

# 6 The ICT dimension

The Nuffield Project has always taken the view that design and technology provides ample opportunity for using information and communication technology (ICT). All Capability Tasks have an ICT opportunities section and many Resource Tasks have a 'Doing it the ICT way option

The Programme of Study of the new Orders considers the teaching of ICT to be in four categories:

- finding things out;
- developing ideas and making things happen;
- exchanging and sharing information;
- reviewing; modifying and evaluating work as it progresses.

The way in which you can use the Nuffield approach and materials in meeting the requirements of the new Orders for ICT at Key Stage 3 is described below.

## Finding things out

In each Capability Tasks there is a website address which students can use for research purposes. As websites do not necessarily have a long life; there is also a search engine entry which students can use for further and wider research. It will be important for you to discuss with your students how to make good use of search engines and also to encourage them to be sceptical of the information they gain from the web.

Several of the Case Studies and some of the Resource Tasks contain relevant website addresses. It is important that you encourage critical scrutiny.

## Developing ideas and making things happen

You can use SRT 28 Modelling with spreadsheets to teach the basics of using a spreadsheet and then encourage students to use this valuable tool whenever they are trying to cost different design proposals.

You can use FRT 9 Costing to enable students to use spreadsheets in costing a recipe.

You can use the Computer Control Resource Tasks to develop expertise in using ICT for control purposes.

Clearly, CAD/CAM (computer-assisted design and computer-assisted manufacture) provide a useful way to develop ideas and make things happen. You can use SRT 27 Modelling with CAD to introduce students to CAD. You can use SRT 26 Using nets to introduce students to CAD/CAM.

All the Capability Tasks which give outcomes in resistant materials or graphic media have the potential for utilising CAD/CAM, and the tasks suggest how you might do this. There are often possibilities for using CAD/CAM in Capability Tasks which use textiles and, where this is appropriate, suggestions are given, for example use of CAD/CAM to develop printing blocks for decorative patterns, or to produce embroidered motifs, as in T-tops.

## Exchanging and sharing information

You can teach students to handle images using ICT through the Strategy Resource Tasks: SRT 9 Choosing and manipulating images SRT 10 Capturing and manipulating images. You can use CRT 11 Presenting food product designs to introduce students to using a digital camera. You can use CRT 9 Presenting textile product designs to introduce students to using a scanner.

There are several Capability Tasks which require students to develop product support information and these provide an ideal opportunity to use ICT to prepare information incorporating diagrams, graphs, images, tables and text, for example 'Remember your holiday' cookbook from Hi Quality Tours-

There are exciting prospects for communicating, sharing and exchanging information in design and technology. Remote clients can be kept in touch with the progress of a design brief (see section 3.4, page 33). You can link up with a distant school tackling the same or similar Capability Tasks and use e-mail or a forum on the school website to exchange design ideas. An interesting possibility for each school is to develop design ideas which the other school then manufactures! There are several ways to tackle you make what we've designed". The simplest is to send drawings through the post. A more sophisticated way is to produce the drawings as a file which is e-mailed, printed out and read as plans for making. The most sophisticated way is to produce the information for making as a CAD/CAM file which can be read by the other school's computer. The design can then be manufactured using a computer-controlled machine: xy-cutter, lathe, mill or sewing machine. If you have the facilities, video conferencing adds immediacy to the activity.

## Reviewing, modifying and evaluating work as it progresses

This requires thinking very similar to that required by students when they consider how well they have done in a Capability Task. So there are excellent opportunities to do this at the end of Capability Tasks as part of students' self assessment.

Students can fill in a table like the one below.

**Table 8 Using ICT in Capability Task**

If you used ICT in this Capability Task fill in the following grid.

Did I use ICT ...	Yes/No	If 'No' why not?	If 'Yes' did it help and if so how?
<b>a</b> for finding things out?			
<b>b</b> for developing design ideas?			
<b>c</b> for presenting design ideas?			
<b>d</b> for presenting other sorts of information?			
<b>e</b> for making my design?			
<b>f</b> for controlling my design?			