

Design & Technology

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.

Key Stage 2

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.

Key Stage 1	
<p>Y1</p> <p>I can describe in some detail how things are made.</p> <p>I can describe a products basic features.</p> <p>I can describe what something is for and what it has to do.</p> <p>I can record my ideas using drawings with labels.</p> <p>I can record my ideas using writing.</p> <p>I can record my ideas using ICT.</p> <p>I can begin to join materials together using simple joining techniques.</p> <p>I can use different simple tools carefully and safely.</p> <p>I can say at least one thing that would make something better to improve a product.</p>	<p>Y2</p> <p>I can describe in detail how things are made.</p> <p>I can describe the features of a product.</p> <p>I can describe a products purpose and use.</p> <p>I can confidently record my ideas using drawings and labels.</p> <p>I can record my ideas using writing.</p> <p>I can record my ideas using ICT.</p> <p>I can join materials together using simple joining techniques.</p> <p>I can use different tools safely and carefully.</p> <p>I can discuss ways to improve a product.</p>
Key Stage 2	
<p>Y3</p> <p>I am beginning to research including ICT to get ideas for my designs.</p> <p>I am beginning to explain how or why my design fits with the needs of people or places.</p> <p>I can record my ideas using labelled diagrams.</p> <p>I can record my ideas using plans.</p> <p>I can record my ideas using writing.</p> <p>I can record my ideas using ICT.</p> <p>I am beginning to match the materials I need to the design I am doing.</p> <p>I can measure, mark, cut and assemble components accurately and safely.</p> <p>I can evaluate my product against the original design</p>	<p>Y4</p> <p>I can research, including using ICT to get ideas for my designs.</p> <p>I can explain how or why my design fits with the needs of people or places.</p> <p>I can record my ideas using labelled diagrams.</p> <p>I can record my ideas using plans.</p> <p>I can record my ideas using writing.</p> <p>I can record my ideas using ICT.</p> <p>I can match the materials I need to the task I am doing.</p> <p>I can measure, mark, cut and assemble components accurately and safely.</p> <p>I can evaluate my product against the original design specification, and I can suggest how I might improve it or</p>

specification, and I can suggest how I might improve it or change it.

change it.

Y5

I am beginning to research, including using ICT to find other peoples' designs that are in use, to adapt for my own design.

I can begin to explain how or why someone else's design fits with the needs of people or places.

I am beginning to design a range of different designs and choose the most appropriate.

I can explain why I have made my choice.

I am beginning to think about the time I have to make my product and make sure I use the time wisely to finish it.

I am beginning to think about materials and cost.

I can record my ideas using annotated diagrams.

I can record my ideas using plans.

I can record my ideas using writing.

I can record my ideas using ICT.

I can match the materials I need to the task I am doing.

I can measure, mark, cut and assemble components accurately and safely.

I am beginning to trial my own ideas and update them or develop them as they are being made.

I can evaluate my product against the original design specification, and I can suggest how I might improve it or change it.

I can compare the effectiveness of products with those of other designers and begin to make up a fair test.

Y6

I can research, including using ICT to find other peoples' designs that are in use, to adapt for my own design.

I can explain how or why someone else's design fits with the needs of people or places.

I can design a range of different designs and choose the most appropriate.

I can explain why I have made my choice.

I can think about the time I have to make my product and make sure I use the time wisely to finish it.

I can show that I have thought about materials and cost.

I can record my ideas using annotated diagrams.

I can record my ideas using plans.

I can record my ideas using writing.

I can record my ideas using ICT.

I can confidently match the materials I need to the task I am doing.

I can measure, mark, cut and assemble components accurately and safely.

I can trial my own ideas and update them or develop them as they are being made.

I can evaluate my product against the original design specification, and I can suggest how I might improve it or change it.

I can compare the effectiveness of products with those of other designers and make up a fair test.