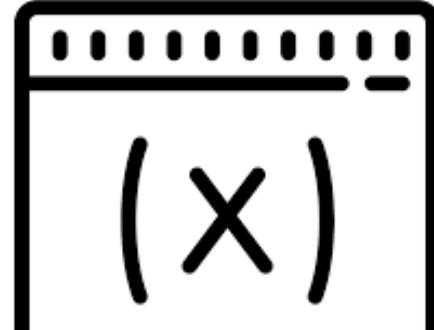
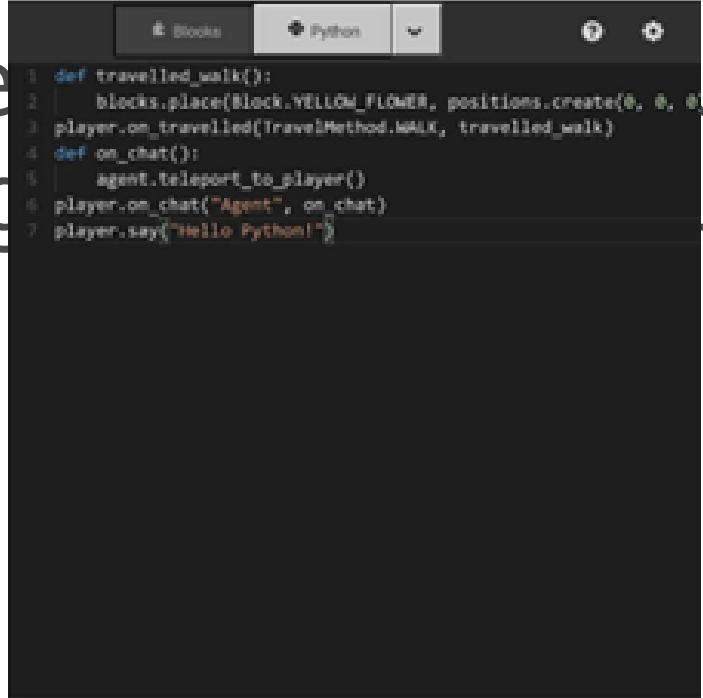


# WHAT WE WILL LEARN TODAY?

- I will learn and apply the coding concept of variables.
- I will effectively use positional programming in Minecraft.
- I will create, test, and debug my Python code.
- I will embrace and demonstrate a coding mindset.

# IMPORTANT VOCABULARY

There are some important things for us to understand before we begin playing- let's review some concepts first!

Variables	Python	Syntax
used as placeholders for pieces of text (strings), numerical values, commands, and even other variables 	a text-based computer program language 	a set of rules that are used to create the programming language structure  <b>player.say("hi")</b>

# GOAL FOR THE DAY

Welcome!



Today, you need to help a software development company called CodingMine.

They need assistance in expanding their office space. They are developing software to make the construction process easier. The software will automatically place blocks in desired locations. You will use commands to place blocks in the correct location within 3D spaces.

# CODING CONCEPTS

Variables	World Position
<p>Think of a variable as a box that contains something (a number or text). For example, if you wanted to make a box (variable) for countries, you could name your box/variable <b>country</b>. You can pass the box called country to another student who places a piece of paper with the name of a country (<b>America</b>) inside of the box. The box is then moved to another student who places the country of (<b>France</b>) inside the box and removes the previous one (<b>America</b>). The box/variable now has the value of (<b>France</b>). Any time you want to see the current country, you can open the box/variable country and look at it.</p>	<p>There are two kinds of coordinates in Minecraft: relative position and world position. In this lesson, you will use world position. Every block in the Minecraft world has its own unique coordinates called <b>world position</b> defined by three numbers <code>world(0, 0, 0)</code>. Coordinates are not written with quotes as they represent a numerical value.</p> <p><code>world(0, 0, 0)</code></p>



# SYNTAX FOR PYTHON

Equals =	Change +=	Change -=
Equals is used with variables to declare its value	Increases the value by the defined amount	Decreases the value by the defined amount

