WHAT WE WILL LEARN TODAY?

- I will learn and apply the coding concept of lists.
- I will create, test, and debug my Python code.
- I will embrace and demonstrate a coding mindset.

MINECRAFT
EDUCATION EDITION

IMPORTANT VOCABULARY

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

Lists	Python	Syntax
ordered collection of strings, numerical values, or variables _____ _____ _____	a text-based computer programming language	a set of rules that are used to create the programming language structure `player.say("hi")`

GOAL FOR THE DAY

Welcome!

Today, you will continue to help CodingMine with the development of new software to be used by an animal hospital.

Veterinarians need help to easily identify and categorize animals, as well as their different treatments and dietary requirements.

You will use the coding concept of lists to help the development of this project.

CODING CONCEPTS

List	Zero-Based Numbering	Methods
A **list** is an ordered collection of strings, numerical values, or variables. In Minecraft Python, a list can also be a collection of Minecraft items or mobs. A list's contents can be edited by adding, removing, or ordering it in a different way. Unlike variables, you can place more than one value in a list. A list can be named anything, but it must have **one letter** and **no spaces**. Rather than using spaces, it is common practice to use **underscores**.	In computer science, and in Python, most counting begins from **0** and continues on with 1, 2, 3. You will use this concept when coding lists.	**Methods** are special commands that affect data in many ways. You can use methods to control the contents and the arrangement of content in lists**.**

