



Burton Green Primary School

Hope Learning
Trust York

National Curriculum Requirements of Design and Technology at Key Stage 1

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).

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, (or 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 levers, sliders, wheels and axles), in their products.

National Curriculum Requirements of Cooking and Nutrition at Key Stage 1

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.



Knowledge, Skills and Understanding breakdown for Design and Technology

Year 1

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
To think of some ideas of their own. To explain what they want to do. To use pictures and words to plan.	To explain what they are making. To explain which tools are they using.	To describe how something works. To talk about their own work and things that other people have done.

Breadth of study

<p>Cooking and nutrition To cut food safely. To describe the texture of foods. To wash their hands and make sure that surfaces are clean. To think of interesting ways of decorating food they have made, e.g., cakes.</p>	<p>Textiles To describe how different textiles feel. To make a product from textiles by gluing.</p>	<p>Mechanisms To make a product which moves. To cut materials using scissors. To describe the materials using different words. To say why they have chosen moving parts.</p>	<p>Use of materials To make a structure/model using different materials. To ensure their work is tidy. To make their model stronger if it needs to be.</p>	<p>Construction To talk with others about how they want to construct their product. To select appropriate resources and tools for their building projects. To make simple plans before making objects, e.g. drawings, arranging pieces of construction before building.</p>
---	--	---	---	--

Knowledge, Skills and Understanding breakdown for Design and Technology

Year 2

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
---	---	--

<p>To think of ideas and plan what to do next. To choose the best tools and materials. To give a reason why these are best. To describe their design by using pictures, diagrams, models and words.</p>	<p>To join things (materials/ components) together in different ways.</p>	<p>To explain what went well with their work. If they did it again, to explain what they would improve.</p>
---	---	--

Breadth of study

<p>Cooking and nutrition To describe the properties of the ingredients they are using. To explain what it means to be hygienic.</p>	<p>Textiles To measure textile. To join textiles together to make something. To cut textiles. To explain why they chose a certain textile.</p>	<p>Mechanisms To join materials together as part of a moving product. To add some kind of design to their product.</p>	<p>Use of materials To measure materials to use in a model or structure. To join material in different ways. To use joining, folding or rolling to make it stronger.</p>	<p>Construction To make sensible choices as to which material to use for their constructions. To develop their own ideas from initial starting points. To incorporate some type of movement into models. To consider how to improve their construction.</p>
--	---	---	--	--

National Curriculum Requirements of Design and Technology at Key Stage 2

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.

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, such as 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 as 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 programme, monitor and control their products.

National Curriculum Requirements of Cooking and Nutrition at Key Stage 2

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.

Knowledge, Skills and Understanding breakdown for Design and Technology

Year 3

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
---	---	--

<p>To show that their design meets a range of requirements. To put together a step-by-step plan which shows the order and also what equipment and tools they need. To describe their design using an accurately labelled sketch and words.</p>	<p>To use equipment and tools accurately.</p>	<p>To explain what they changed which made their design even better.</p>
--	---	--

Breadth of study

<p>Cooking and nutrition To choose the right ingredients for a product. To use equipment safely. To make sure that their product looks attractive. To describe how their combined ingredients come together. To set out to grow plants such as cress and herbs from seed with the intention of using them for their food product.</p>	<p>Textiles To join textiles of different types in different ways. To choose textiles both for their appearance and also qualities.</p>	<p>Electrical and mechanical components To select the most appropriate tools and techniques to use for a given task. To make a product which uses both electrical and mechanical components. To use a simple circuit. To use a number of components.</p>	<p>Stiff and flexible sheet materials To use the most appropriate materials. To work accurately to make cuts and holes. To join materials.</p>	<p>Mouldable materials To select the most appropriate materials. To use a range of techniques to shape and mould. To use finishing techniques.</p>
---	--	---	--	--

