



KELP Module 1

Topic: Writing a Program

ACTIVITY 1: Pick up the Animals

VOCABULARY

Octopi: The computer application we are using to create programs

Program: A set of instructions that are given to a computer to follow

Scratch: The language we are using to program

Block: One command for a sprite to follow

Script: A very short sequence of blocks (instructions) for a sprite to follow

Sprite: A picture on the stage that you can control using scripts

Stage: Picture with the sprites on it where all of the action occurs

ACTIVITY GOAL

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

BACKGROUND

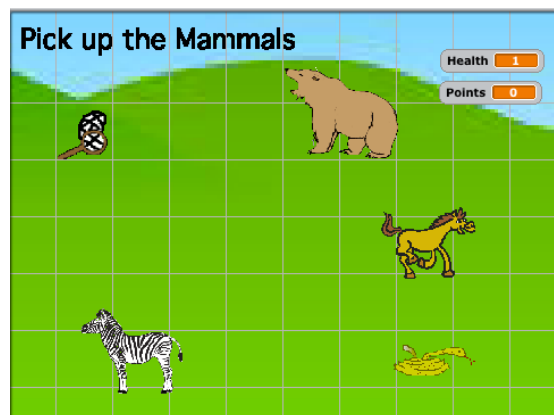
By itself, a computer cannot do anything and they can only understand some words. Someone has to write instructions that they can understand. These instructions are called **programs**. For our projects, we will use Scratch in the Octopi program.

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

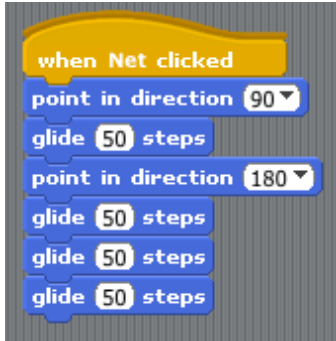
To make a sprite do something, you have to write a **script**. A script has two jobs – to tell the sprite **when to do something** and **what to do**.

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. The script provided is pasted 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 what actually happened match what you predicted would happen in step 2 above? Describe what was similar and different below.

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.

CREATE

Now it is time to create your project. Go to the left side of the screen where all the blocks are. 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. 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. **C**lick on the net and see what happens. If you didn't get all the mammals on the first try, don't worry. Just click the **green flag** to reset the net and try something else.

Putting it all together. Which blocks did you use to pick up all of the mammals? Write your **final script** below the "when Net clicked" block on the right. (Write in the empty space below if you need more space for your script)

The script to the right is an example script that will pick up the mammals using fewer blocks than the previous example, but there are other correct scripts as well that will also pick up the mammals.

```

when Net clicked
  point in direction 90
  glide 50 steps
  point in direction 180
  glide 200 steps
  point in direction 90
  glide 200 steps
  point in direction 0
  glide 100 steps
  point in direction 90
  glide 50 steps
  point in direction 0
  glide 100 steps
  
```

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)

See the script in "Putting it all together" section above.

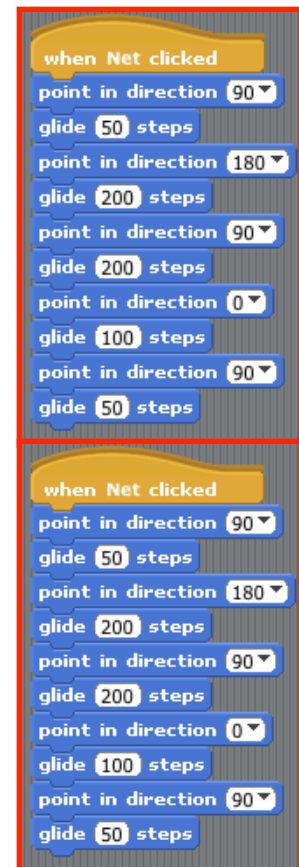
There may be other correct answers as well.

- 2) Try to pick up just the animals that are herbivores. Write which blocks you used to do this below.

The top script on the right is an example that will pick up the herbivores. There may be other correct scripts as well.

- 3) Try to pick up just the animals that are prey. Write which blocks you used to do this below.

The bottom script on the right is an example that will pick up the prey. There may be other correct scripts as well.

**REFLECT**

Is there anything you found surprising when you were completing this project?

There is no right or wrong answer for this question. It depends on the individual student's experiences with the project.

What was the hardest thing to figure out about the project?

There is no right or wrong answer for this question. It depends on the individual student's experiences with the project.