

Design Technology
Planning Progression
Over Hall Community School



DT Planning Overview – Reception

Explore different materials freely, in order to develop their ideas about how to use them and what to make.

Develop their own ideas and then decide which materials to use to express them.

Join different materials and explore different textures.

Create collaboratively sharing ideas, resources and skills.

Return to and build on their previous learning, refining ideas and developing their ability to represent them.

DT Planning Overview - Key Stage 1 (Years 1 and 2)

NC: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

NC: When designing and making, pupils should be taught to:

Design

- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria

Technical knowledge

- Build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, cutting, levers, sliders, wheels and axles], in their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:

- Use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from.

Mechanisms – Wheels and axles YEAR 2	Textiles – Templates and joining techniques YEAR 2	Mechanisms – Sliders and levers YEAR 1	Structures - Freestanding Structures YEAR 1	Food – Preparing fruit and vegetables YEAR 2	Food 2 – Preparing fruit and vegetables YEAR 1
<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Generate ideas and simple design criteria. ● Develop and communicate ideas through drawings and mock-ups. ● Select a range of tools and equipment and materials to perform practical tasks. ● Explore wheels and axles and evaluate their ideas and products against original criteria. 	<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Design a functional, appealing project for a choose user and purpose ● Generate, develop and communicate ideas ● Use a range of textiles, tools and equipment to perform practical tasks ● Explore and evaluate existing textile products and their own ideas and products ● Understand how 3-D textile products are made, using joining, templates and finishing to create two identical shapes 	<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Generating, modelling and communicating ideas. ● Planning making, selecting tools and using finishing techniques. ● Exploring books and products; evaluating own product against original criteria. ● Exploring sliders and levers; understanding types of movement; technical vocabulary. 	<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Generating design ideas; developing modelling and explaining using talk, mock-ups and drawings. ● Planning making, selecting tools and new and recycled materials; using finishing techniques. ● Exploring existing freestanding structures; evaluating their own products against original criteria. ● Know about strengthening structures; knowledge of vocabulary. 	<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Designing appealing products for a user; investigating fruit and vegetables and generating ideas; communicating through talk and drawings. ● Selecting a range of fruits and vegetables; using simple utensils and equipment. ● Tasting and evaluating user's preference; evaluating ideas and finished products against original criteria. ● Understand where ingredients come from and the basis of a healthy and varied diet. 	<p><u>Key learning</u></p> <ul style="list-style-type: none"> ● Designing appealing products for a user; investigating fruit and vegetables and generating ideas; communicating through talk and drawings. ● Selecting a range of fruits and vegetables; using simple utensils and equipment. ● Tasting and evaluating user's preference; evaluating ideas and finished products against original criteria. ● Understand where ingredients come from and the basis of a healthy and varied diet.

DT Planning Overview - Lower Key Stage 2 (Years 3 and 4)

NC: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

NC: When designing and making, pupils should be taught to:

Design

- 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
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
 - Understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
 - Apply their understanding of computing to program, monitor and control their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

Structures - Shell Structures YEAR 4	Food 1 – Healthy and varied diet YEAR 3	Textiles – 2D Shape to 3D Product YEAR 3	Mechanical Systems – Levers and Linkages YEAR 3	Electrical Systems YEAR 4	Food 2 – Healthy and varied diet YEAR 4
<p>Key learning</p> <ul style="list-style-type: none"> • Generate and develop realistic ideas and design criteria collaboratively and through analysis of existing products. • Order the stages of making; selecting tools and using with some accuracy. • Investigate and evaluate shell structures, and construct strong, stiff shell structures. 	<p>Key learning</p> <ul style="list-style-type: none"> • Generate ideas and develop design criteria for an appealing product for a user and purpose. • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select from a range of ingredients to make appropriate food products. • Carry out and record evaluations of a variety 	<p>Key learning</p> <ul style="list-style-type: none"> • Generate design criteria for an appealing, functional product for specific users. • Produce annotated sketches, prototypes, final product sketches and pattern pieces. • Select fabrics and fastenings according to their functional characteristics. ☑ Investigate a range of 3-D textile products. 	<p>Key learning</p> <ul style="list-style-type: none"> • Generate realistic ideas and use annotated sketches and prototypes to develop, model and communicate ideas. • Select and use tools with some accuracy to cut, shape and join paper and card. • Investigate and analyse their own and others' products with lever and linkage mechanisms. 	<p>Key learning</p> <ul style="list-style-type: none"> • Use annotated sketches, cross-sectional and exploded diagrams to develop and communicate ideas. • Select and use tools with some accuracy to cut, shape, join and finish. • Use construction materials and electrical components according to their functional properties and aesthetic qualities. • Understand and use electrical systems in their products, such as series circuits 	<p>Key learning</p> <ul style="list-style-type: none"> • Generate ideas and develop design criteria for an appealing product for a user and purpose. • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select from a range of ingredients to