# WELCOME

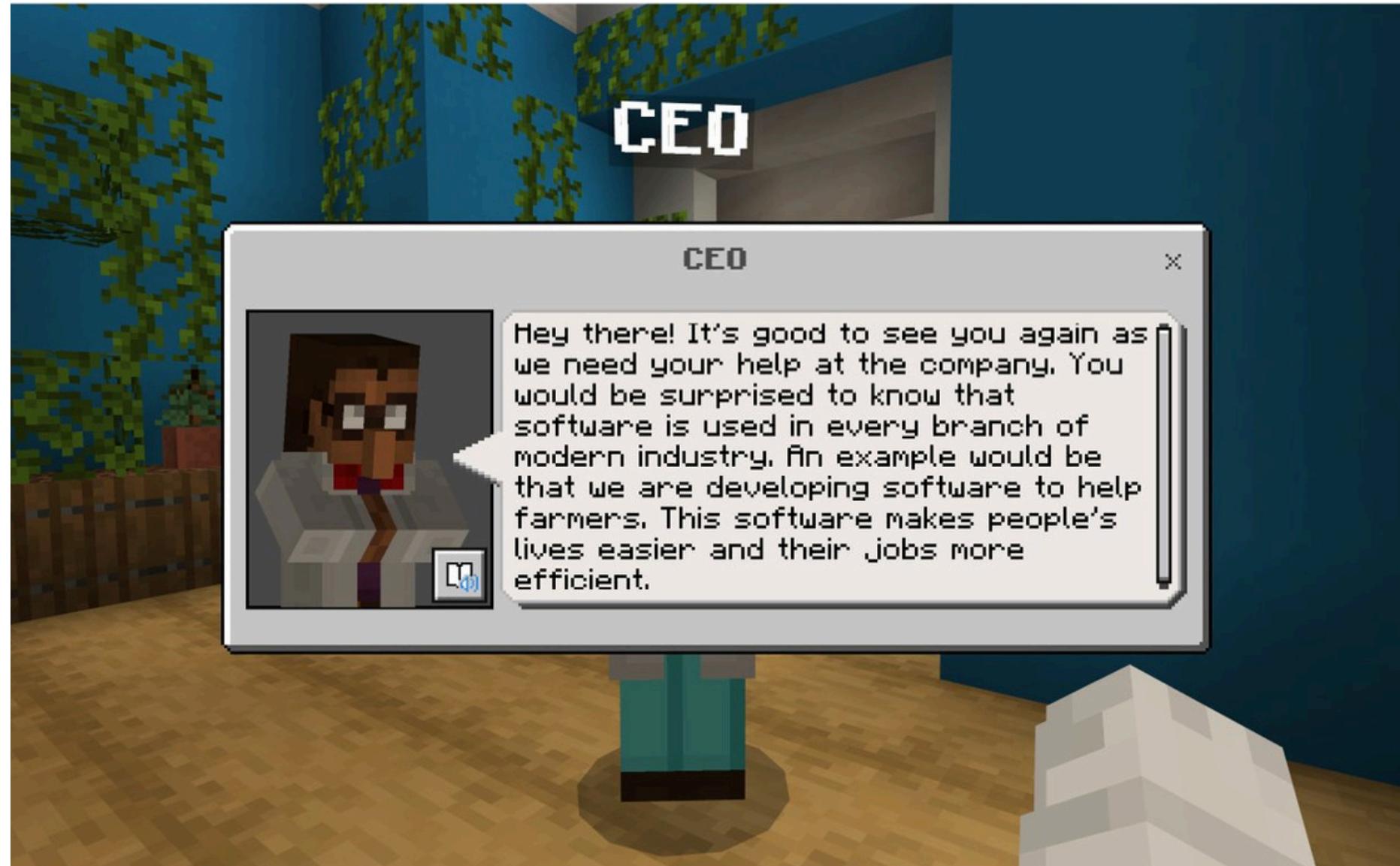


This is your spawn point,  
the location where you  
begin game play.

