



KELP Module 1

Topic: Writing a Program

ACTIVITY 4: Pick up the Animals

VOCABULARY

Scratch: The language we are using to program

Green Flag: A control block that runs a script when you click the green flag above the stage

ACTIVITY GOAL

In this project, you will write your first computer program.

BACKGROUND

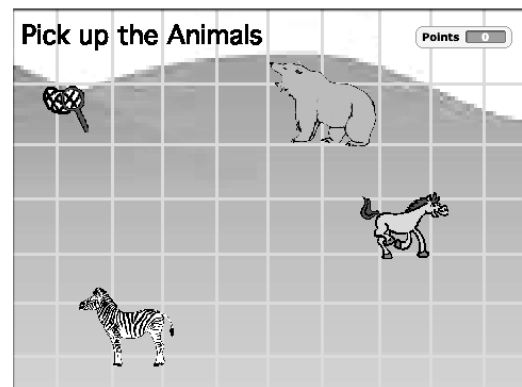
By itself, a computer cannot do anything and they can only understand some words. Someone has to write instructions that they can understand. These instructions are called **programs**. For our projects, we will use Scratch in the Octopi program.

Octopi projects contain **sprites**. These are pictures of animals, people, or objects. Each sprite can have programs or scripts associated with it.

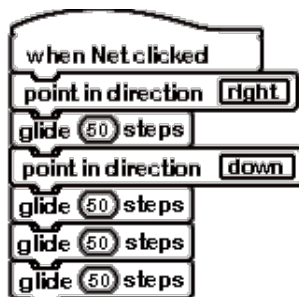
To make a sprite do something, you have to write a **script**. A script has two jobs – to tell the sprite **when to do something** and **what to do**.

EXPLORE

1. Open the project. You should see an area with a picture of some animals on a hill. This area of the screen is called the **stage**. Each of these animals is a **sprite**. You should also see a net. This net is also a sprite. You will be writing a **script** for the net.



2. Some of the **script** for the net is already written (below). Predict what you think this **script** will make the net do. Think about what the words in each **block** might mean to the computer. Write your prediction in the box below.



When you click on the net it will point right then move 50 steps to the right. Then it will point down and move 150 steps down.

3. Find the **Green Flag** above the **stage**. It looks like this. 

4. Click on the **Green Flag**. (Nothing should happen)

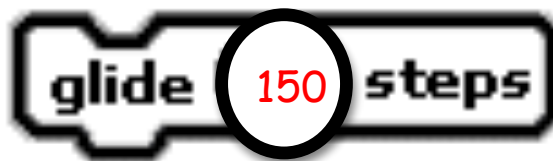
5. Now, click on the **net sprite** on the **stage**. Write what happens below?

The net move right and then down and picks up the Zebra.

6. Did you predict what would happen correctly? Describe what was similar and different about what happened when you clicked on the net.

Yes or No (depending on students' answers), and should discuss what the net did that was the same as or different from what they predicted.

7. Now let's make this **script** a little bit shorter. There are three glide **blocks** in a row, and each of them says to go 50 steps. How could you use only one glide **block** to make the net go the same amount of steps? Write the number of steps you would need in the **block** below.



Quick Tip: Anytime you see a block that has a **white box with a black number** in it, you can change that number. Look at the block on the left that says, "point in direction 90."

