

Killigrew Primary and Nursery School D&T Knowledge & Skills Progression



| | | Nursery | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| Designing | Understanding contexts, users and purposes | <p>Understands the use of objects.</p> <p>Looks closely at similarities and differences between different objects.</p> | <p>Explores how objects can be used for different purposes.</p> <p>Explains how objects are similar and different. Talks about how each object can be used most effectively.</p> | <p>Works confidently within a range of contexts.</p> <p>States what products they are designing and making.</p> <p>Says whether their products are for themselves or other users.</p> <p>Describes the use of their products.</p> <p>Explains how their products will work.</p> <p>Explains how they will make their products suitable for their intended users.</p> <p>Uses simple design criteria to help develop their ideas.</p> | <p>Works confidently within a range of contexts.</p> <p>Describes the purpose of their products.</p> <p>Indicates the design features of their products that will appeal to intended users.</p> <p>Explains how particular parts of their products work.</p> | | | | |
| | Generating, developing, modelling and communicating ideas | <p>Explains how something could be made using different resources.</p> <p>Marks makes with purpose.</p> | <p>Recreates simple representations of events, people, and objects.</p> <p>Writes labels and captions.</p> | <p>Generates ideas by drawing on their own experiences.</p> <p>Uses knowledge of existing products to help come up with ideas.</p> <p>Develops and communicates ideas by talking and drawing.</p> <p>Models ideas by exploring materials, components and construction kits and by making templates and mock-ups.</p> | <p>Gathers information about the needs and wants of individuals and groups.</p> <p>Develops their own design criteria and uses this to inform their ideas.</p> <p>Carries out research, using surveys, interviews, questionnaires, and web-based resources.</p> <p>Identifies the needs, wants, preferences and values of individuals and groups.</p> <p>Develops a simple design specification to guide their thinking.</p> | | | | |
| | | <p>Shares and clarifies ideas through discussion.</p> <p>Models their ideas using prototypes and pattern pieces.</p> <p>Uses annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas.</p> <p>Uses computer-aided design to develop and communicate their ideas.</p> | | | | | | | |

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| | | | | Uses information and communication technology, where appropriate, to develop and communicate their ideas. | | Generates realistic ideas, focusing on the needs of the user. Makes design decisions that take account of the availability of resources. | | Generates innovative ideas, drawing on research. Makes design decisions, taking account of constraints such as time, resources and cost. | |
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| Making | Planning | Selects resources for a purpose after seeing a model. | Selects appropriate resources. Makes adaptations to work as needed. | Plans by suggesting what to do next. Selects from a range of tools and equipment, explaining their choices. Selects from a range of materials and components according to their characteristics. | | Select tools and equipment suitable for the task. Explains their choice of tools and equipment in relation to the skills and techniques they will be using. Selects materials and components suitable for the task. Explains their choice of materials and components according to functional properties and aesthetic qualities. | | | |
| | | | | | | Orders the main stages of making a product. | | Produces appropriate lists of tools, equipment, and materials that they need. Formulates step-by-step plans as a guide to making. | |
| | Practical skills and techniques | Chooses and uses different tools and materials with purpose. Develops the fine motor | Handles tools, objects, construction and malleable materials safely and with increasing | Follows procedures for safety and hygiene, Uses a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. | | Independently follows procedures for safety and hygiene. Uses a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. | | | |

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| | | control needed to manipulate different materials for purpose. Shows understanding of the need for safety when tackling new challenges. | control and the correct grip. Selects tools and techniques needed to shape, assemble, and join materials. Uses simple techniques competently following a teacher model. Constructs with a purpose in mind, using a variety of resources. Considers and manages some risks. | Measures, marks out, cuts and shapes materials and components. Assembles, joins and combines materials and components. Uses finishing techniques, including those from art and design. | | Measures, marks out, cuts and shapes materials and components with increasing accuracy. Assembles, joins and combines materials and components with increasing accuracy. Applies a range of finishing techniques, including those from art and design, with increasing accuracy. | | Accurately measures, marks out, cuts and shapes materials and components. Accurately assembles, joins and combines materials and components Accurately applies a range of finishing techniques, including those from art and design. Uses techniques that involve a number of steps. Demonstrates resourcefulness when tackling practical problems. | |
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| Evaluating | Own ideas and products | Talks about the purpose of their construction. | Uses talk to organise, sequence and clarify thinking, ideas and feelings. | Talks about their design ideas and what they are making. Makes simple judgements about their products and ideas against design criteria | | Identifies the strengths and areas for development in their ideas and products. Considers the views of others, including intended users, to improve their work. | | | |