# TALK TO THE CEO



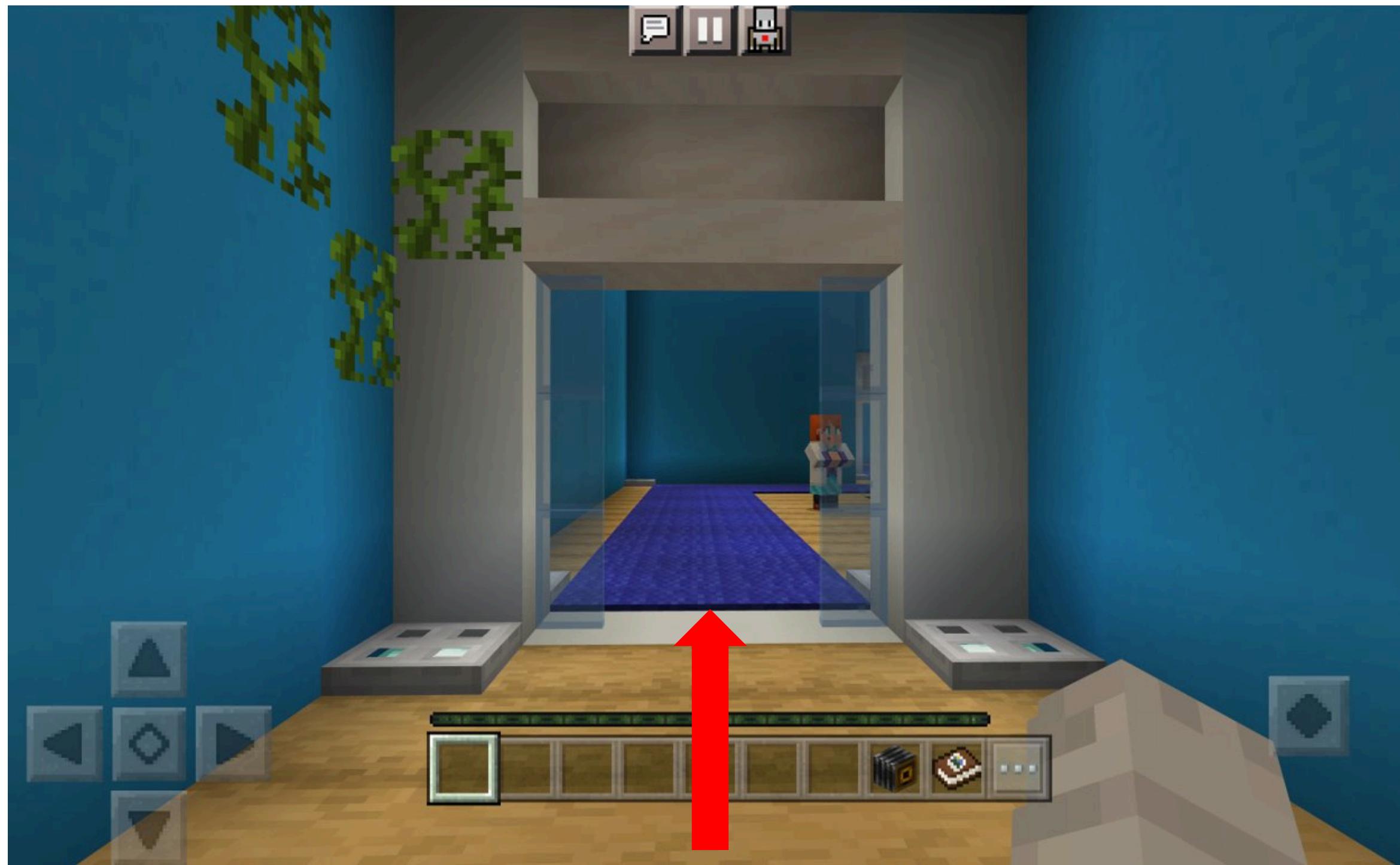
# TALK TO THE CEO



This is the pop-up screen we will see on our screen.

After you have read the message, click on the “X” in the top right corner to continue game play.

# WALK INTO THE ROOM TO BEGIN



# ACTIVITY #1



Our first activity requires us to sort the fruit from the farmers. You will need to work out the correct sequence of buttons to press on the sorting machine. Create variables for the different fruits and finish the code so it runs in the correct sequence shown.

# TALK TO THE PROGRAMMER



This is the pop-up screen we will see on our screen.

After you have read the message, click on the "X" in the top right corner to continue game play.

# FRUIT SORTING MACHINE

We need to code the fruit sequence and then press the buttons in the correct order.



# ACTIVITY #1

We are going to complete Step 1 first...

You will see the green text of "Step 1" in two locations of code (Line 3 and Line 4).

We need to create two new variables.

b = melon | c = apple

Then we need to insert the # fruit variables.

