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VEX CODE VR
Activities



Trash Collection



Playground: Coral Reef Cleanup

Challenges:

Level 1: Building on the Coral Reef Cleanup Level 1 Example Project in VEXcode VR, create an algorithm to navigate the robot to collect as much trash as possible **in 30 seconds**.

- Continue to sequence behaviors to drive the VR Robot to collect the trash.
- Use the timer and a conditional loop to control the robot to collect trash for 30 seconds.

Level 2: Building on the Coral Reef Cleanup Level 2 Example Project in VEXcode VR, create an algorithm to navigate the robot to collect **approximately 15 pieces of trash** as fast as possible.

- Continue to sequence behaviors.
- Use the Front Distance Sensor to navigate the robot.
- Create a variable to store the approximate number of pieces of trash collected.
- Use the variable and a conditional loop to control the robot to collect approximately 15 pieces of trash.
- Print the timer value to the Print Console to report the number of seconds the robot took to complete the task.

Level 3: Building on the Coral Reef Cleanup Level 3 Example Project in VEXcode VR, create an algorithm to navigate the robot to collect **approximately 20 pieces of trash** as fast as possible.

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- Continue to sequence behaviors.
- Use the Front Distance Sensor and the Down Eye sensor to navigate the robot.
- Create a variable and an algorithm to track the approximate number of pieces of trash collected
- Use the variable and a conditional loop to control the robot to collect approximately 20 pieces of trash.
- Print the timer value to the Print Console to report the number of seconds the robot took to complete the task.

Helpful Hint:

- Use the Front Distance Sensor to detect pieces of trash as objects.
- Use the Down Eye sensor to detect the blue border to avoid falling off the side of the collecting area.
- In the level 2 project, the robot collects one piece of trash after detecting it in each iteration.
- In the level 3 project, use the Front Distance Sensor to determine if a piece of trash is collected.
    - The Front Distance Sensor can report the distance between the sensor and the nearest object (the detected trash).
    - When the VR robot moves toward the trash, this distance will continuously decrease until the trash is collected.
    - Create a variable to trace the change in distance between the sensor and the nearest object. Monitor the change to determine if a piece of trash is collected.
- Try using conditional loop blocks to create your algorithm.
    - Use the [while] block to control the robot to work for a certain number of seconds.



    - Matching Python command:

```
while condition:
    wait(5, MSEC)
```

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- Use the [repeat until] block to control the robot to collect a certain number of pieces of trash.



  - Matching Python command:

```
while not condition:
    wait(5, MSEC)
```


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