Knowledge, Skills and Understanding breakdown for Design and Technology

Year 4

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
---	---	--

<p>To come up with at least one idea about how to create their product. To take account of the ideas of others when designing. To produce a plan and explain it to others. To suggest some improvements and say what was good and not so good about their original design.</p>	<p>To tell if their finished product is going to be good quality. To be conscience of the need to produce something that will be liked by others. To show a good level of expertise when using a range of tools and equipment. To work at their product even though their original idea might not have worked.</p>	<p>To think of how they will check if their design is successful. To begin to explain how they can improve their original design. To evaluate their product, thinking of both appearance and the way it works. To take time to consider how they could have made their idea better.</p>
---	---	--

Breadth of study

<p>Cooking and nutrition To know what to do to be hygienic and safe. To think of how they can present their product in an interesting way.</p>	<p>Textiles To think what the user would want when choosing textiles. To think of how to make their product strong. To devise a template. To explain how to join things in a different way.</p>	<p>Electrical and mechanical components To add things to their circuits. To discuss how they have altered their product after checking it. To be confident about trying out new and different ideas.</p>	<p>Stiff and flexible sheet materials To measure carefully so as to make sure they have not made mistakes. To explain how they have attempted to make their product strong.</p>	<p>Mouldable materials To use a range of advanced techniques to shape and mould. To use finishing techniques, showing an awareness of audience.</p>
---	--	--	--	--

Knowledge, Skills and Understanding breakdown for Design and Technology

Year 5

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
<p>To come up with a range of ideas after they have collected information. To take a user's view into account when designing. To produce a detailed step-by-step plan. To suggest some alternative plans and say what the good points and drawbacks are about each.</p>	<p>To explain why their finished product is going to be of good quality. To explain how their product will appeal to the audience. To use a range of tools and equipment expertly. To persevere through different stages of the making process.</p>	<p>To keep checking that their design is the best it can be. To check whether anything could be improved. To evaluate appearance and function against the original criteria.</p>

Breadth of study

<p>Cooking and nutrition To describe what they do to be both hygienic and safe. To demonstrate have they presented their product well.</p>	<p>Textiles To think what the user would want when choosing textiles. To discuss how they made their product attractive and strong. To make up a prototype first. To use a range of joining techniques.</p>	<p>Electrical and mechanical components To incorporate a switch into their product. To refine their product after testing it. To incorporate hydraulics and pneumatics.</p>	<p>Stiff and flexible sheet materials To ensure that their measurements are accurate enough to ensure that everything is precise. To ensure that their product is strong and fit for purpose.</p>	<p>Mouldable materials To be motivated enough to refine and further improve their product using mouldable materials.</p>
---	--	---	--	--

Knowledge, Skills and Understanding breakdown for Design and Technology

Year 6

Developing, planning and communicating ideas	Working with tools, equipment, materials and components to make quality products	Evaluating processes and products
<p>To use a range of information to inform their design. To use market research to inform plans. To work within constraints. To follow and refine their plan if necessary. To justify their plan to someone else. To consider culture and society in their designs.</p>	<p>To use tools and materials precisely. To change the way they are working if needed.</p>	<p>To test and evaluate their final product. To evaluate if it is fit for purpose. To describe how they would improve it. To discuss whether different resources have improved their product. To explain if they would need more or different information to make it even better. To discuss if their product meets all design criteria. To consider the use of the product when selecting materials.</p>

Breadth of study

Cooking and nutrition	Textiles	Electrical and mechanical components	Stiff and flexible sheet materials	Mouldable materials
<p>To explain how their product should be stored with reasons. To set out to grow their own products with a view to making a salad, taking account of time required to grow different foods.</p>	<p>To think about how their product could be sold. To consider what would improve their product even more.</p>	<p>To use different kinds of circuit in their product. To think of ways in which adding a circuit would improve their product.</p>	<p>To justify why they selected specific materials. To ensure that their work is precise and accurate. To hide joints so as to improve the look of their product.</p>	<p>To justify why the chosen material was the best for the task. To justify design in relation to the audience.</p>