The screenshot shows the Minecraft Education Edition Code Builder interface. The title bar reads "Code Builder" and "Activity 1 - Sorting things out.". The main area contains the following text:

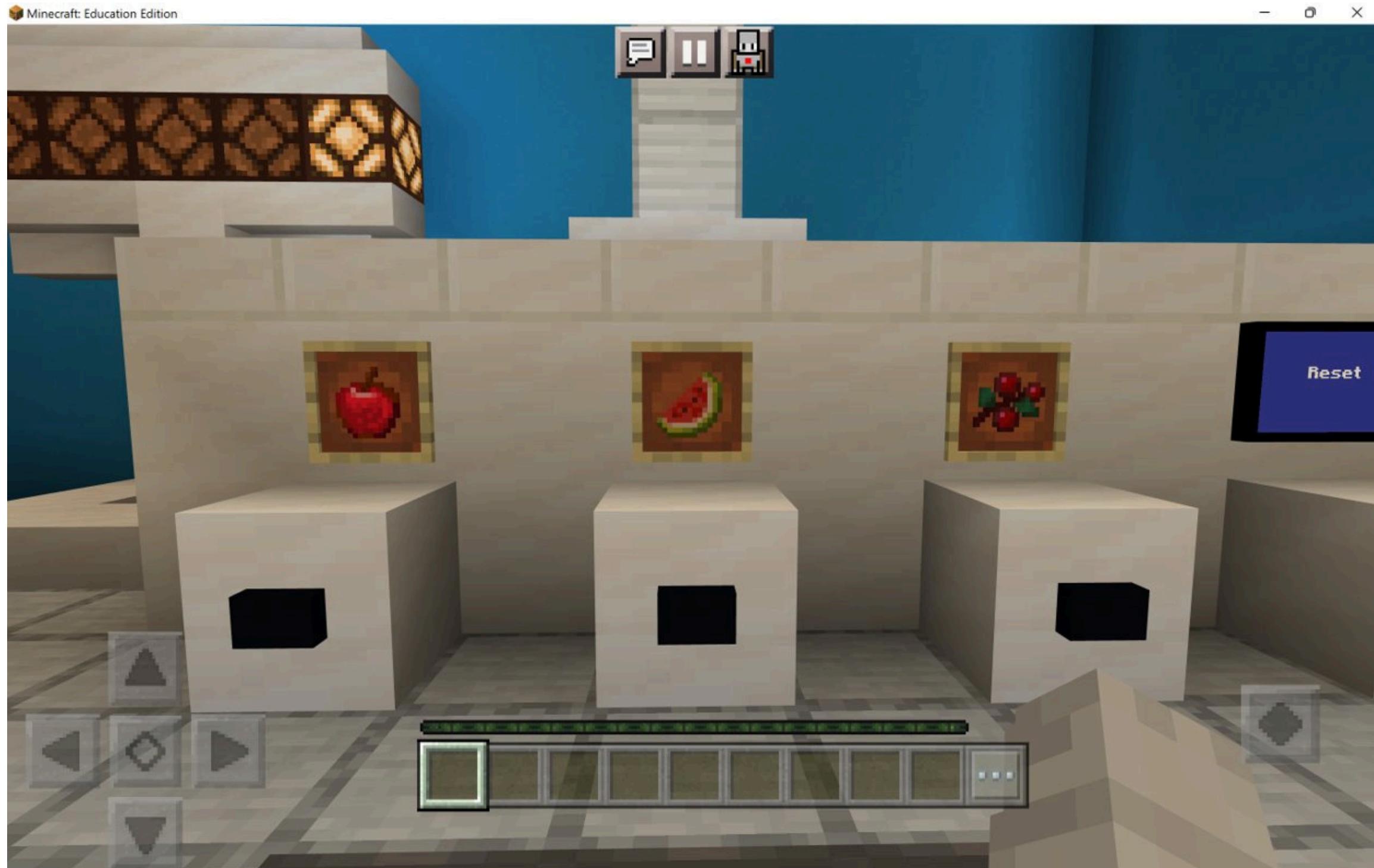
Create **two** new variables called **b** and **c**. The value of **b** should be **melon** and the value of **c** should be **apple**.

Below this, there is a code editor with a "PLAYER" tab selected. The code is as follows:

```
1 # Replace the lines below with your code #
2 a = "berries"
3 # variable b | Step 1
4 # variable c | Step 1
5 d = a
6 # fruit variable | Step 2
7 player.say(fruit)
8 # fruit variable | Step 2
9 player.say(fruit)
10 # fruit variable | Step 2
11 player.say(fruit)
12 fruit = d
13 player.say(fruit)
```

The "VARIABLES" tab is also visible. At the bottom right of the code editor are standard control buttons for running and stopping the code.

