ABBEY MEADS
COMMUNITY PRIMARY SCHOOL

Progression of Skills

Design and Technology

The Blue Kite Academy Trust

<table>
<tr><th>Designing</th><th>Early Years</th><th>KS1</th><th>Lower KS2</th><th>Upper KS2</th></tr>
<tr><td rowspan="2">Understanding contexts, users and purposes.</td><td rowspan="4">Children's experience of D and T in the EYFS may have included some or all of the following elements:
- designing by talking about what they intend to do, are doing and have done
- saying who and what their products are for
- drawing what they have made, with some children drawing their ideas before they 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 they will make their products suitable for the 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 deign features of their products that will appeal to intended users
- explain how particular parts of their products work</td></tr>
<tr><td>In early 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 late 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">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 mock-ups
- 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>
<tr><th>Making</th><th>Early Years</th><th>KS1</th><th>Lower KS2</th><th>Upper KS2</th></tr>
<tr><td rowspan="2">Planning</td><td rowspan="3">Children's experience of D and T in the EYFS may have included some or all of the following elements:
- opportunities to make their own choices and to discuss the reasons for these
- learning procedures for safety and hygiene
- developing practical skills and techniques using a range of materials including food, textiles and construction materials
- exploring and using a range of construction kits</td><td rowspan="2">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>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>Across KS1 pupils should:
- follow procedures for safety and hygiene</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>
</table>

<table>
<tr><td></td><td>- exploring the designed and made world through the indoor and outdoor environment and through roleplay</td><td>- 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>In early KS2 pupils should also:
- measure, mark out, cut and shape materials and components with some accuracy
- assembly, 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 assembly, 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>
<tr><td>Evaluating</td><td>Early Years</td><td>KS1</td><td>Lower KS2</td><td>Upper KS2</td></tr>
<tr><td>Own ideas and products</td><td rowspan="4">Children’s experience of D and T in the EYFS may have included some or all of the following elements:
- asking questions about a range of existing products</td><td rowspan="2">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>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">Across KS1 pupils should explore:
- what products are
- who products are for
- what 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:
- 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:
- 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>Not a requirement in KS1</td><td colspan="2">Across KS2 pupils should:
- about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</td></tr>
<tr><td>Technical knowledge</td><td>Early Years</td><td>KS1</td><td>Lower KS2</td><td>Upper KS2</td></tr>
<tr><td>Making products work</td><td>Children’s experience of D and T in the EYFS may have included some or all of the following elements:
- developing their knowledge and understanding in relation to mechanisms, structures, food and textiles</td><td>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</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></tr>
</table>

	- learning and using appropriate technical vocabulary	- 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	**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	**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 of more ingredients
Cooking and nutrition	Early Years	KS1	Lower KS2	Upper KS2
Where food comes from		**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	**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	
				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
Food preparation, cooking and nutrition		**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	**Across KS2 pupils should know:** - how to prepare and cook a variety of predominately 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	
			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	**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

Abbey Meads Community Primary School – DT Progression of skills (taken from the D and T association)

	EYFS	Y1 Mechanisms – Wheels and axles Textiles – Templates and joining techniques Food – Preparing fruit and vegetables (food)	Y2 Mechanisms – Sliders and levers Structures – freestanding structures Food – Preparing fruit and vegetables (drink)	Y3 Mechanical systems – Pneumatics Textiles – 2-D shape to 3-D product Food – Healthy and varied diet	Y4 Structures – Shell structures Electrical systems – simple circuits and switches Food – Preparing a packed lunch.	Y5 Mechanical systems – Cams Textiles – Combining different fabric shapes Food – Celebrating culture and seasonality	Y6 Structures – Frame structures Electrical systems – More complex circuits and switches Food – Preparing a cooked dish.
Designing		- Generate initial ideas and simple design criteria through talking and using own experiences. - Develop and communicate ideas through drawings and mock-ups. - Design a functional and appealing product for a chosen user and purpose based on simple design criteria.	- Generate ideas based on simple design criteria and their own experiences, explaining what they could make. - Develop, model and communicate their ideas through talking, drawings and mock-ups with card and paper.	- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user and producing an appealing, functional product. - Use annotated sketches. prototypes, final product sketches, information and communication technology (web-based recipes) and pattern pieces to develop, model and communicate ideas.	- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the purpose of the product. - Develop ideas through the analysis of existing products and use annotated sketches, cross-sectional and exploded diagrams, information and communication technology (web-based recipes) and prototypes to model and communicate ideas.	- Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. - Develop a simple design specification to guide their thinking. - Develop and communicate ideas through discussion, templates, mock-ups, prototypes, annotated drawings, exploded drawings, drawings from different views and, where appropriate, computer-aided design. - Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.	- Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. - Develop a simple design specification to guide the development of their ideas and products (including a product that responds automatically to the environment), taking account of constraints including time, resources and cost. - Generate, develop and model innovative ideas, through discussion, prototypes, annotated sketches, pictorial representations of electrical circuits or circuit diagrams.
Making		- Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing, marking out and finishing. - Select from and use a range of materials and	- Plan by suggesting what to do next. - Select and use tools, explaining their choices, to cut, shape and join paper and card. - Use simple finishing techniques suitable for	- Plan and order the main stages of making. - Select from and use appropriate tools with some accuracy to cut, and join materials and components such as tubing, syringes and balloons.	- 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 and	- Produce detailed lists of tools, equipment, fabric and materials. - Formulate step-by-step plans and, if appropriate, allocate tasks within a team. - Select from and use a range of tools and equipment to make	- Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. - Competently select from and use appropriate tools to accurately measure,