SYNTAX FOR PYTHON

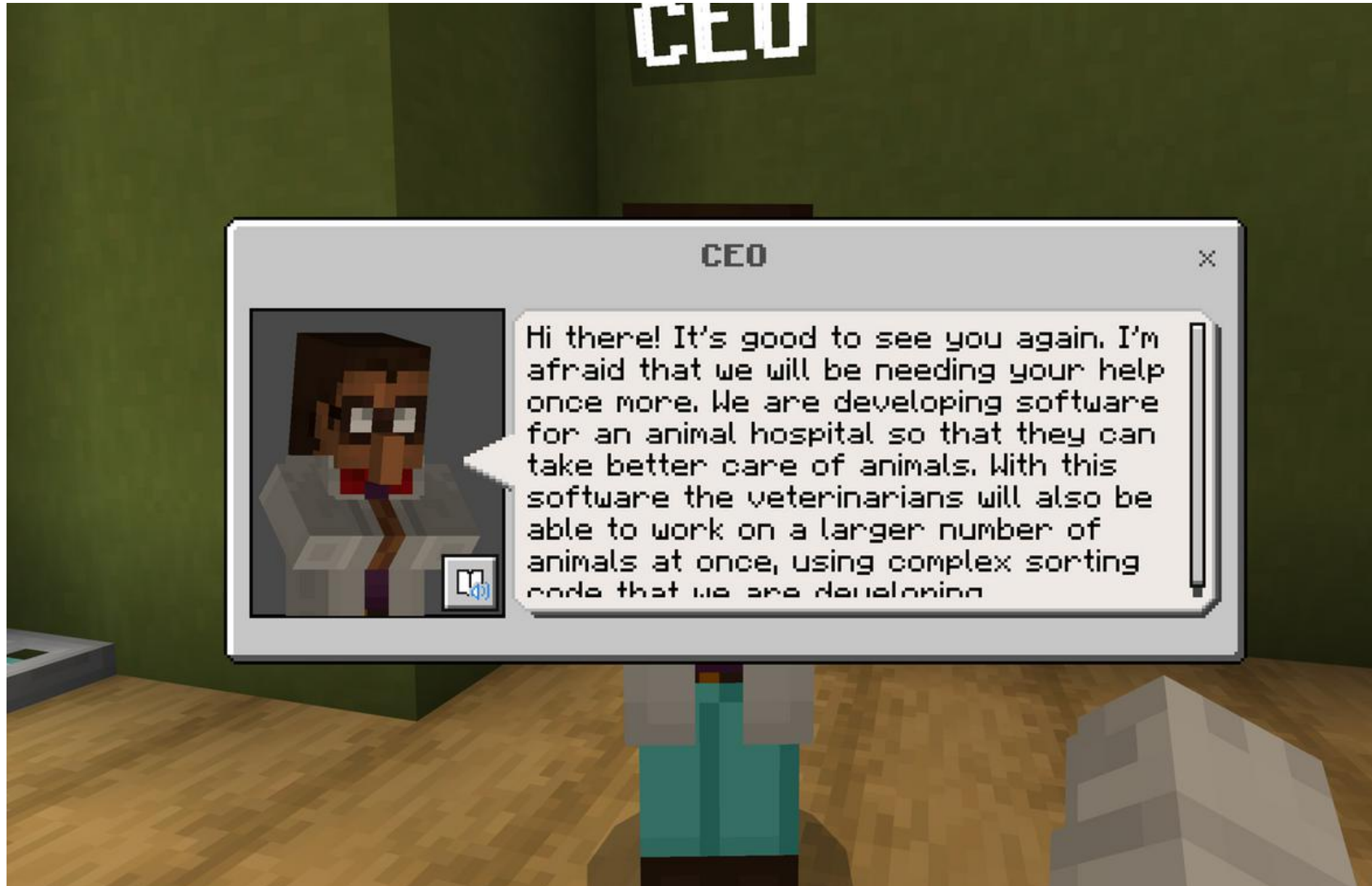| Square Brackets [ ]	Underscore _

Square brackets are used when creating lists. When you want to define a list's contents, they need to be placed within a pair of square brackets and separated by commas.
 	
`Name_list = [John, Mary, Chad, Isabella]`
	A list or variable name cannot contain any spaces. If a space is needed, the most thing to do is use an underscore instead.
	
	`my_list = [0, 1, 2, 3, 4]`
	`important_variable = 1`

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.
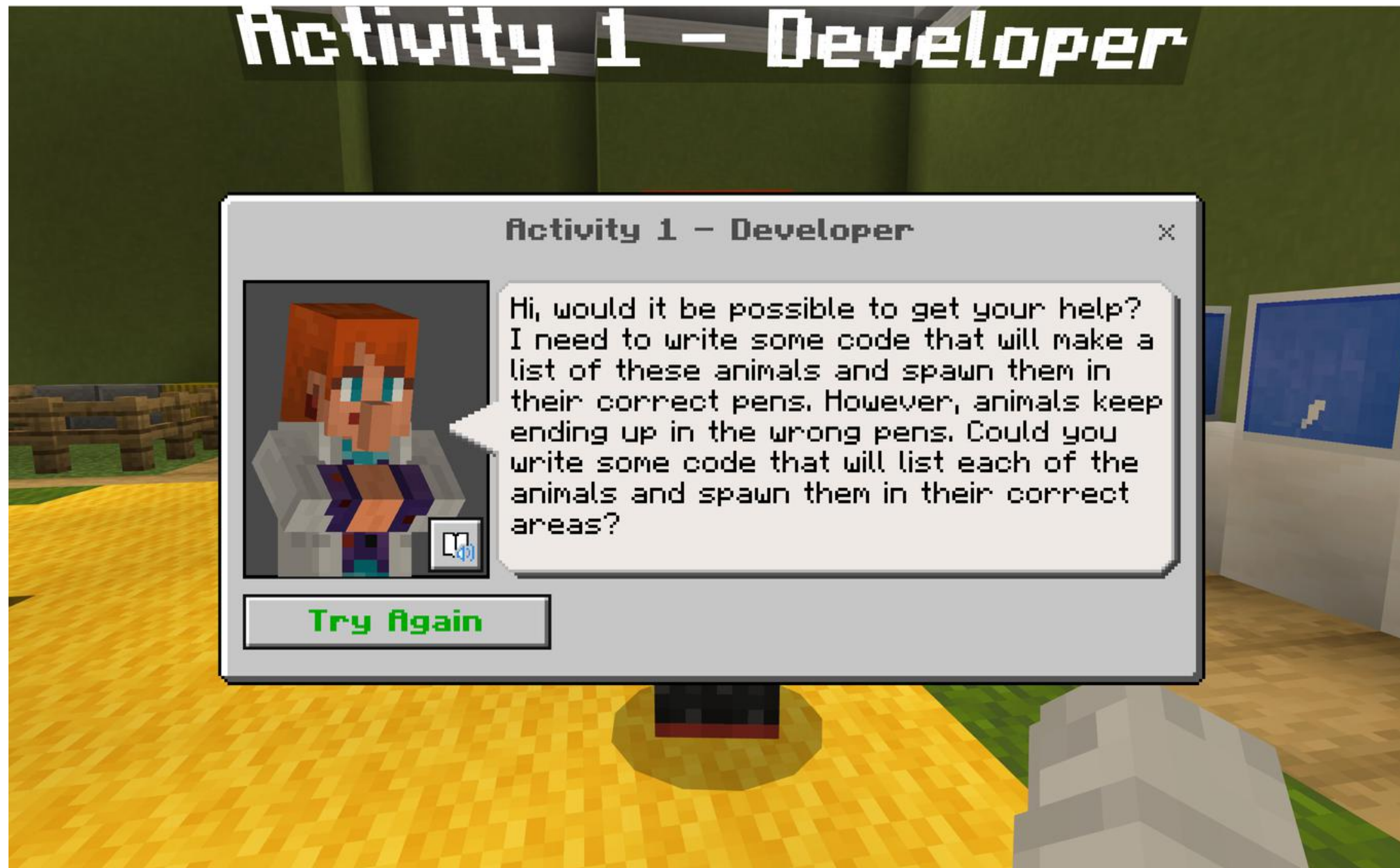
WALK INTO THE ROOM TO BEGIN