# TEST YOUR CODE



If your code runs incorrectly, try again. Press the “Reset” button located on the right of the fruit sorting machine.

# SUCCESS!



# MOVE TO THE NEXT AREA



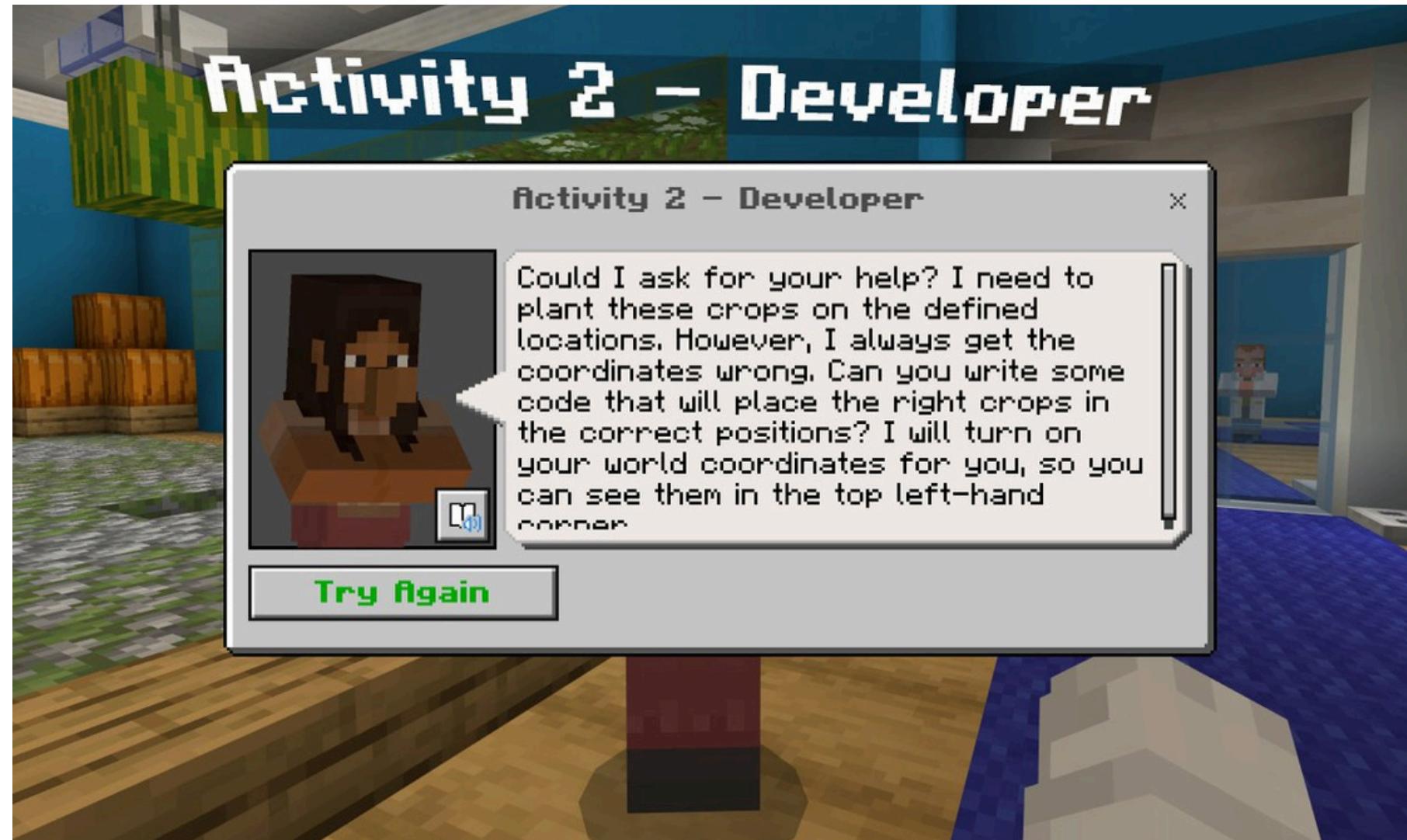
Continue on to the next area and begin Activity #2.

# ACTIVITY #2



Move towards the developer to find out about your next activity.

# TALK TO THE DEVELOPER



This is the pop-up screen we will see on our screen.

After you have read the message, click on the “X” in the top right corner to continue game play.

