Objective

By the end of this lesson, you will understand how digital systems represent and transmit data.

Materials and Prep

Materials: Computer or tablet with internet access

Prep: Make sure the student is familiar with using a computer or tablet.

Activities

1. Watch a short video explaining how computers represent data using binary code.

2. Play a game where the student represents their name using binary code (A=01000001, B=01000010, etc.).

3. Explore how images are represented digitally by drawing a simple pixel art on a digital canvas.

Talking Points

- Binary code is a language that computers use to represent data. You can think of it as a secret code where everything is made up of 0s and 1s. Remember, 0 means off and 1 means on in binary code.
- When you type a letter on the computer, the computer actually converts that letter into binary code before storing it. So, every letter, number, or symbol you see on the screen is represented by a unique combination of 0s and 1s.
- Just like how we use different colors to draw pictures on paper, computers use combinations of 0s and 1s to create images on the screen. Each tiny square on the screen is called a pixel, and each pixel has its own binary code that tells the computer what color to display.