

Weaving Design and Technology  
Knowledge, Skills and Understanding  
into the new National Curriculum

**Key Stage 1:**  
**DT**



# National Curriculum Requirements of DT 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, (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 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
<ul style="list-style-type: none"> <li>• Can they think of some ideas of their own?</li> <li>• Can they explain what they want to do?</li> <li>• Can they use pictures and words to plan?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they explain what they are making?</li> <li>• Can they explain which tools are they using?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they describe how something works?</li> <li>• Can they talk about their own work and things that other people have done?</li> </ul>

## Breadth of study

<p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Can they cut food safely?</li> <li>• Can they describe the texture of foods?</li> <li>• Do they wash their hands and make sure that surfaces are clean?</li> <li>• Can they think of interesting ways of decorating food they have made, eg, cakes?</li> </ul>			<p><b>Use of materials</b></p> <ul style="list-style-type: none"> <li>• Can they make a structure/model using different materials?</li> <li>• Is their work tidy?</li> <li>• Can they measure materials to use in a model or structure?</li> <li>• Can they join material in different ways?</li> <li>• Can they use joining, folding or rolling to make it stronger if needs to be?</li> </ul>	<p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Can they develop their own ideas from initial starting points?</li> <li>• Can they select appropriate materials and tools for their construction?</li> <li>• Can they make simple plans before making objects, e.g. drawings, arranging pieces of construction before building?</li> <li>• Can they incorporate some type of movement into models?</li> <li>• Can they consider how to improve their construction?</li> </ul>
---	--	--	---	---

# 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
<ul style="list-style-type: none"> <li>• Can they think of ideas and plan what to do next?</li> <li>• Can they choose the best tools and materials? Can they give a reason why these are best?</li> <li>• Can they describe their design by using pictures, diagrams, models and words?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they join things (materials/ components) together in different ways?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they explain what went well with their work?</li> <li>• If they did it again, can they explain what they would improve?</li> </ul>

## Breadth of study

<p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Can they describe the properties of the ingredients they are using?</li> <li>• Can they explain what it means to be hygienic?</li> <li>• Are they hygienic in the kitchen?</li> </ul>	<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Can they measure textile?</li> <li>• Can they join textiles together to make something?</li> <li>• Can they cut textiles?</li> <li>• Can they explain why they chose a certain textile?</li> <li>• Can they describe how different textiles feel?</li> </ul>	<p><b>Mechanisms</b></p> <ul style="list-style-type: none"> <li>• Can they join materials together as part of a moving product?</li> <li>• Can they add some kind of design to their product?</li> <li>• Can they make a product which moves?</li> <li>• Can they cut materials using scissors?</li> <li>• Can they describe the materials using different words?</li> <li>• Can they say why they have chosen moving parts?</li> </ul>		
--	--	---	--	--

Weaving Design and Technology  
Knowledge, Skills and Understanding  
into the new National Curriculum

**Key Stage 2:**  
**DT**



## National Curriculum Requirements of DT 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
<ul style="list-style-type: none"> <li>• Can they show that their design meets a range of requirements?</li> <li>• Can they put together a step-by-step plan which shows the order and also what equipment and tools they need?</li> <li>• Can they describe their design using an accurately labelled sketch and words?</li> <li>• How realistic is their plan?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they use equipment and tools accurately?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they explain what they changed which made their design even better?</li> </ul>

## Breadth of study

<p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Can they choose the right ingredients for a product?</li> <li>• Can they use equipment safely?</li> <li>• Can they make sure that their product looks attractive?</li> <li>• Can they describe how their combined ingredients come together?</li> <li>• Can they set out to grow plants such as cress and herbs from seed with the intention of using them for their food product?</li> </ul>		<p><b>Stiff and flexible sheet materials</b></p> <ul style="list-style-type: none"> <li>• Do they use the most appropriate materials?</li> <li>• Can they work accurately to make cuts and holes?</li> <li>• Can they join materials?</li> <li>• Can they measure carefully so as to make sure they have not made mistakes?</li> <li>• How have they attempted to make their product strong?</li> </ul>		<p><b>Mouldable materials</b></p> <ul style="list-style-type: none"> <li>• Do they select the most appropriate materials?</li> <li>• Can they use a range of techniques to shape and mould?</li> <li>• Do they use finishing techniques, showing an awareness of audience?</li> </ul>
--	--	---	--	---