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| | | | | Suggests how their products could be improved. | | Refers to design criteria as they design and make. Uses design criteria to evaluate completed products. | | Critically evaluates the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluates their ideas and products against their original design specification. | |
| | Existing products | Uses pictures to help explain what more familiar products are used for. | Explains what products are and what they are used for. Explains what people might use the products. Starts to name familiar materials. | Explores, using research, the following criteria: • 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 | | Investigates and analyses, using the following criteria: • 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 | | | |
| | | | | | | Investigates and analyses, using the following criteria: • 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 | | Investigates and analyses, using the following criteria: • 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 | |
| Key events and individuals | | | | | | Explains their knowledge and understanding of inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. | | | |
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| Technical Knowledge | Making products work | Knows how to operate familiar equipment. | Knows how to operate simple equipment. | Explores and explains the following information: <ul style="list-style-type: none">the simple working characteristics of materials and componentsthe movement of simple mechanisms such as levers, sliders, wheels and axleshow freestanding structures can be made stronger, stiffer and more stablethat a 3-D textiles product can be assembled from two identical fabric shapesthat food ingredients should be combined according to their sensory characteristicsthe correct technical vocabulary for the projects they are undertaking | | Explores and explains the following information: <ul style="list-style-type: none">how to use learning from science to help design and make products that workhow to use learning from mathematics to help design and make products that workthat materials have both functional properties and aesthetic qualitiesthat materials can be combined and mixed to create more useful characteristicsthat mechanical and electrical systems have an input, process and outputthe correct technical vocabulary for the projects they are undertaking | | | |
| | | Shows an interest in technological toys with knobs or pulleys, or real objects. | Shows skill in making toys work and resilience to overcome obstacles. | | | Explores and explains the following information: <ul style="list-style-type: none">how mechanical systems such as levers and linkages or pneumatic systems create movementhow simple electrical circuits and components can be used to create functional productshow to program a computer to control their productshow to make strong, stiff shell structuresthat a single fabric shape can be used to make a 3D textiles productthat food ingredients can be fresh, pre-cooked and processed | Explores and explains the following information: <ul style="list-style-type: none">how mechanical systems such as cams or pulleys or gears create movementhow more complex electrical circuits and components can be used to create functional productshow to program a computer to monitor changes in the environment and control their productshow to reinforce and strengthen a 3D frameworkthat a 3D textiles product can be made from a combination of fabric shapesthat a recipe can be adapted by adding or substituting one or more ingredients | | |
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| Cooking and Nutrition | Where food comes from | Talks about different types of familiar food. | Starts to put food into different groups depending on whether it is a plant or not. | Understands that all food comes from plants or animals and that food has to be farmed, grown elsewhere (or caught). | Understands 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. | |
| | | Starts to grow different types of plants and harvests them at different times of the year. | | | | Explains that seasons may affect the food available and how food is processed into ingredients that can be eaten or used in cooking. |
| | Food preparation, cooking and nutrition | Talks about different fruits eaten in snack time and how fruits have health benefits. | Understands the need for variety in food to remain healthy. | Names and sorts foods into the five groups in The Eatwell Guide. Understands that everyone should eat at least five portions of fruit and vegetables every day. | Prepares and cooks a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Uses a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | |
| | | Bakes and prepares foods from different food groups. | | Prepares simple dishes safely and hygienically, without using a heat source. Uses techniques such as cutting, peeling and grating. | Understands that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Guide. Understands that, to be active and healthy, food and drink are needed to provide energy for the body. | Understands that recipes can be adapted to change the appearance, taste, texture and aroma and that different food and drink contain different substances – nutrients, water and fibre – that are needed for health. |

Design and Technology Progression Framework taken and adapted from Design and Technology Association - National Curriculum Expert Group for D&T