ACTIVITY #1

Our first activity requires us to create a list of the animals and then spawn the animals in their correct pens, at predefined locations.

Position: 1, 40, -19

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.

MAKE A LIST

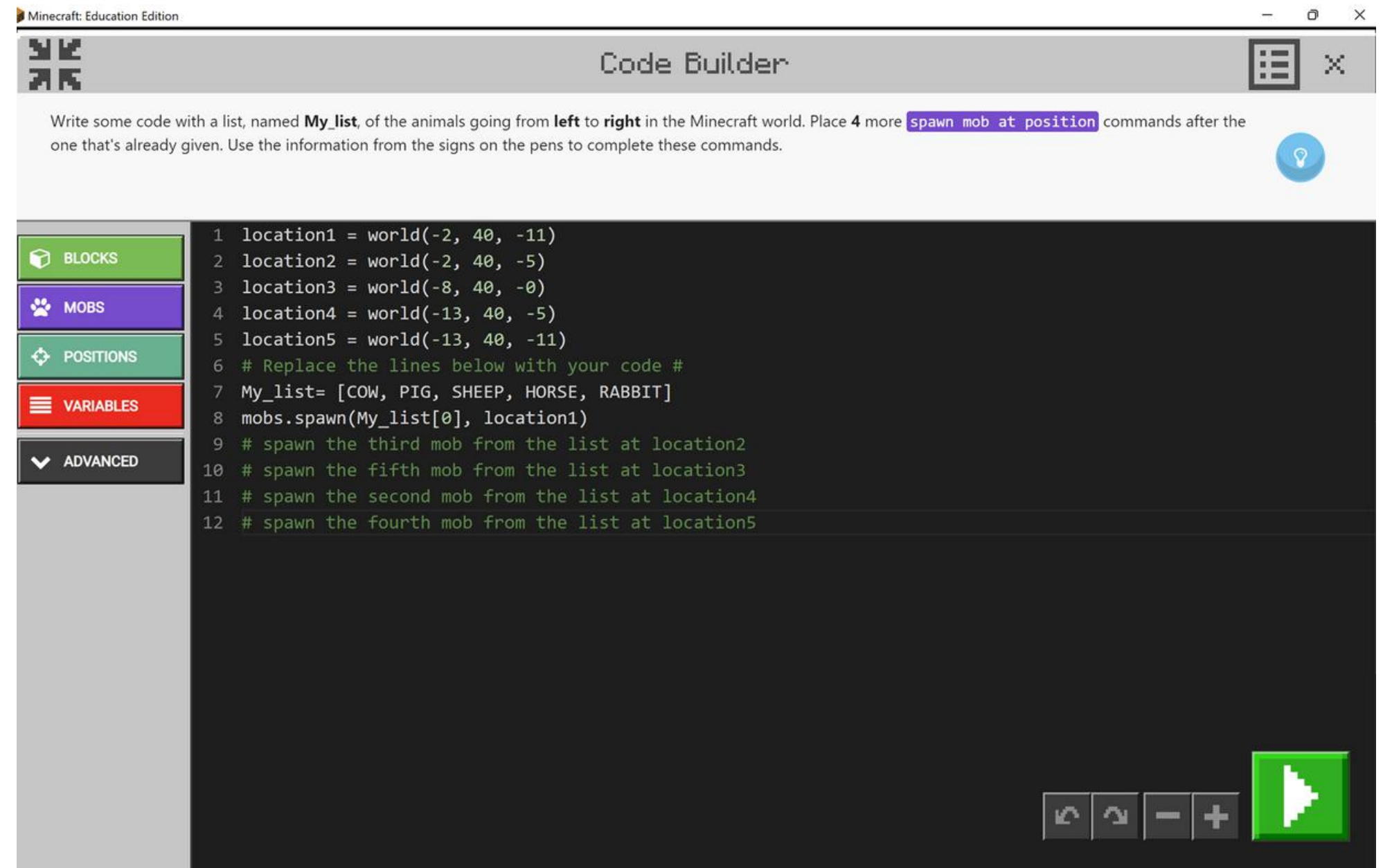We need write down the names of the animals in this exact order to create our list.

