td colspan="2">Across KS2 pupils should:
• share and clarify ideas through discussion
• model their ideas using prototypes and pattern pieces
• use annotated sketches, cross-sectional drawings and exploded diagrams to develop and
communicate their ideas
• use computer-aided design to develop and communicate their ideas</td></tr>
<tr><td>In early KS2 pupils should also:
• generate realistic ideas, focusing on the needs of the user
• make design decisions that take account of the availability of resources</td><td>In late KS2 pupils should also:
• generate innovative ideas, drawing on research
• make design decisions, taking account of constraints such as time, resources and cost</td></tr>
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Making

<table>
<tr><td>Planning</td><td>In EYFS pupils should:
• explore various tools and materials, building on prior learning e.g. scissors, brushes, pens, playdough tools, glue spreaders, hole punchers, tags, staplers…</td><td>Across KS1 pupils should:
• plan by suggesting what to do next
• select from a range of tools and equipment, explaining their choices
• select from a range of materials and components according to their characteristics</td><td colspan="2">Across KS2 pupils should:
• select tools and equipment suitable for the task
• explain their choice of tools and equipment in relation to the skills and techniques they will be using
• select materials and components suitable for the task
• explain their choice of materials and components according to functional properties and aesthetic qualities</td></tr>
<tr><td></td><td></td><td></td><td>In early KS2 pupils should also:
• order the main stages of making</td><td>In late KS2 pupils should also:
• produce appropriate lists of tools, equipment and materials that they need
• formulate step-by-step plans as a guide to making</td></tr>
<tr><td>Practical skills and techniques</td><td>In EYFS pupils should:
• explore using materials and techniques – collage, colour mixing/paint, drawing joining and fixing, modelling with dough…creating with natural materials as well as loose parts and recycling</td><td>Across KS1 pupils should:
• follow procedures for safety and hygiene
• use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components
• measure, mark out, cut and shape materials and components
• assemble, join and combine materials and components
• use finishing techniques, including those from art and design</td><td colspan="2">Across KS2 pupils should:
• follow procedures for safety and hygiene
• use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</td></tr>
<tr><td></td><td></td><td></td><td>In early KS2 pupils should also:
• measure, mark out, cut and shape materials and components with some accuracy
• assemble, join and combine materials and components with some accuracy
• apply a range of finishing techniques, including those from art and design, with some accuracy</td><td>In late KS2 pupils should also:
• accurately measure, mark out, cut and shape materials and components
• accurately assemble, join and combine materials and components
• accurately apply a range of finishing techniques, including those from art and design
• use techniques that involve a number of steps
• demonstrate resourcefulness when tackling practical problems</td></tr>
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Evaluating

<table>
<tr><td>Own ideas and products</td><td>In EYFS pupils should:
• be able to explain what they have made</td><td>Across KS1 pupils should:
• talk about their design ideas and what they are making
• make simple judgements about their products and ideas against design criteria
• suggest how their products could be improved</td><td colspan="2">Across KS2 pupils should:
• identify the strengths and areas for development in their ideas and products
• consider the views of others, including intended users, to improve their work</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td rowspan="2"></td><td>In early KS2 pupils should also:
• refer to their design criteria as they design and make
• use their design criteria to evaluate their completed products</td><td>In late KS2 pupils should also:
• critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make
• evaluate their ideas and products against their original design specification</td></tr>
<tr><td>Existing products</td><td rowspan="2"></td><td rowspan="2">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</td><td colspan="2">Across KS2 pupils should investigate and analyse:
• 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</td></tr>
<tr><td>In early KS2 pupils should also investigate and analyse:
• who designed and made the products
• where products were designed and made
• when products were designed and made
• whether products can be recycled or reused</td><td>In late KS2 pupils should also investigate and analyse:
• 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</td></tr>
<tr><td>Key events and individuals</td><td colspan="2">Not a requirement in EYFS or KS1</td><td colspan="2">Across KS2 pupils should know:
• about inventors, designers, engineers, chefs and manufacturers who have developed
ground-breaking products</td></tr>
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Technical knowledge

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<td rowspan="2">Making products work</td>
<td rowspan="2">In EYFS pupils should:
• be able to talk about how they made their product, including some of the materials and techniques used</td>
<td rowspan="2">Across KS1 pupils should know:
• about the simple working characteristics of materials and components
• about the movement of simple mechanisms such as levers, sliders, wheels and axles
• how freestanding structures can be made stronger, stiffer and more stable
• that a 3-D textiles product can be assembled from two identical fabric shapes
• that food ingredients should be combined according to their sensory characteristics
• the correct technical vocabulary for the projects they are undertaking</td>
<td colspan="2">Across KS2 pupils should know:
• 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 properties and aesthetic qualities
• 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</td>
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<tr>
<td>In early KS2 pupils should also know:
• 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
• 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</td>
<td>In late KS2 pupils should also know:
• 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 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</td>
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Cooking and nutrition

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<tr><td>Where food comes from</td><td>Across KS1 pupils should be able to:
• explain/describe healthy food</td><td>Across KS1 pupils should know:
• that all food comes from plants or animals
• that food has to be farmed, grown elsewhere (e.g. home) or caught</td><td colspan="2">Across KS2 pupils 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</td></tr>
<tr><td></td><td></td><td></td><td></td><td>In late KS2 pupils should also know:
• that seasons may affect the food available
• how food is processed into ingredients that can be eaten or used in cooking</td></tr>
<tr><td>Food preparation, cooking and nutrition</td><td>Across KS1 pupils should know:
•how food changes in the cooking process</td><td>Across KS1 pupils should know:
• 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</td><td colspan="2">Across KS2 pupils should know:
• 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</td></tr>
<tr><td></td><td></td><td></td><td>In early KS2 pupils should also know:
• 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</td><td>In late KS2 pupils should also know:
• 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</td></tr>
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