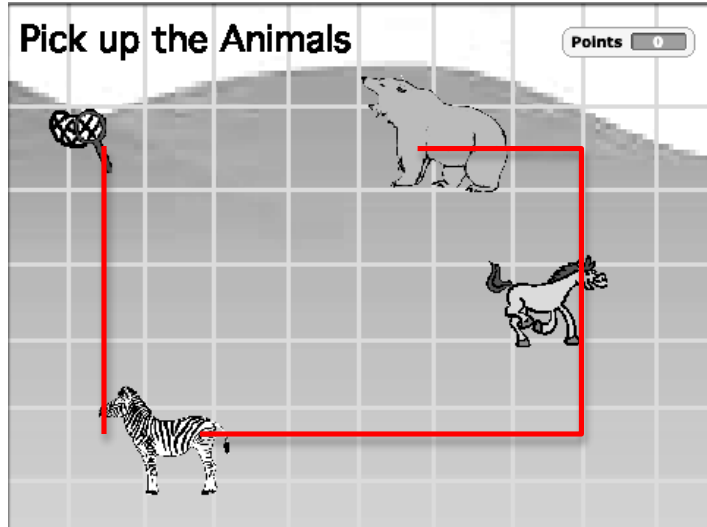
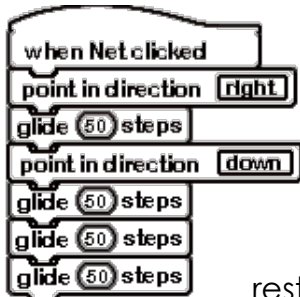
The "90" is in a white box which means you can change it. If you click on 90, a new menu will appear. Now you can click on any of the **options** that come up (left, right, up, or down).

PROGRAMMING CHALLENGE: Mammals

Your goal is to create a **script** that moves the net along a path to each of the animals. To pick up an animal the net needs to land on top of it before moving on to the next one that needs to be picked up.

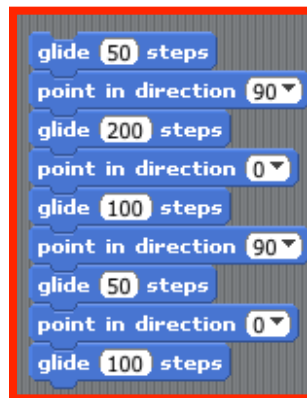
PLAN

Step 1: Plan how you want to move the net.
Draw a path on the picture of the **stage** to the right.



Step 2: Write out your ideas for how you would move the net. Write in the **blocks** you might use to pick up the rest of the animals to the bottom of this **script**:

The script to the right is an example script that will pick up the mammals, but there are other correct scripts as well.



CREATE

Now it is time to write your first program!

1. Go to the left side of the screen where all the **blocks** are.
2. Click on the **block** you want to use (try looking at the scripts you created in the plan section above) and drag it right under the **script**.
Hint: You can use the same block as many times as you want.

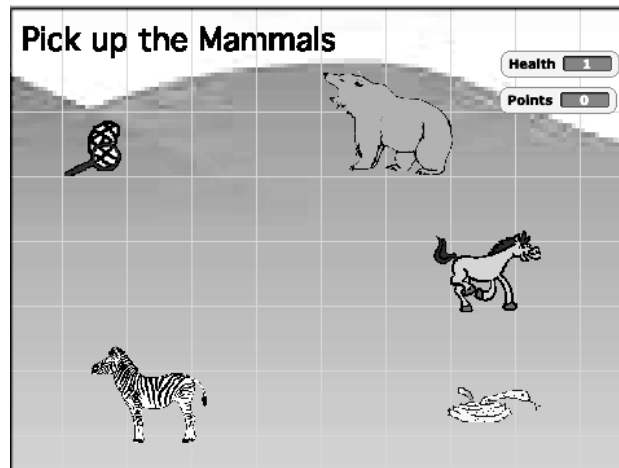
Try It Out. Once you have put in some **blocks**, try out your **script**.

1. **Click on the net** and see what happens. If you didn't get all the animals on the first try, don't worry. Just click the **green flag** to reset the net and try something else.

Putting it all together.

1. Which path did you take to pick up all of the animals? Draw the path of your **final script** below on the picture of the **stage**.

Any path the student draws that goes over all the animals is correct.



IMPROVE

After you have finished the task, try the following challenges:

- 1) Try to make the path shorter (write in the blocks you might use below)

There may be many correct answers to the questions in the IMPROVE section.

- 2) Try to pick up the animals without using the "point toward ____", or the "glide to ____" blocks. Write which blocks you used below.
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