# WORLD POSITION COORDINATES



# ACTIVITY #2

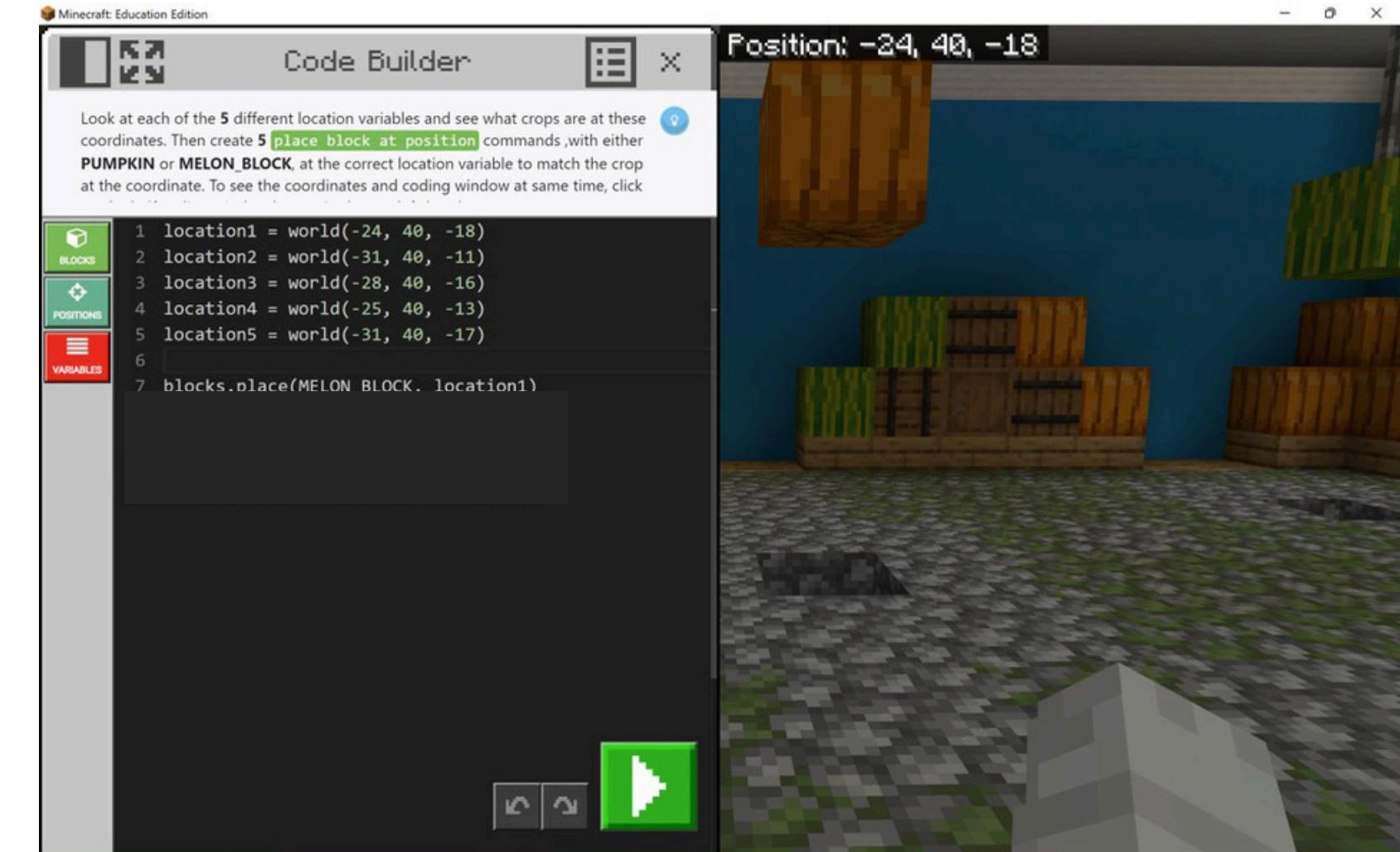


We are going to need to match the world position of each crop to have it placed in the desired location.

# CREATE YOUR CODE



Walk inside the exact location of the hole, where the crop will be placed. While you are standing there, you will be provided with the world position for the crop. Look up to see what type of crop is going to be placed there (pumpkin OR melon).



Open Code Builder. Use the half-coding window so you can see the world position and the coding window at the same time. (Use the half-coding window button at the top-left hand corner). Use the predefined locations at the top of the coding window.