# 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
<ul style="list-style-type: none"> <li>• Can they come up with at least one idea about how to create their product?</li> <li>• Do they take account of the ideas of others when designing?</li> <li>• Can they produce a plan and explain it to others?</li> <li>• Can they suggest some improvements and say what was good and not so good about their original design?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they tell if their finished product is going to be good quality?</li> <li>• Are they conscience of the need to produce something that will be liked by others?</li> <li>• Can they show a good level of expertise when using a range of tools and equipment?</li> <li>• Do they work at their product even though their original idea might not have worked?</li> </ul>	<ul style="list-style-type: none"> <li>• Have they thought of how they will check if their design is successful?</li> <li>• Can they begin to explain how they can improve their original design?</li> <li>• Can they evaluate their product, thinking of both appearance and the way it works?</li> <li>• Do they take time to consider how they could have made their idea better?</li> </ul>

## Breadth of study

<p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Do they know what to do to be hygienic and safe?</li> <li>• Have they thought what they can do to present their product in an interesting way?</li> </ul>	<p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Do they think what the user would want when choosing textiles?</li> <li>• Can they choose textiles both for their appearance and also qualities?</li> <li>• Have they thought about how to make their product strong?</li> <li>• Can they devise a template?</li> <li>• Can they explain how to join things in</li> </ul>	<p>© Focus Education 2014</p>	<p><b>Electrical and mechanical components</b></p> <ul style="list-style-type: none"> <li>• Can they add things to their circuits?</li> <li>• How have they altered their product after checking it?</li> <li>• Are they confident about trying out new and different ideas?</li> <li>• Do they select the most appropriate tools and</li> </ul>	
--	---	-------------------------------	--	--

# 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
<ul style="list-style-type: none"> <li>• Can they come up with a range of ideas after they have collected information?</li> <li>• Do they take a user's view into account when designing?</li> <li>• Can they produce a detailed step-by-step plan?</li> <li>• Can they suggest some alternative plans and say what the good points and drawbacks are about each?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they explain why their finished product is going to be of good quality?</li> <li>• Can they explain how their product will appeal to the audience?</li> <li>• Can they use a range of tools and equipment expertly?</li> <li>• Do they persevere through different stages of the making process?</li> </ul>	<ul style="list-style-type: none"> <li>• Do they keep checking that their design is the best it can be?</li> <li>• Do they check whether anything could be improved?</li> <li>• Can they evaluate appearance and function against the original criteria?</li> </ul>

## Breadth of study

<p><b>Cooking and nutrition</b></p> <ul style="list-style-type: none"> <li>• Can they describe what they do to be both hygienic and safe?</li> <li>• How have they presented their product well?</li> </ul>			<p><b>Stiff and flexible sheet materials</b></p> <ul style="list-style-type: none"> <li>• Are their measurements accurate enough to ensure that everything is precise?</li> <li>• How have they ensured that their product is strong and fit for purpose?</li> <li>• Can they justify why they selected specific materials?</li> <li>• How have they ensured that their</li> </ul>	<p><b>Mouldable materials</b></p> <ul style="list-style-type: none"> <li>• Can they justify why the chosen material was the best for the task?</li> <li>• Can they justify design in relation to the audience?</li> <li>• Are they motivated enough to refine and further improve their product using mouldable materials?</li> </ul>
---	--	--	--	---

# 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
<ul style="list-style-type: none"> <li>• Can they use a range of information to inform their design?</li> <li>• Can they use market research to inform plans?</li> <li>• Can they work within constraints?</li> <li>• Can they follow and refine their plan if necessary?</li> <li>• Can they justify their plan to someone else?</li> <li>• Do they consider culture and society in their designs?</li> </ul>	<ul style="list-style-type: none"> <li>• Can they use tools and materials precisely?</li> <li>• Do they change the way they are working if needed?</li> </ul>	<ul style="list-style-type: none"> <li>• How well do they test and evaluate their final product?</li> <li>• Is it fit for purpose?</li> <li>• What would improve it?</li> <li>• Would different resources have improved their product?</li> <li>• Would they need more or different information to make it even better?</li> <li>• Does their product meet all design criteria?</li> <li>• Did they consider the use of the product when selecting materials?</li> </ul>

## Breadth of study

Cooking and nutrition	Textiles	Electrical and mechanical components	Stiff and flexible sheet materials	Mouldable materials
<ul style="list-style-type: none"> <li>• Can they explain how their product should be stored with reasons?</li> <li>• Can they set out to grow their own products with a view to making a salad, taking account of time required to grow different foods?</li> </ul>	<ul style="list-style-type: none"> <li>• Do they think what the user would want when choosing textiles?</li> <li>• How have they made their product attractive and strong?</li> <li>• Have they thought about how their product could be sold?</li> <li>• Can they make up a prototype first?</li> <li>• Can they use a range of joining</li> </ul>	<ul style="list-style-type: none"> <li>• Can they use different kinds of circuit in their product?</li> <li>• Can they incorporate a switch into their product?</li> <li>• Can they think of ways in which adding a circuit would improve their product?</li> <li>• Can they refine their</li> </ul>		