

Guided Programming:

Lesson 4

Name: _____

Date: _____

Vocabulary

Looping - Repeating a set of code blocks

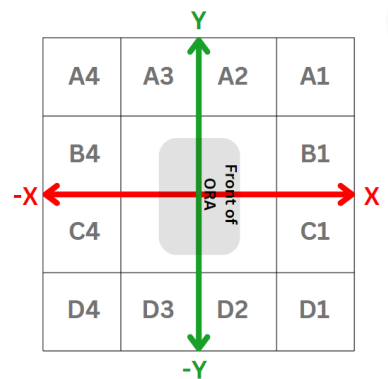
Control Structures - Sequential, conditional, and looping are types of control structures that may describe the flow of a program.

Cartesian Plane - A coordinate system for representing positions and movements on a flat surface (X, Y) or 3D space (X, Y, Z)

Engage

Look at the block code displayed by your instructor. Describe the direction the ORA will move when running each of the move blocks.

To identify Left/Right, traveling from 1-4 will move Left. For Forward and Back, traveling from A to D would be traveling Back. Last, moving Up/Down would not move across the mat. Up/Down is movement such as Low to High.



Start at A1, pick a descriptor for which direction the ORA moves to reach each position. Write the letter on the line.

- A. Left/Right
- B. Forward/Back
- C. Up/Down

A1 Start

1. A4 LOW - ____A____
2. A1 LOW - ____A____
3. D1 LOW - ____B____
4. D4 LOW - ____A____
5. D1 LOW - ____A____
6. D1 HIGH - ____C____
7. D1 LOW - ____C____

```
Program start
move to location A1 position LOW
wait 2 seconds
move to location A4 position LOW
wait 2 seconds
move to location A1 position LOW
wait 2 seconds
move to location D1 position LOW
wait 2 seconds
move to location D4 position LOW
wait 2 seconds
move to location D1 position LOW
wait 2 seconds
move to location D1 position HIGH
wait 2 seconds
move to location D1 position LOW
```

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Explore

A.

```

Program start
move to initial position
wait 2 seconds
move to location A1 position LOW
repeat forever
do
  move to location A4 position LOW
  move to location D4 position LOW
  move to location A4 position LOW
  move to location A1 position LOW
  
```

B.

```

Program start
move to initial position
wait 2 seconds
move to location A1 position LOW
repeat forever
do
  move to location D1 position LOW
  move to location D4 position LOW
  move to location D1 position LOW
  move to location A1 position LOW
  
```

C.

```

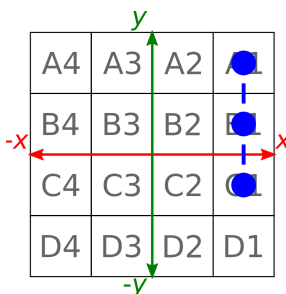
Program start
move to initial position
wait 2 seconds
move to location A1 position LOW
repeat forever
do
  move to location B1 position LOW
  move to location C1 position LOW
  move to location B1 position LOW
  move to location A1 position LOW
  
```

D.

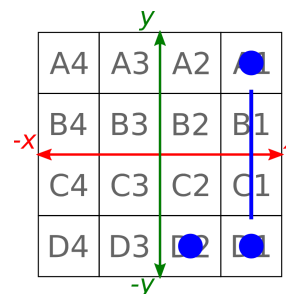
```

Program start
move to initial position
wait 2 seconds
move to location A1 position LOW
repeat forever
do
  move to location D1 position LOW
  move to location D2 position LOW
  move to location D1 position LOW
  move to location A1 position LOW
  
```

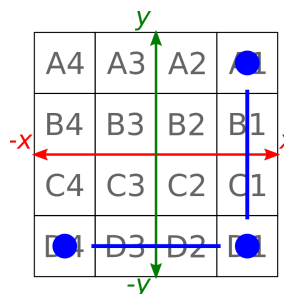
Identify which line drawing matches the code movement of the ORA along the X/Y plane



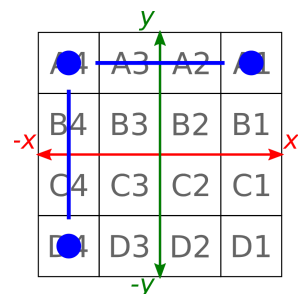
Matches Code: C



Matches Code: D



Matches Code: B



Matches Code: A

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Explain

Pseudocode	Axis Direction
Answers will vary based on sequence. See lesson plan for example code block.	Answers will vary based on sequence.

When your code was run, did it meet all requirements? If not, what do you need to change/add?

Answers will vary based on sequence.

Elaborate

Pseudocode	Axis Direction
Answers will vary based on sequence. See lesson plan for example code block.	Answers will vary based on sequence.

When your code was run, did it meet all requirements? If not, what do you need to change/add?

Answers will vary based on sequence.

Evaluate

Please answer the following prompts.

Remember to include your **name** and **date** on this paper!

1. When making a loop, how does your final block of the loop relate to your first block?

The final block needs to be planned so that the loop makes sense when returning to the first movement because the loop will restart and begin again at the first block of the loop.

2. Select the axis (X, Y, or Z) for the motion descriptions below

Z Moving vertically Low and High

X Moving along letter A only

Y Moving across the letters but staying within just number 1 squares