

ICT Capability KS3

Design and Technology

Key concepts



The **National Curriculum programme of study for ICT** groups the knowledge, skills and understanding that pupils need to acquire into four themes. The Key Stage 3 Strategy publication entitled **Framework for teaching ICT capability: Years 7, 8 and 9** sub divides each of the first three themes into 3 key concepts.

The resulting **9 key concepts** shown in the diagram provide a useful way forward when considering the breadth of ICT capability. The fourth theme (Reviewing, modifying and evaluating work as it progresses) is a critical feature of ICT capability, which needs to be integrated throughout all areas.

Successful implementation of the ICT strand of the Key Stage 3 Strategy should afford greater opportunities for pupils to apply and develop their ICT capability in different subjects. Subject areas can build on and exploit pupils' ICT capability to enhance teaching and learning in their respective subjects.

Examples of where ICT key concepts can be applied and developed in Design and Technology are shown below.

Key to ICT National Curriculum themes:

- ▶ Finding things out
- ▶ Developing ideas and making things happen
- ▶ Exchanging and sharing information
- ▶ Reviewing, modifying and evaluating work as it progresses

1 Using data and information sources

ICT allows us to explore a variety of information sources to generate ideas, taking into account users needs. It lets us develop our understanding of designing and making by investigating familiar products and ideas and finding out about the work of designers and the manufacturing industry.

4 Analysing and automating processes

ICT based automated processes are central to modern manufacturing techniques. Sophisticated CAD software enables 2D drawings to be transformed to 3D representations. CAD drawing may be further processed to generate the coding required to programme automated equipment to manufacture the product in a wide range of materials with repeated accuracy.

6 Control and monitoring

ICT allows us to design, analyse and operate systems. Designing and implementing control systems that can be tested in use are at the heart of Design and Technology. ICT will let us simulate complex processes and draw design conclusions from the results.

8 Refining and presenting information

ICT can be used to present and display ideas and products to others, exploiting a wide variety of media. Ideas can be crystallised, presented and explained to different audiences using a range of multimedia tools.