



## ICT in Design and Technology at Key Stage 1 & 2

Design and Technology activities are intended to prepare pupils to participate in a world of changing technologies. The National Curriculum orders for design and technology require pupils to become autonomous and creative problem solvers. They must identify needs, wants and opportunities and respond to them by developing a range of ideas, and making products and systems, which include the use of ICT.

### The QCA Schemes of work

The QCA schemes of work identify three main areas of ICT activity that are required to support work in D&T. These appear

- Using a draw program (KS1 & 2)
- Using a word processor (KS2)
- Using control (KS2)

There are opportunities to use the Internet and CD-ROMs to aid research into existing products and possible designs.

The following paragraphs identify the D&T units where ICT is needed and give a brief description of how it is to be used.

### 2A Vehicles

In this unit pupils are asked to design and make a wheeled vehicle for a purpose. ICT is used to design graphics that can be cut out and stuck on models. ICT Unit 2B Creating pictures supports this unit.

### 2D Joseph's Coat

In this unit pupils are asked to design and make a model coat for Joseph. ICT is used to create patterns and designs for Joseph's coat. ICT Unit 2B Creating pictures supports this unit.

### 3A Packaging

In this unit pupils are asked to design and make packaging for a specific purpose. ICT supports this unit by using a word processor and paint package to combine text and graphics to make a mock up of packages. ICT Units 3A Combining Text and Graphics & 4A Writing for Different Audiences support this unit.

### 4B Storybooks

In this unit pupils are asked to design and make a storybook that has moving parts for a specific purpose. ICT supports this unit by allowing pupils to combine fonts and graphics and use them in the design and production of a cover for a storybook. ICT Units 3A Combining Text and Graphics & 4A Writing for Different Audiences support this unit.

#### **4D Alarms**

In this unit pupils are asked to design and make an alarm that will protect something. ICT can be used to control an alarm using a suitable control program and interface box. ICT Unit 5E Controlling Devices supports this unit.

#### **4E Lighting It Up**

In this unit pupils are asked to design and make a new type of light that they can control and that satisfies the needs of the person who will use it. This unit encourages market research using CD-ROMs and the Internet. It also gives an opportunity to control finished lights using a control box and appropriate software; this may best be done as a teacher demonstration. ICT Units 5E Controlling Devices & 5B Analysing Data and Asking Questions Using Complex Searches support this unit.

#### **5B Bread**

In this unit pupils are asked to design and make a new bread product for a specific occasion or person. This unit involves using the Internet or CD-ROMs to investigate different types of bread. It also asks pupils to use a word processor to modify an existing recipe. ICT Units 5B Analysing Data and Asking Questions Using Complex Searches, 3A Combining Text and Graphics & 4A Writing for Different Audiences support this unit.

#### **6C Fairground**

In this unit pupils are asked to design and make a model of a fairground ride. ICT supports this unit by allowing pupils to control fairground rides and using a suitable control program and interface box. ICT Unit 5E Controlling Devices supports this unit.

#### **6D Controllable Vehicles**

In this unit pupils are asked to design and make a controllable toy vehicle. ICT can be used to control a vehicle using a suitable control program and interface box. ICT Unit 5E Controlling Devices supports this unit.

#### **Long term Planning**

At KS1 the ICT units that support the D&T activities should be planned so they occur at the beginning of the year. In Year 3 ICT Unit 3A Combining Text and Graphics may need to include some of the work from Unit 4A Writing for Different Audiences. The control aspects of the Year 4 D&T units do not appear until the Year 5 ICT Unit 5E Controlling Devices. Teachers will need to decide whether to swap the two Year 4 D&T units with two from Year 5 or not to use control in the Y4 D&T units. In Years 5 and 6 ICT units should be covered before the D&T units to which they relate.

#### **Hardware**

A control interface box is required along with motors, bulbs, buzzers and switches that are connected to lengths of wire and are terminated with plugs suitable for use with the control box.

#### **Assessment**

At KS1 & 2 the ICT needed to support the D&T units will usually have been taught separately, and should be assessed during ICT lessons. When assessing D&T work that has involved ICT it is important to assess the achievement of D&T objectives and not ICT objectives. Some teachers may wish to combine teaching of ICT and D&T. In this case it is important to assess achievement of ICT and D&T objectives separately. Key Stage 1 and 2 Software audit for Design and Technology

### Key Stage 1

QCA Unit of work	Application	Software	Located
D&T Unit 2A/2D	Paint program (Repeat patterns)		

### Key Stage 2

D&T Unit 3A/4B	Word Processor  Paint Program		
D&T Unit 4D/4E/6C/6D	Control box, software		
D&T Unit 4D	Programmable chip (optional)		
D&T Unit 5B	Internet access		