

Coding Fundamentals



Micro:bit Python Programming Animations

Overview

In this lesson, students learn to animate images on the micro: bit LEDs using Python.

Objectives

- Better understand and use arrays
- Animate an image

Materials

- micro:bit and micro-USB cord
- Computer with access to the internet

Approx. Time Required

1-2 hours

Cyber Connections

- **Programming** – Students will program in Python.
- **Hardware and Software** – Students will utilize small electronics and learn how a computer is programmed while using micro-controllers.

Teacher Notes:

Animations

- Remind students of the concepts of DIY images, variables, and arrays
- Prompt a revisiting of the `display.scroll()` command. While the text scrolls across, invite students to use what they already know to figure out how these words are animated across the display. Recreating this will be the main objective of this lesson.
- Now that students are thinking about the individual images that comprise animation, it is time for them to create their own animated images with DIY images and an array to display them. If students have trouble thinking of an image/scene to animate here are some ideas: raindrops falling, fireworks, boat sinking, a snake circling the display, or a dot growing to fill the whole screen.
- It may be helpful to sketch out the images in order before trying to program. Remind students that the images should build upon one another and be in the array in the order they want them displayed.
- The delay timer in the `display.show()` command will be key to determine the speed of the animation.
- Advanced students can try scrolling their own message (with text) across the screen without the use of the scroll command.