		components such as paper, card, plastic, textiles and wood according to their characteristics. - 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.	the product they are creating. - Select new and reclaimed materials and construction kits to build their structures. - 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.	- Select from and use finishing techniques suitable for the product they are creating. - Select fabrics and fastenings according to their functional characteristics, e.g. strength, and aesthetic qualities, e.g. pattern. - 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.	components, including construction materials and electrical components, according to functional properties and aesthetic qualities. - Use finishing techniques suitable for the product they are creating. - 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.	products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. - Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. - Make, decorate and present the food product appropriately for the intended user and purpose.	mark out, cut, shape and join construction materials to make frameworks and securely connect electrical components to produce a reliable, functional product. - Use finishing and decorative techniques suitable for the product they are designing and making. - Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. - Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. - Make, decorate and present the food product appropriately for the intended user and purpose.
Evaluating		- Explore and evaluate a range of products with wheels and axles. - Explore and evaluate a range of textile products relevant to the project being undertaken. - Taste and evaluate a range of fruit and vegetables to determine the	- Explore a range of existing books and everyday products that use simple sliders and levers. - Explore a range of existing freestanding structures in the school and local environment, e.g. everyday products and buildings.	- Investigate and analyse books, videos and products with pneumatic mechanisms. - Investigate a range of 3-D textile products relevant to the project. - Understand how a key event/individual has influenced the development of the	- Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used. - Investigate and analyse a range of existing battery-powered products.	- Compare the final product to the original design specification. - Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.	- Investigate and evaluate a range of existing frame structures. - Research key events and individuals relevant to frame structures. - Investigate famous inventors who developed ground-breaking electrical systems and components.

		intended user's preferences. - Evaluate their ideas throughout and their products against original criteria.	- Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. - Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria.	chosen product and/or fabric. - Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using eg. tables and simple graphs. - Evaluate their own products and ideas against criteria and user needs, as they design and make.	- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using eg. tables and simple graphs. - Test and evaluate their own products against design criteria and the intended user and purpose.	- Consider the views of others to improve their work. - Investigate famous manufacturing and engineering companies relevant to the project. - Investigate and analyse textile products linked to their final product. - Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using tables/graphs/charts such as star diagrams. - Understand how key chefs have influenced eating habits to promote varied and healthy diets.	- Test the system to demonstrate its effectiveness for the intended user and purpose. - Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. - Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using tables/graphs/charts such as star diagrams. - Understand how key chefs have influenced eating habits to promote varied and healthy diets.
Technical knowledge and understanding		- Explore and use wheels, axles and axle holders. - Distinguish between fixed and freely moving axles. - 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 and use sliders and levers. - Understand that different mechanisms product different types of movement. - Know and use technical and sensory vocabulary relevant to the project. - Know how to make freestanding structures stronger, stiffer and more stable. - Understand where a range of fruit and vegetables come from,	- Understand and use pneumatic mechanisms. - 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. - Know how to use appropriate equipment and utensils to prepare and combine food.	- 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. - Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. - Apply their understanding of	- Understand that mechanical systems have an input, process and an output. - Understand how cams can be used to produce different types of movement and change the direction of movement. - A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.	- Understand how to strengthen, stiffen and reinforce 3-D frameworks. - Understand and use electrical systems in their products. - Apply their understanding of computing to program, monitor and control their products. - Know how to use utensils and equipment including heat sources to prepare and cook food.

		- Explore different finishing techniques, e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. - Understand where a range of fruit and vegetables come from, e.g. framed 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 the eatwell plate. - Know and use technical and sensory vocabulary relevant to the project.	e.g. framed 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 the eatwell plate.	- Know about a range of fresh and processed ingredients appropriate for their product, and whether that are grown, reared or caught. - Know and use technical and sensory vocabulary relevant to the project.	computing to program and control their products. - Know about a range of fresh and processed ingredients appropriate for their product, and whether that are grown, reared or caught. - Know and use technical and sensory vocabulary relevant to the project.	- Fabrics can be strengthened, stiffened and reinforced where appropriate. - Know how to use utensils and equipment including heat sources to prepare and cook food. - Understand about seasonality in relation to food products and the source of different food products. - Know and use technical and sensory vocabulary relevant to the project.	- Understand about seasonality in relation to food products and the source of different food products. - Know and use technical and sensory vocabulary relevant to the project.