

Smart Cutebot

Prior Knowledge

They know how to use a basic Micro:Bit...Basic Blocks, simulator, and bluetooth

Overview

Day 1: Introduction to Smart Cutebot (50 minutes)

Objective: Program the Micro:Bit with a picture on the display board, turn 90 degrees to the left and right, move forward and backward.

Day 2: Creating a shape with Cutebot (50 minutes)

Objective: Program the Micro:Bit to successfully drive in a selected shape utilizing turns and forward and backward motions.

Day 3: Acceleration and speed test (race) (50 minutes)

Objective: Program the Micro:Bit acceleration and use Loops for increased distance.

Day 4: Obstacle Course using turns (50 minutes)

Objective: Teams will program their Cutebot to navigate through a series of obstacles increasing the duration it takes to successfully complete each challenge.

Materials

Smart Cutebot - batteries

Micro:Bit V1 or V2

USB connector

Laptop

Tape

Add Extension "Cutebot"

Day 1: Introduction to Smart Cutebot (50 minutes)

Objective: Program the Micro:Bit with a picture on the display board, turn 90 degrees to the left and right, move forward and backward.

Warm Up: BellWork

1. Go to extensions and search cutebot.
2. Choose the cutebot extension.
3. Predict what you think will happen with the blocks from the extension.

4. Share with a partner

Activity: Constructing Knowledge

1. Review the basic blocks used with Micro:Bits.
2. With your Partner, complete the following tasks:
 - a. Program an icon, number, or string.
 - b. Use the Cutebot blocks to program your cutebot to turn right and then left.
 - c. Use the Cutebot blocks program to move your cutebot forward and backward.
3. Random Reporter: Teams share how they accomplished each task and/or other new skills they learned whilst completing minimum requirements (finger tracing)

Wrap Up: 3-2 1

- What are 3 things you learned?
- What are 2 things you found interesting?
- What is 1 thing you have a question about?

Day 2: Creating a shape with Cutebot (50 minutes)

Objective: Program the Micro:Bit to successfully drive in a selected shape utilizing turns and forward and backward motions.

Warm Up: BellWork

1. Display two programs that include cutebot blocks for turning and moving forward and backward.
2. Partner A will look at program A and partner B will look at program B.
3. Finger Trace to determine what the program is doing.
4. Share with your partner what the program does.

Activity: Constructing Knowledge

1. What are shapes that have 90 degree angles?
2. How would you program your cutebot to make a shape? What blocks would you use?
3. Work with a partner to create 2 different shapes using your Cutebot. Decide which two shapes you will make. What blocks will you need?
4. Use tape to track the path your Cutebot runs on. Was your program successful?

Wrap Up: 3-2 1

- What are 3 things you learned?
- What are 2 things you found interesting?
- What is 1 thing you have a question about?

Day 3: Acceleration and speed test (race) (50 minutes)

Objective: Program the Micro:Bit acceleration and use Loops for increased distance.

Warm Up: BellWork

1. Display two different programming outcomes (A & B) (i.e., move the robot in an L shape)
2. Partner will provide verbal instructions for their partner to follow in order to code on the computer; vice versa.

Activity: Constructing Knowledge

5.

Wrap Up: 3-2 1

- What are 3 things you learned?
- What are 2 things you found interesting?
- What is 1 thing you have a question about?