Curriculum objectives
● To recognise common uses of information technology beyond school.

Lesson objectives
● To learn that a CPU contains the computer 'brain'.
● To be able to explain that a CPU processes instructions given by input devices.
● To be able to explain that a CPU gives instructions to output devices.

Expected outcomes
● Can understand in simple terms how a CPU works.
● Can explain that the CPU follows instructions.

Resources
Media resource 'CPU'; interactive activity 'What does CPU stand for?'; photocopiable page 53 'Computer instruction cards (1)'; photocopiable page 54 'Computer instruction cards (2)'

Learning about the CPU

In this lesson, the children will learn about the main functions of a CPU and be able to explain what the acronym stands for and, in simple terms, how it works. This lesson will bring together their understanding about computers from previous lessons as they learn that the CPU contains the computer 'brain'.

Introduction
● Display the first screen of the media resource 'CPU' on the CD-ROM on the whiteboard.
● Explain to the children that they will be learning about the 'brains' of the computer today.
● Explain that this is the part that gets the information from the input devices (mouse and keyboard) and tells the output device (screen) what to show.
● Use the interactive activity 'What does CPU stand for?' on the CD-ROM to help the children find out what the letters stand for. In simple terms, try to explain what each word in 'central processing unit' means.

Whole-class work
● Show the children screen 2 in the media resource 'CPU' and explain that the instructions they give the computer are processed by the CPU.
● Ask three volunteers to stand in a row at the front of the class and have ready the cards prepared from photocopiable page 53 'Computer instruction cards (1)'.
● Explain that child 1 is the 'input', child 2 in the middle is the 'CPU' and child 3 is the 'output'. You could recap here what input and output devices they know.
● Give the first card to child 1 who is 'inputting' the instruction into the CPU. The child should pass the instructions to the middle child. The middle child should then whisper the instruction to the third 'output' child, who should then action the instruction.
● Ask the rest of the class to guess what the instruction was.
● Repeat this with the remaining two instructions, emphasising that the input device is telling the CPU what it wants to happen and the CPU must tell the output device what this is (so the CPU is following the instructions given to it).

Group work
● Ideally in groups of three, ask the children to decide who will be 'input', 'CPU' and 'output' and distribute the photocopiable page 54 'Computer instruction cards (2)'.
● Ask the 'input' child to pass the instruction card to the 'CPU', who should then whisper the instructions to the 'output' device, who should carry out the instruction (as modelled in the whole-class activity).
● They should then check whether the instruction has been processed correctly.
● They can swap roles around if you/they wish.

> ### Differentiation
> ● Support: Less confident learners may benefit from mixed-ability groupings or further adult support when undertaking the small group task.
> ● Challenge: More confident learners could make up their own instructions in addition to the computer instruction cards.

Review
● Ask groups to demonstrate the processing of a card for the rest of the class to guess. This is helpful for groups who made up their own instructions.
● Review the children's understanding of a CPU by asking questions such as:
  ● *What does a CPU do?*
  ● *Where does a CPU get the instructions from?*
  ● *How does a CPU know what to do?*
  ● *Where would you find a CPU in this computer?* (Point to a class computer.)