

Inspection and Logic:

Name: _____

Lesson 9

Date: _____

Variable - a variable is a symbol that represents a mathematical object, such as a number.

Conditionals - commands for handling decisions based on different statement conditions.

If Statement - a type of conditional statement that performs a task if a condition is met.

Quality Control - a set of standards that randomly selects samples from a batch to test.

Probability - how often an event is likely to occur.

Engage

You will play several rounds of Super ORA Sweep (an exciting new board game from Ozobot!). Note that your instructor is running the same code each time. What is the ORA doing each time that the code is run? How can you explain what is going on?

Student answers will vary but may include the instructor discreetly changing the code between rounds or other wild possibilities!

Explore

Your instructor will give you a 6-sided die. To find the probability of any number coming up in a roll, we take the potential outcome (a specific number showing) and divide that by the number of sides (6). So with each roll, there is a 1/6th chance any number will come up.

Roll your group's die 20 times and tally the number of times each number is rolled.

1	2	3	4	5	6
Student answers will vary	Student answers will vary	Student answers will vary	Student answers will vary	Student answers will vary	Student answers will vary

Did each number show up 1/6th of the time? If not, what does that say about your die?

Student answers will vary, but may include that the die is not fair. But this is just the result of randomness in a very small sample size (this would be a great primer for a statistics discussion).

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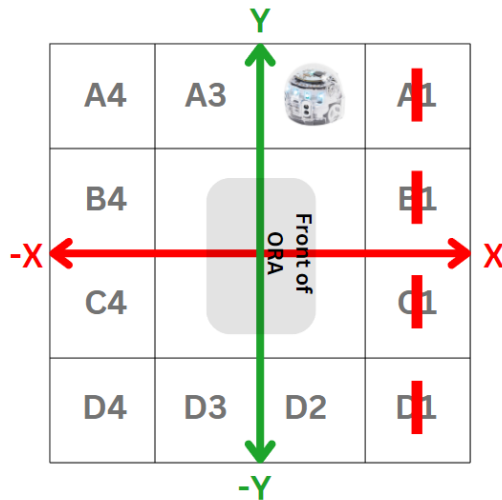
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Elaborate

In this challenge, students will use ORA and Evo to perform quality control of product samples on the quadrant map.



Task Requirements:

1. ORA must start in the Initial Position.
2. ORA must use a variable, random integer, and an if statement to randomly pick up a wooden cylinder (sample).
3. ORA must pick up the wooden cylinder and use the Evo to 'scan' the barcode. Barcodes are located on the end of the samples facing in the +Y direction. To activate the scan function, set Evo's top light color to blue.
4. After the barcode is scanned, turn the sample and pass it over Evo so that the length can be scanned.
5. When finished scanning, ORA will return the sample to its original location.
6. ORA must finish in the Initial Position.

Pseudocode	Code Blocks
	Example of Student Work Here

After testing, was the code successful? If not, what changes can you make to accomplish the task?

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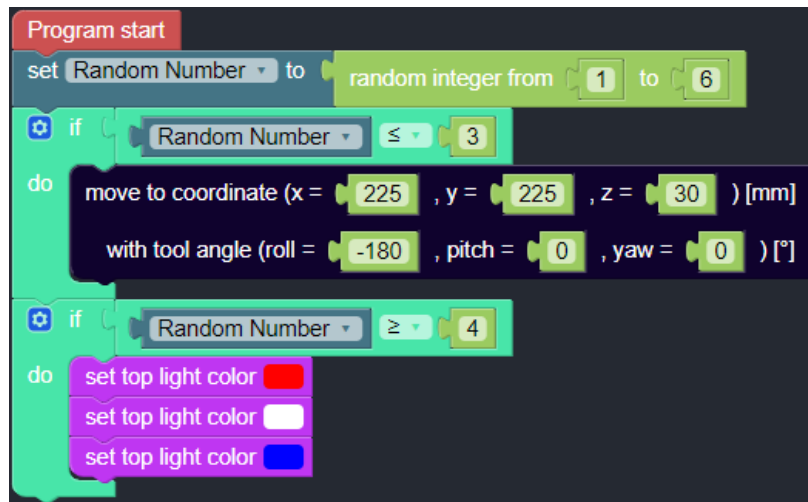
Date: _____

Evaluate

Please answer the following prompts.

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

1. A fellow student creates this code in ORA Editor. Use your knowledge of math operators and if statements to pseudocode what will occur if a 5 is generated in the Random Number variable.



Pseudocode

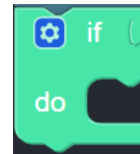
If a 5 is generated, then the second if statement would be activated because five is greater than or equal to four.

This would cause the Evo to light up red, white, then blue.

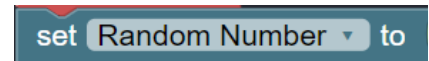
2. Match the code block with its purpose

- D** Compares a random number to a set value
- A** Does a particular task if a condition is met
- B** Assigns a value to a variable
- C** Creates a random number between two values

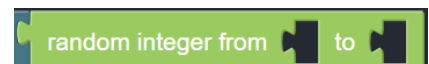
A.



B.



C.



D.

