Lesson 5 - Storage Devices

In this lesson, students will learn about different types of storage media and their characteristics. They will understand the difference between volatile and non-volatile memory and explore various examples of storage media such as RAM, SSD, HDD, optical discs, and flash drives. Students will also learn about network attached storage (NAS) and its benefits. Through guided and independent practice, students will analyze the advantages and disadvantages of different storage media. By the end of the lesson, students will be able to explain the differences between network storage and cloud storage and identify key points about storage media.

The objectives of this lesson are:

* Define volatile and non-volatile memory and provide examples.
* Identify and analyze the advantages and disadvantages of different storage media.
* Explain the concept of network attached storage (NAS) and its benefits.
* Differentiate between network storage and cloud storage. 5. Summarize key points about storage media.

Materials:

- Whiteboard or chalkboard

- Markers or chalk

- Handouts with information on different storage media

- Computers or laptops with internet access for independent practice

Bell-Ringer Activity:

1. Display the following question on the board: "What is the difference between volatile and non-volatile memory?"

2. Give students 5 minutes to write down their answers individually.

3. After 5 minutes, ask a few students to share their answers with the class.

Introduction:

1. Begin the lesson by explaining the importance of storage media in today's digital world.

2. Discuss how storage media is used to store and retrieve data in various devices such as computers, smartphones, and cameras.

3. Introduce the concept of volatile and non-volatile memory, explaining that volatile memory loses its data when power is turned off, while non-volatile memory retains its data even when power is turned off.

Direct Instruction:

1. Define volatile memory and provide examples, such as Random Access Memory (RAM).

2. Define non-volatile memory and provide examples, such as solid state drives (SSD), hard disk drives (HDD), optical discs, and flash drives.

3. Explain the advantages and disadvantages of each type of storage media, including factors such as speed, capacity, durability, and cost.

4. Introduce the term Network Attached Storage (NAS) and explain how it allows multiple devices to access and share data over a network.

Guided Practice:

1. Distribute handouts with information on different storage media.

2. In pairs or small groups, ask students to read the handouts and discuss the advantages and disadvantages of each type of storage media.

3. Walk around the classroom to provide assistance and answer any questions.

Independent Practice:

1. Instruct students to research and find examples of network storage and cloud storage.

2. Ask them to write a short paragraph explaining the differences between network storage and cloud storage.

3. Provide computers or laptops with internet access for students to conduct their research.

4. Monitor their progress and provide guidance as needed.

Exit Ticket:

1. Ask students to write down three key points they learned about storage media during the lesson.

2. Collect the exit tickets before the end of the class.

Closure:

1. Review the key points discussed during the lesson, emphasizing the differences between volatile and non-volatile memory, as well as the various types of storage media.

2. Summarize the advantages and disadvantages of each type of storage media.

3. Reinforce the importance of understanding different storage options in today's digital world.

4. Preview the next lesson, which will focus on data backup and recovery methods.