

# Computer System Storage

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This series of lessons will take a detailed look inside computer systems and explain how the components aid the flow of data around the system. Students will be assessed at the end of the unit on a mini project based on a historical computing system of their choice from LGL History of Computing Website.

## Computing National Curriculum Attainment Target:

- KS3: Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems
- KS4: Develop their capability, creativity and knowledge in computer science, digital media and information technology

## Lesson Objectives:

- Know how data is stored in a computer system.
- Understand how storage devices have changed over time.
- Be able to explain with examples the differences between main memory and secondary storage.

## Lesson Outcomes:

- All: Be able to give an example of how data is stored in a computer system.
- Most: Be able to explain the purpose of memory and secondary storage in a computer system with examples of devices.
- Some: Be able to explain the purpose of memory and secondary storage in a computer system with examples of devices. Be able to describe how the processor uses memory and secondary storage with a story example.

## Lesson Resources:

- Computing device & Projector
- Data flow diagram - LGfL site.

## Video Resources:

- WITCH - *Storage 1 RAM & Counters & Storage 2 RAM expansion*
- ICL Mainframe 2966 - *Storage & Storage Single Disk*
- Elliot 903 - *Storage*
- Elliot 803 - *Storage*

## Lesson 6 - Naked Computers

### Computer System Storage

- IBM 1130 - [Storage & Storage 2](#)

#### Keywords:

- Random Access Memory
- Hard disk Drive
- Storage
- Memory
- Process

#### Lesson Summary:

This lesson will concentrate on Storage devices of computers. Students should develop their mini project to include how the system of their choice stored data, and how computing devices now store data.

#### Starter:

Ask for a few volunteers from the class to take part in a memory game. The rules: to remember as many of the objects as you can in any order. Whilst the objects appear, the student must sing a nursery rhyme (or be doing some other task).

After the game discuss with the class the problems with trying to process the new data (seeing the objects and remembering them) Explain that a computer system works in much the same way. The processor is processing new information all the time whilst performing other tasks so it needs to hold the data somewhere for a short while (this is the memory) and when the data is inactive it needs to be stored somewhere permanently (the secondary storage device).

#### Main/Development:

1. Using [Lesson 5 – PPT Presentation](#) explain the purpose of memory and storage in a computer system. Discuss the difference between memory and storage with the class referring to the memory game to help them understand.
2. Using the play some of the historical system videos on storage. Discuss the differences and similarities between memory and storage now and in the past.
3. Students can continue their work on their project adding a section of memory and storage. They should research how data was stored by their system using the LGfL website and videos and compare it with a modern computer. Students can choose any historical computer from the LGfL history of computing website.

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#### Extension:

Students should draw a diagram to explain how process, memory, and storage works by telling a story like the kitchen, supermarket story. They may use pictures as well as shapes to help.

#### Plenary:

Play “Questions you would like to ask”.

Give students two minutes to write down a question that today’s lesson has inspired them to think off.

Then ask a number of students to read out your questions and as a class discuss the answers, or ask students to find out the answers for homework.