# SUCCESS!

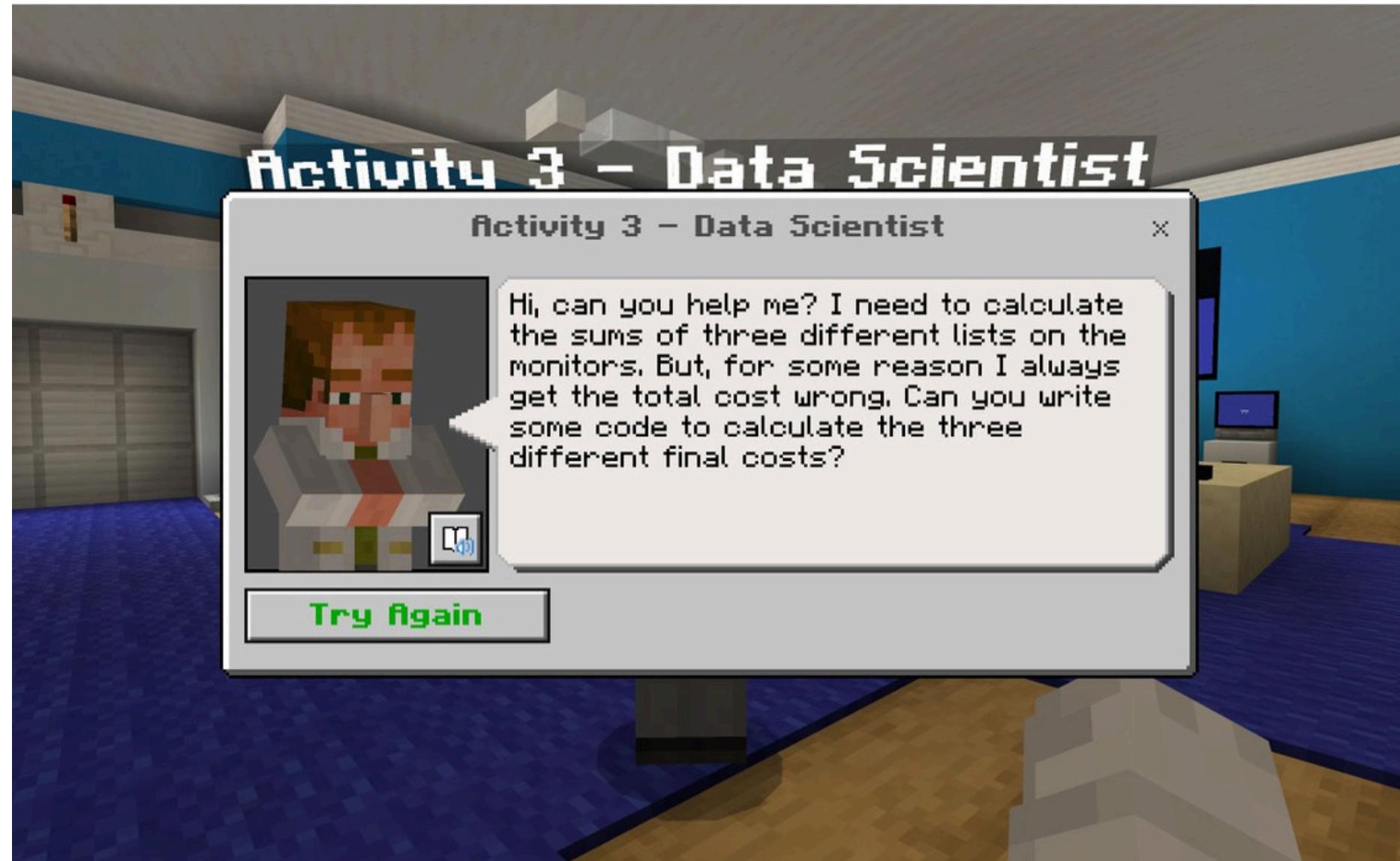


# ACTIVITY #3



Walk over to the next area and talk to the Data Scientist!

