


National Curriculum 2014

Scheme of Work

Design and Technology



Statutory Requirements
and school curriculum

Year Group	NC Programme of study
<p>Nursery</p> 	<p>Development Matters</p> <ul style="list-style-type: none"> • Experiments with blocks, colours and marks. • Beginning to use representation to communicate, e.g. drawing a line and saying 'That's me.' • Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. • Seeks to acquire basic skills in turning on and operating some ICT equipment. <p>Development Matters</p> <ul style="list-style-type: none"> • Understands that they can use lines to enclose a space, and then begin to use these shapes to represent objects. • Beginning to be interested in and describe the texture of things. • Uses various construction materials. • Talks about how things work or why things happen. • Captures experiences and responses with a range of media, such as music, dance and paint and other materials or words. • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements







Additional school curriculum & photos:



Children within nursery have access to high quality design and technology experiences through the use of both free flow child- initiated play and adult-led activities in which they have opportunities both indoors and outdoors. They are able to explore a range of materials such as playdough, sand and junk modelling and have access to a range of construction resources. They are also introduced to simple cooking.

Additional experiences include:

- Visiting Broxfield farm to learn about where food comes from
- Forest school



Year Group	NC Programme of study
<p>Reception</p>  	<p>Development Matters</p> <ul style="list-style-type: none"> • Manipulates materials to achieve a planned effect. • Constructs with a purpose in mind, using a variety of resources. • Uses simple tools and techniques competently and appropriately. • Selects appropriate resources and adapts work where necessary. • Selects tools and techniques needed to shape, assemble and join materials they are using. <p>Development Matters</p> <p>They safely use and explore a variety of materials, tools and techniques, experimenting with</p> <ul style="list-style-type: none"> • colour, • design, • texture, • form • and function <p>They represent their own ideas, thoughts and feelings through</p> <ul style="list-style-type: none"> • design and technology, • art, • music, • dance, • role play • and stories
<p>Additional school curriculum & photos:</p>	
<p>Children within Reception continue to have access to high quality design and technology experiences through the use of both free flow child- initiated play and adult-led activities in which they have opportunities both indoors and outdoors. They continue to explore a range of materials such as playdough, sand and junk modelling and have access to a range of construction resources. They are also work on simple cooking activities such as making biscuits or fruit salad.</p>	
<p>Additional experiences include:</p>	
<ul style="list-style-type: none"> • Visiting Broxfield farm to learn about where food comes from • Forest School • Great Exhibition of the North 	
	
	

Year Group	NC Programme of study
<p>Year 1</p>  	<p>Design</p> <ul style="list-style-type: none"> 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 <p>Make</p> <ul style="list-style-type: none"> 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 <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> 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. <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes and understand where food comes from


Additional school curriculum & photos:

Children within year 1 still have an element of free flow play initially to support the transition between key stages and therefore still have some opportunities to support their development in design and technology through child-led experiences. Children are also introduced to the Key Stage 1 Programme of Study and produce work linked to their topics such as using simple mechanisms to making moving pictures.

Additional experiences include:

- Visiting Broxfield farm to learn about where food comes from
- Forest School
- Great Exhibition of the North



Year Group	NC Programme of study
<p>Year 2</p> 	<p>Design</p> <ul style="list-style-type: none"> 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 <p>Make</p> <ul style="list-style-type: none"> 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 <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria <p>Technical knowledge</p> <ul style="list-style-type: none"> 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. <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes and understand where food comes from

Additional school curriculum & photos:

Children in Year 2 continue to progress through the Key Stage 1 Programme of Study and produce a range of products linked with their topics and class readers. Children are able to use a range of materials and develop their skills in designing, cutting, joining and evaluating.

Additional experiences include:

- Visiting Broxfield farm to learn about where food comes from
- Great Exhibition of the North
- Making healthy sandwiches and writing instructions



Making sandwiches


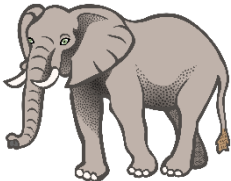


Visit to Broxfield farm



Great Exhibition of the North



Year Group	NC Programme of study
<p>Year 3</p>  	<p><i>Design</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Make</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Evaluate</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> ▪ 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. <p>Cooking and nutrition</p> <ul style="list-style-type: none"> ▪ 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

Additional school curriculum & photos:

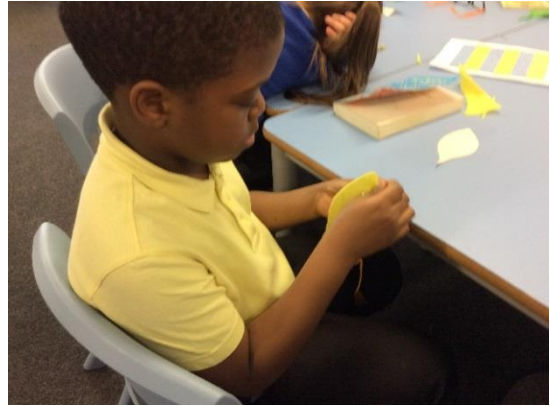
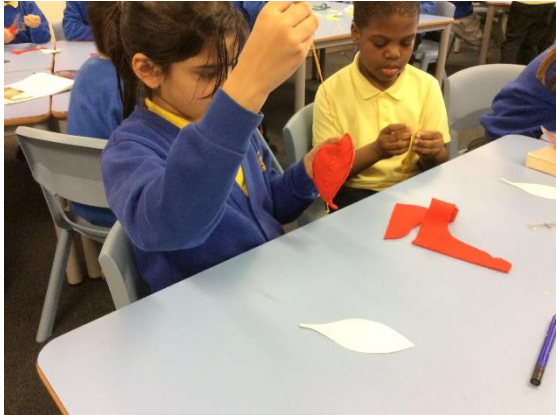
Children in Year 3 have the opportunity to consolidate the skills they have learned throughout Key Stage 1 while also being introduced to the Programme of Study for Key Stage 2. Design and technology is regularly linked with work in the creative curriculum topics and children begin to explore a wider range of materials including using textiles and editing and improving their work if necessary.

Additional experiences include:

- Great Exhibition of the North- Art and Innovation trail

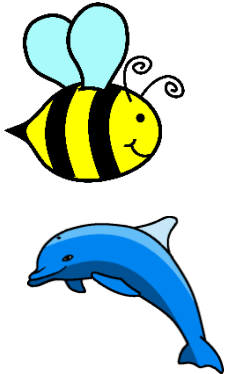


Textiles



Construction- Topic work



Year Group	NC Programme of study
<p>Year 4</p> 	<p><i>Design</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Make</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Evaluate</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> ▪ 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. <p>Cooking and nutrition</p> <ul style="list-style-type: none"> ▪ 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

Additional school curriculum & photos:

Children in Year 4 start to revisit the objectives in the Programme of Study for Key Stage 2. Design and technology is covered through a variety of projects in this year group including making pencil cases, learning about seasonal food and learning about electrical components linked to their work in science. Opportunities are provided for children to revisit skills to ensure progression and mastery and children continue to use a broad range of materials and think about designing, making and evaluating.

Additional experiences include:

- Inventor in Residence project with Discovery Museum
- Great Exhibition of the North- Art and Innovation trail
- Forest Schools
- Visiting Broxfield farm
- Seeds for Life- growing food and then using it in healthy recipes



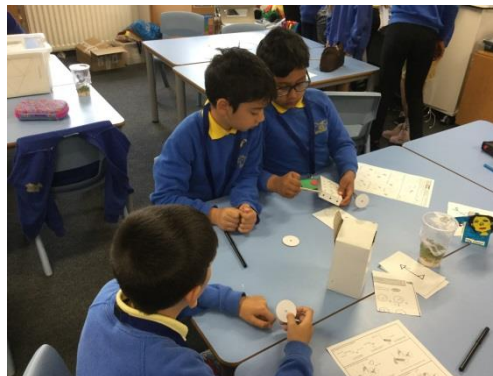
Textiles- pencil cases





Cooking and nutrition- Seasonal food



Inventor in Residence- Discovery Museum



Year Group	NC Programme of study
<p>Year 5</p>  	<p><i>Design</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Make</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Evaluate</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> ▪ 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. <p>Cooking and nutrition</p> <ul style="list-style-type: none"> ▪ 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 <p>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</p>

Additional school curriculum & photos:

Children in Year 5 continue to revisit the skills in the Programme of Study for Key Stage 2 and continue to use a wide range of materials in their products. DT is sometimes linked with work in the creative curriculum topics such as designing chocolate bars when reading “Charlie and the Chocolate Factory”. Opportunities are provided for children to revisit skills to ensure progression and mastery and children continue to develop ideas and begin adding annotations before deciding a final design.

Additional experiences include:

- Great Exhibition of the North- Art and Innovation trail
- Newcastle Building Society Boardroom challenge
- PIE challenge
- Omelette workshop with Excelsior
- Meeting an engineer in enterprise week



Boardroom challenge- Newcastle Building Society





Great Exhibition of the North- Innovation Trail



Omelette Challenge



Year Group	NC Programme of study
<p>Year 6</p>  	<p><i>Design</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Make</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Evaluate</i></p> <ul style="list-style-type: none"> ▪ 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 <p><i>Technical knowledge</i></p> <ul style="list-style-type: none"> ▪ 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. <p>Cooking and nutrition</p> <ul style="list-style-type: none"> ▪ 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

Additional school curriculum & photos:

Children in Year 6 continue to revisit the skills in the Programme of Study for Key Stage 2 and begin using a wider range of materials which they have the opportunity to choose for themselves. DT continues to be linked with work in the creative curriculum, as well as children creating products for their own benefit. Opportunities are provided for children to revisit skills as they finish Key Stage 2 which ensure they have mastered them and ready to progress. Children continue to develop annotated initial ideas and evaluated their work against a design criteria.

Additional experiences include:

- Great Exhibition of the North
- Sandcastle competition- working with architects from Napper
- Visit to Nissan
- STEMtastic! Conference with schools in WEST



Year 6 clock project



Nissan



STEMtastic! Conference



Additional art opportunities across the whole school

Cooking club



Lego club - WEST