ACTIVITY #1

We are going to complete this into 2 parts.
First, we need to write some code to create My_List= [ ]
Write the names of the animals in order (from the list we just created of the Minecraft animals). Remember to place the animals' name in order, separated by commas.
Then, we will need finish the code by using mobs.spawn followed by the animal and its corresponding list number, at the predefined location.

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Code Builder

Write some code with a list, named **My_list**, of the animals going from **left** to **right** in the Minecraft world. Place **4** more `spawn mob at position` commands after the one that's already given. Use the information from the signs on the pens to complete these commands.

BLOCKS

MOBS

POSITIONS

VARIABLES

ADVANCED

```
1  location1 = world(-2, 40, -11)
2  location2 = world(-2, 40, -5)
3  location3 = world(-8, 40, -0)
4  location4 = world(-13, 40, -5)
5  location5 = world(-13, 40, -11)
6  # Replace the lines below with your code #
7  My_list= [COW, PIG, SHEEP, HORSE, RABBIT]
8  mobs.spawn(My_list[0], location1)
9  # spawn the third mob from the list at location2
10 # spawn the fifth mob from the list at location3
11 # spawn the second mob from the list at location4
12 # spawn the fourth mob from the list at location5
```

TEST YOUR CODE

If your code runs incorrectly, try again. Return to the NPC and click on the "Try Again" button.
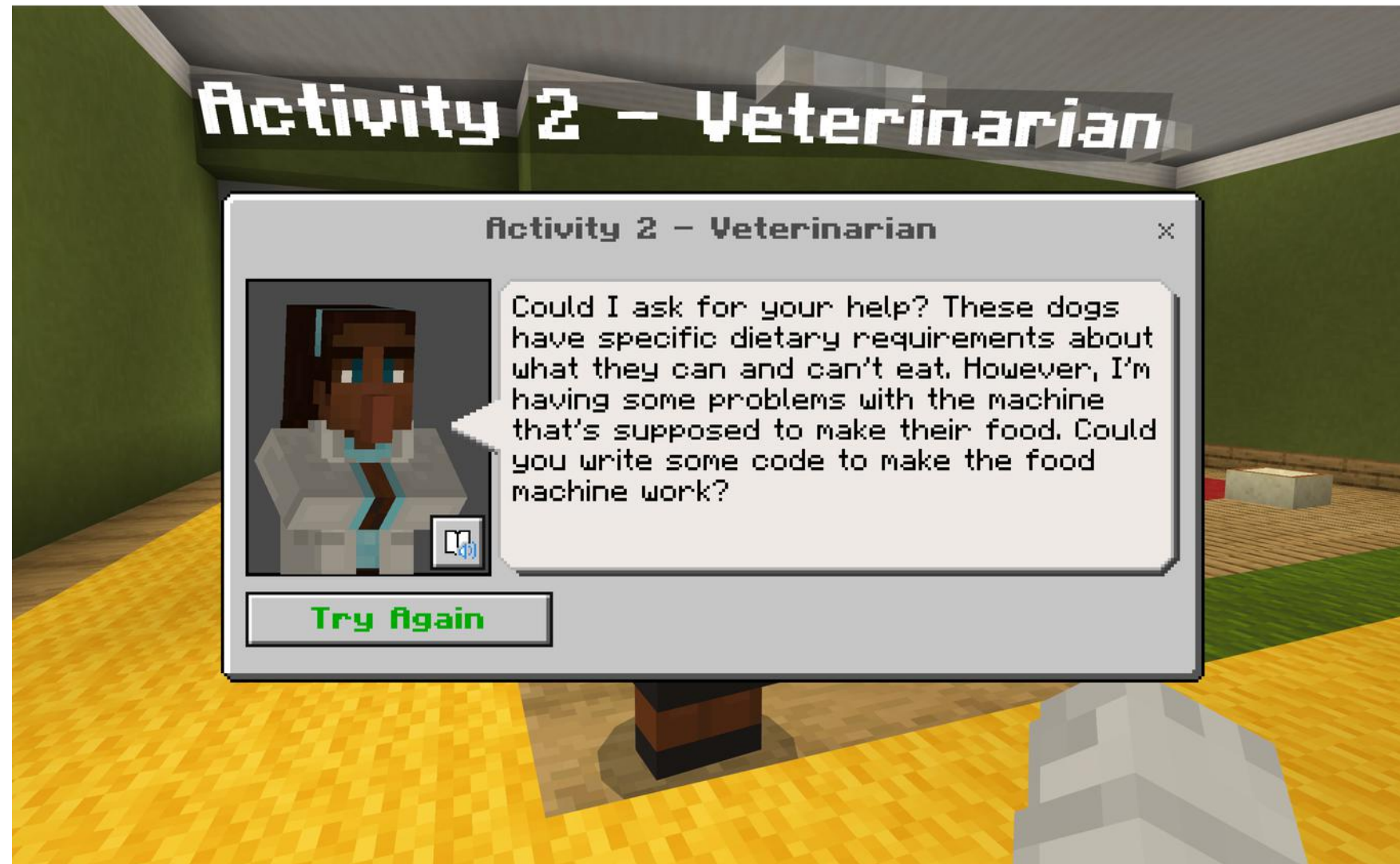
SUCCESS!

