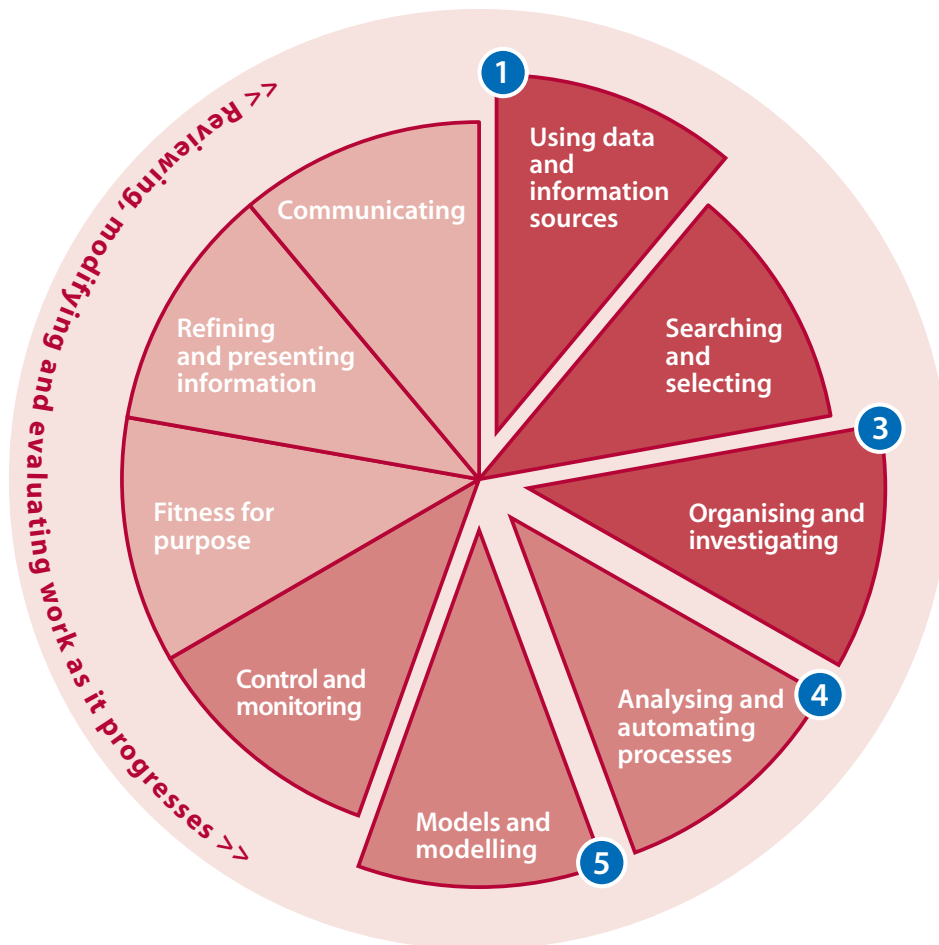# ICT Capability KS3
Key concepts

Mathematics

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 Mathematics are shown below.

Circular diagram segments:
- 1 — Using data and information sources
- Searching and selecting
- 3 — Organising and investigating
- 4 — Analysing and automating processes
- 5 — Models and modelling
- Control and monitoring
- Fitness for purpose
- Refining and presenting information
- Communicating
- >> Reviewing, modifying and evaluating work as it progresses >>

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 gives us access to large quantities of data and gives us the tools to represent it in a variety of ways. We can use these opportunities to help us interpret data and discuss ways that information may be distorted by misrepresentation.

3 Organising and investigating

ICT allows us to collect, sort and represent data efficiently and effectively. It enables us to solve mathematical problems and conduct statistical investigations using our own data as well as that collected by others.

4 Analysing and automating processes

ICT enables us to use automated processes to increase efficiency and create simple software routines to aid the exploration of a mathematical situation. We can undertake more in depth and effective analysis of the mathematics using ICT.

5 Models and modelling

ICT enables us to refine different models by changing variables to test hypotheses and solve optimisation problems. Mathematical modelling can involve finding an appropriate algebraic function to fit data relating to a mathematical problem or a real life situation being explored.