Lesson 6 - IoT

In this lesson, students will learn about different computing devices and the concept of the Internet of Things (IoT). They will start by brainstorming and listing various computing devices. The teacher will then introduce the term IoT and engage students in a discussion about its meaning and relevance in today's world. The teacher will explain that IoT refers to the network of physical objects embedded with sensors, software, and connectivity that can collect and exchange data over the internet. Examples of IoT devices, such as smart home appliances and connected cars, will be given. The teacher will also discuss the benefits and risks associated with IoT devices. In the guided practice, students will categorize examples of computing devices and IoT devices. They will then work in pairs to compare their lists of IoT devices and share their findings with the class. Finally, students will complete an exit ticket to reflect on one thing they learned about IoT devices during the lesson.

Objectives:

- Students will be able to list different computing devices including mobile devices, workstations, servers, game consoles, and embedded devices.

- Students will be able to explain the term IoT, or Internet of Things.

- Students will be able to list examples of IoT devices such as home appliances, home automation, vehicles, media players, and medical devices.

Materials:

- Whiteboard or blackboard

- Markers or chalk

- Handouts with examples of computing devices and IoT devices

Bell-Ringer Activity (5 minutes):

- Display a picture of a smartphone on the board.

- Ask students to brainstorm and write down as many different computing devices as they can think of in their notebooks.

- After 2 minutes, ask students to share their answers with the class.

Introduction (10 minutes):

- Begin by asking students if they have ever heard of the term "Internet of Things" or IoT.

- Write the term "Internet of Things" on the board and ask students if they can guess what it means.

- Engage students in a brief discussion about the concept of IoT and its relevance in today's world.

- Explain that IoT refers to the network of physical objects or "things" embedded with sensors, software, and connectivity, which enables them to collect and exchange data over the internet.

- Emphasize that IoT devices are becoming increasingly common in our daily lives and give examples such as smart home appliances, wearable devices, and connected cars.

Direct Instruction (20 minutes):

- Provide a list of different computing devices on the board, including mobile devices, workstations, servers, game consoles, and embedded devices.

- Explain each type of device, highlighting their characteristics and common uses.

- Discuss the importance of these devices in our daily lives and how they have revolutionized communication, entertainment, and productivity.

- Transition to the topic of IoT devices and explain that they are a subset of computing devices that are connected to the internet and can communicate with each other.

- Give examples of IoT devices such as home appliances, home automation systems, vehicles, media players, and medical devices.

- Discuss the benefits and potential risks associated with IoT devices, such as increased convenience and efficiency, but also privacy and security concerns.

Guided Practice (25 minutes):

- Distribute handouts with examples of computing devices and IoT devices.

- In pairs or small groups, ask students to categorize the devices into either computing devices or IoT devices.

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

- After 15 minutes, ask each group to share their categorization with the class and discuss any disagreements or different perspectives.

Independent Practice (25 minutes):

- Ask students to individually create a list of at least five examples of IoT devices in their notebooks.

- Encourage them to think beyond the examples discussed in class and consider different areas such as healthcare, agriculture, and transportation.

- After 15 minutes, ask students to share their examples with a partner and discuss any similarities or differences in their lists.

Exit Ticket (5 minutes):

- Distribute exit tickets and ask students to write down one thing they learned about IoT devices during the lesson.

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

Closure (5 minutes):

- Recap the main points of the lesson, emphasizing the different types of computing devices and the concept of IoT.

- Highlight the importance of understanding these devices in the context of the rapidly evolving technological landscape.

- Encourage students to continue exploring and learning about IoT devices and their impact on society.