



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

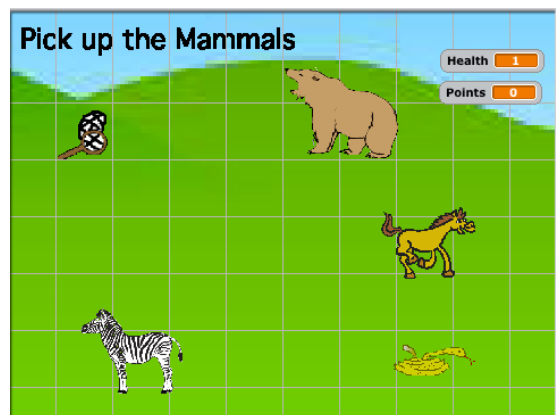
By itself, a computer cannot do anything and they can only understand some words. Someone has to write instructions that they can understand. These instructions are called **programs**. For our projects, we will use Scratch in the Octopi program.

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

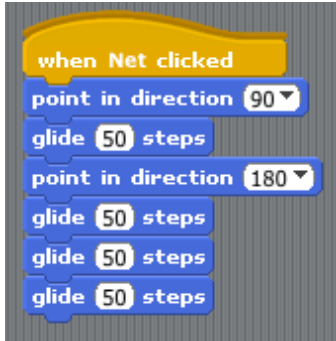
To make a sprite do something, you have to write a **script**. A script has two jobs – to tell the sprite **when to do something** and **what to do**.


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.



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?

6. Did what actually happened match what you predicted would happen in step 2 above? Describe what was similar and different below.

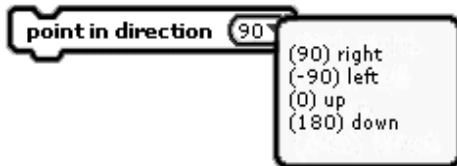
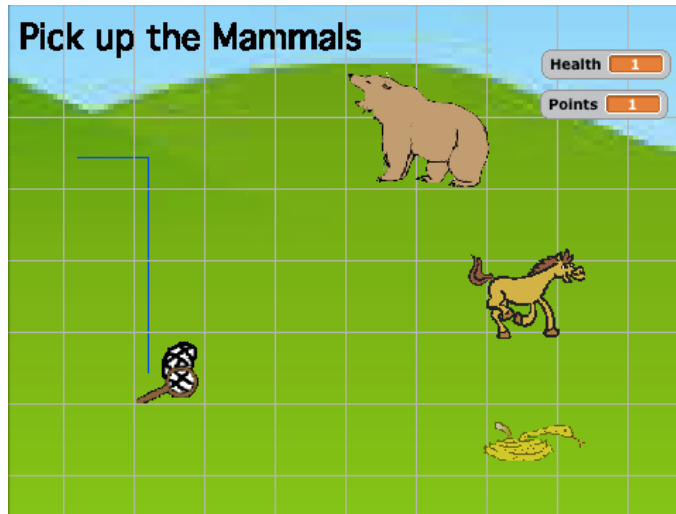
PROGRAMMING CHALLENGE: Mammals

Your goal is to create a script that moves the net along a path to each of the **mammals**. 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.

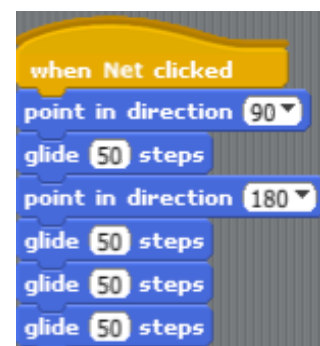
Draw a path on the picture of the stage to the right. Remember your goal is to pick up all of the mammals.



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).

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 mammals to the bottom of this script:



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)



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)

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

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

REFLECT

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

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