MOVE TO THE NEXT AREA

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

ACTIVITY #2

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

TALK TO THE VETERINARIAN

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 #2

We are going to need to write some code to control the food machine for the dogs. We will need to make food with the right dietary requirements for each dog.

ACTIVITY #2

Dog 1	Dog 2	Dog 3
Will need everything already in the list	Will need additional vitamins	Will need the beef removed from the list

CREATE YOUR CODE

You will need to use two methods to manipulate the lists of food:
append
pop
Append is to "add" in this code.
Pop is to "remove" in this code.

Work on the Coding Task with each step on the screen. Complete Step 1 for the first dog; then complete Step 2 for the second dog; and then complete Step 3 for the third dog.

However, it is important that you run the code after each step. The code will run and provide you with the food from the machine to provide to the dog.

Code Builder

Activity 2 - Dietary requirement.

Report Abuse

Microsoft

Give the **first** dog everything that's already in the predefined list by changing the values of the first **4** `place block at position` commands. So that they each place, in order, one of the items in the list. Then give the food from the chest to dog number one.

Next

BLOCKS
POSITIONS
VARIABLES
ADVANCED

```
1   Bone = world(-21, 45, -31)
2   Beef = world(-21, 45, -29)
3   Chicken = world(-21, 45, -27)
4   Biscuit = world(-21, 45, -25)
5   Vitamins = world(-21, 45, -23)
6   # Replace the lines below with your code #
7   Dog_Food = [Bone, Beef, Chicken, Biscuit]
8   # Add the variable Vitamins to the list using the append method | Step 2
9   # Remove the variable Beef using the pop method                 | Step 3
10  blocks.place(REDSTONE_BLOCK, Dog_Food[0])
11  # Change the numerical value of the list below        | Step 1
12  blocks.place(REDSTONE_BLOCK, Dog_Food[0])
13  # Change the numerical value of the list below        | Step 1
14  blocks.place(REDSTONE_BLOCK, Dog_Food[0])
15  # Change the numerical value of the list below        | Step 1
16  blocks.place(REDSTONE_BLOCK, Dog_Food[0])
17  # Change the numerical value of the list below        | Step 2
18  blocks.place(REDSTONE_BLOCK, Dog_Food[0])
```