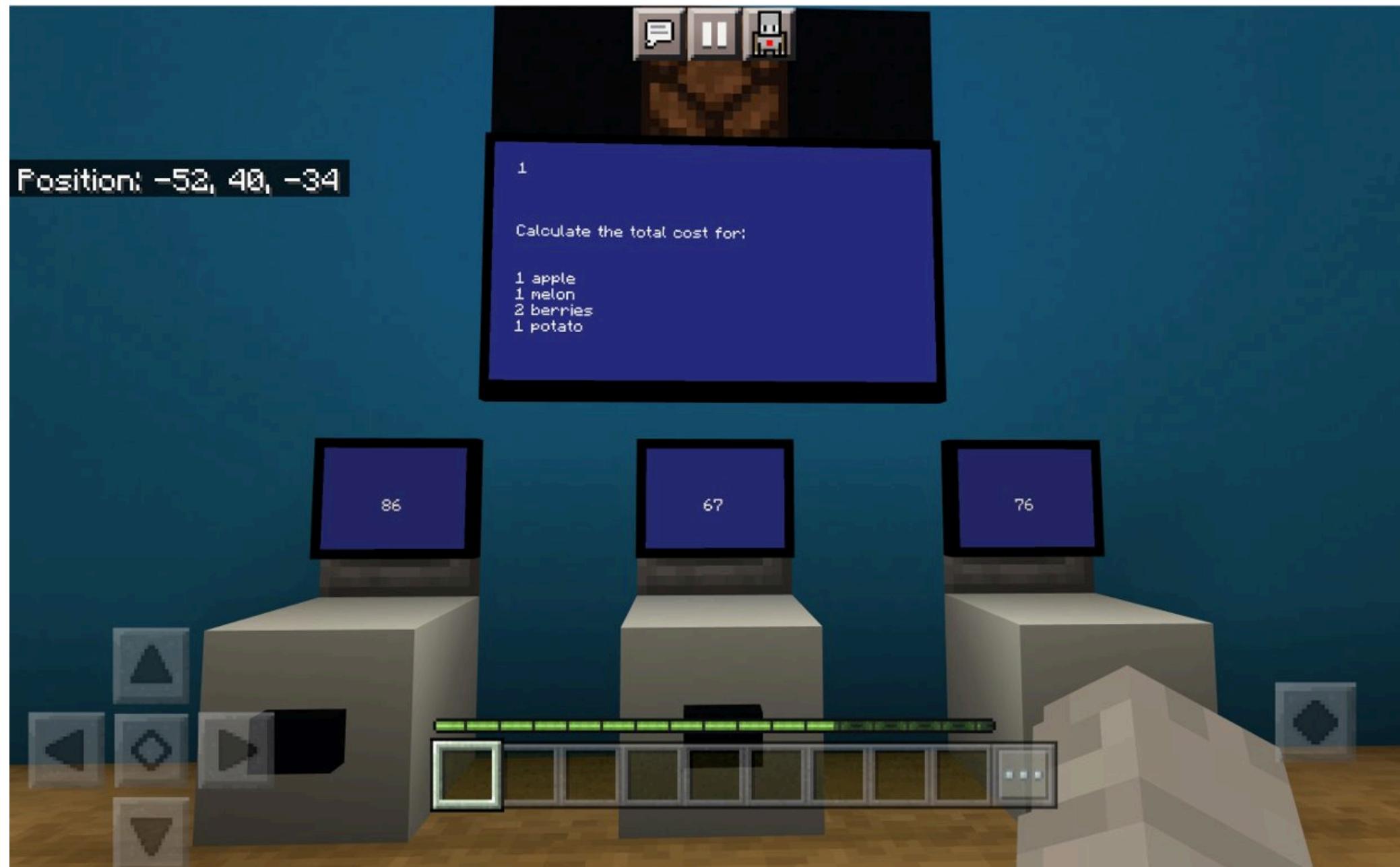
# TALK TO THE DATA SCIENTIST



This is the pop-up screen we will see on our screen.

After you have read the message, click on the “X” in the top right corner to continue game play.

# ACTIVITY #3



In this activity, you will need to write 3 pieces of code that will calculate the cost of the fruit when the farmers are selling them. You will create the code in 3 parts- each part will be labeled by step: Step 1 | Step 2 | Step 3

# ACTIVITY #3



After each calculation, you will need to press the button of the correct answer shown on the monitor. If you are correct, you will see the “Correct” prompt and the redstone will light up above the large monitor.

# SUCCESS!



# Recap

What you've done today:

- Learned and applied the coding concept of variables.
- Effectively used positional programming in Minecraft.
- Created, tested, and debugged my Python code.
- Embraced a coding mindset.

