Out of Seat Coding Activity

15 min

Overview:
An activity to be used before (or during) students use the Lightbot app to help them understand what programming/coding is and what efficient means.

Performance Objectives:
Students will-

Understand what it means to be efficient.
Understand that computers do only what they are told to do, in the specific order they were given.
Have an base of coding before starting the Lightbot app.

Lesson:
Out of seat activity

- Assign four student volunteers.

- Assign two of these students to be computer programmers and two to be robots.

- There will be two groups:
    - Each group machine will have one coder & one machine/robot
    - Define the challenge/problem:

- Each robot needs to get to a specific point in the room (i.e. a doorway or other location in the room)

- Define the challenge (or problem):
    - The challenge is to get the robot to that location

- To do this, each coder will give their robot a set of steps in a particular order (sequence) that tells their robot how to get there by writing them on a piece of paper.

For example:
go five steps forward
Turn left
Go 7 steps forward
And so on

- Explain that just like in a computer system, the robot can only perform the instructions in the exact order the coder gave them.

- Tell the robot to perform these instructions when their coder says start.

- Once the robots have finished following their program or instructions, ask the rest of the class which path they think was more efficient (assuming one was more efficient over the other) or which path the simplest and fastest way the robot got to the location.

- Transition into Lightbot/Lightbot Jr. app