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ACTIVITY #2

After you run the code, you will collect the food from the chest. Place it into your hotbar.
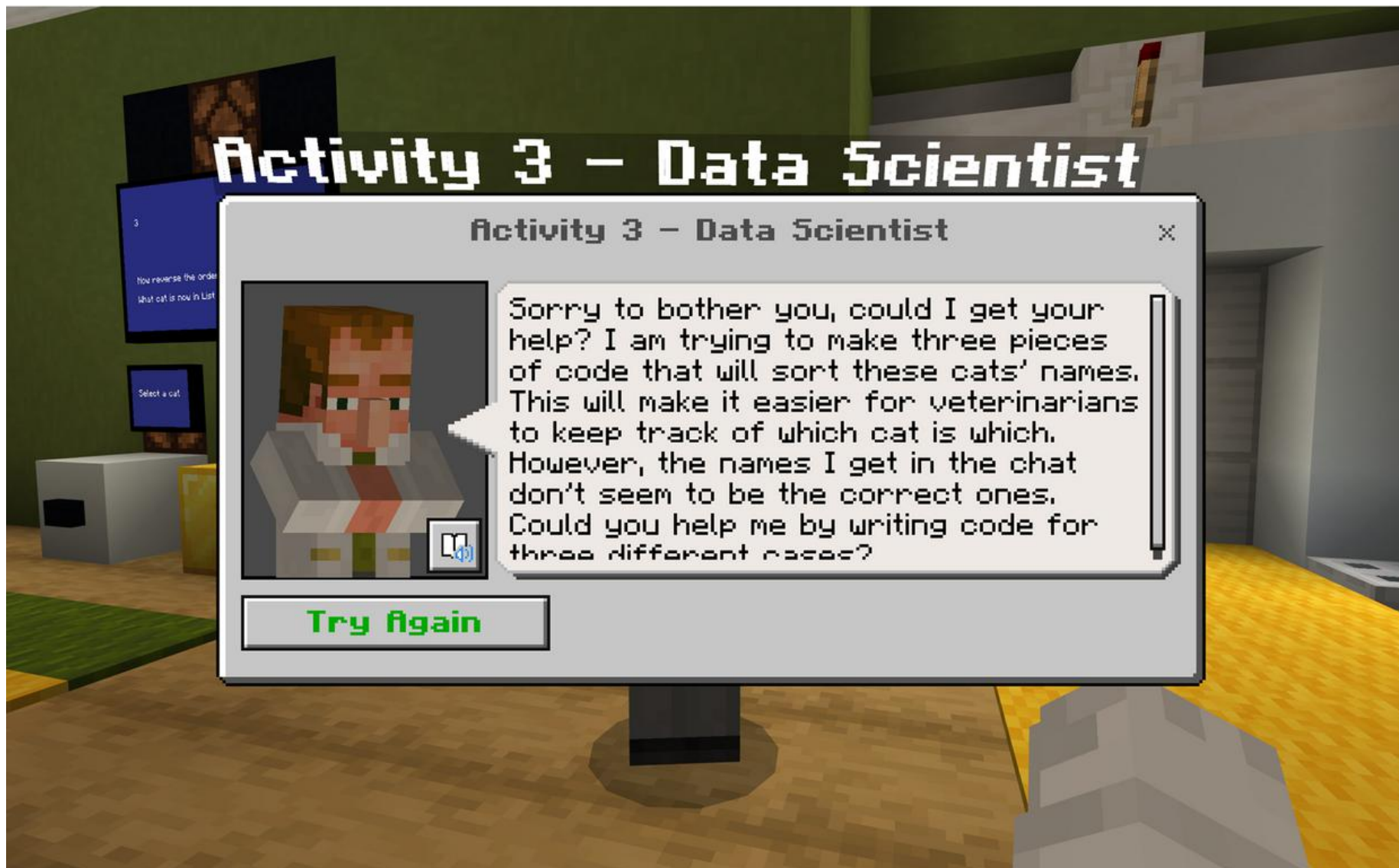

Walk over to the correct dog and place the food into the dog's bowl. Drop the food by pressing "Q" near the dog's bowl.

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 code that will use the **sort** and **reverse** methods to change make changes to the list of cat names. 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 time the code is run, the name of a cat will appear in the chat. To select a cat, press the button, **select a cat**, underneath the monitor. Then go choose the cat from the line-up by pressing the button underneath the correct cat.

SUCCESS!

Recap

What you've done today:

- Learned and applied the coding concept of lists.
- Created, tested, and debugged my Python code.
- Embraced a coding mindset.

REFLECTION

- What is a list?
- What do we use instead of spaces when naming a list or variable?
- What syntax do you place around a list's content?
- What four methods can we use with lists?