<ul style="list-style-type: none">• Test and evaluate own products against design criteria and intended user and purpose.	<p>of ingredients and products.</p> <ul style="list-style-type: none">• Know a range of appropriate ingredients, and whether they are grown, reared or caught.	<ul style="list-style-type: none">• Test their product against the original criteria and with the intended user.	<ul style="list-style-type: none">• Understand and use lever and linkages, and fixed and loose pivots.	<p>incorporating switches, bulbs and buzzers.</p>	<p>make appropriate food products.</p> <ul style="list-style-type: none">• Carry out and record evaluations of a variety of ingredients and products.• Know a range of appropriate ingredients, and whether they are grown, reared or caught.
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DT Planning Overview - Upper Key Stage 2 (Years 5 and 6)

NC: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

NC: When designing and making, pupils should be taught to:

Design

- 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
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
 - Understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
 - Apply their understanding of computing to program, monitor and control their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:

- Understand and apply the principles of a healthy and varied diet
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Structures – Frame Structures YEAR 5	Food 1 – Celebrating culture and seasonality YEAR 6	Electrical Systems – More complex switches and circuits YEAR 6	Textiles – Combining different fabric shapes YEAR 6	Mechanical Systems – Pulleys or gears YEAR 5	Food 2 – Celebrating culture and seasonality YEAR 5
Key learning <ul style="list-style-type: none"> • Research user needs and existing products and develop and model innovative ideas into a design specification. • Formulate a plan with a step-by-step list of tasks and resources. • Use tools to accurately measure, mark out, cut, shape and join materials to make frameworks. • Use finishing techniques suitable for the product and critically evaluate their products against a range of criteria. • Research key events and individuals relevant to frame structures. 	Key learning <ul style="list-style-type: none"> • Generate and explore innovative ideas through research and discussion to develop a design brief. • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Using appropriate utensils and equipment accurately, make, decorate and present a food product for the intended user and purpose. • Evaluate a range of relevant products and ingredients and the final product with reference 	Key learning <ul style="list-style-type: none"> • Develop a design specification for a functional product that responds automatically to changes in the environment. • Formulate a step-by-step plan to making, listing tools, equipment, materials and components. • Use a computer control program to enable an electrical product to work automatically in response to changes in the environment. • Test and evaluate the system to demonstrate its effectiveness for the 	Key learning <ul style="list-style-type: none"> • Generate and communicate innovative ideas through research. • Produce detailed lists of equipment and fabrics and formulate step-by-step plans for making. • Investigate and analyse textile products linked to their final product and compare the final product to the original design specification. • Know that a 3-D textile product can be made from a combination of pattern pieces, fabric shapes and different fabrics and that fabrics 	Key learning <ul style="list-style-type: none"> • Generate ideas through research and develop and communicate a simple design specification. • Select use a range of tools and equipment to make products that that are accurately assembled and well finished within the constraints of time, resources and cost. • Compare the final product to the original design specification and test the quality of the design, manufacture and functionality with the user. 	Key learning <ul style="list-style-type: none"> • Generate and explore innovative ideas through research and discussion to develop a design brief. • Write a step-by-step recipe, including a list of ingredients, equipment and utensils. • Using appropriate utensils and equipment accurately, make, decorate and present a food product for the intended user and purpose. • Evaluate a range of relevant products and ingredients and the final product with reference

	<p>to the design brief and specification.</p> <ul style="list-style-type: none">• Understand seasonality and the source of different food products.	<p>intended user and purpose.</p> <ul style="list-style-type: none">• Know and use technical vocabulary relevant to the project.	<p>can be strengthened, stiffened and reinforced.</p>	<ul style="list-style-type: none">• Investigate famous manufacturing and engineering companies relevant to the project.	<p>to the design brief and specification.</p> <p>Understand seasonality and the source of different food products</p>
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