



VOCABULARY

User: The person playing the game, running the program, etc.

Control Blocks: Blocks that determine **when** something should happen.

Event: Something that the user does (click sprite, press button, etc.)

Interactive: A program that responds to things the user does.

ACTIVITY GOAL

In this project, you will program sprites to respond to **user events**. To create a fun game, something should happen when the user clicks on things. In this project, you will learn how to do this.

BACKGROUND

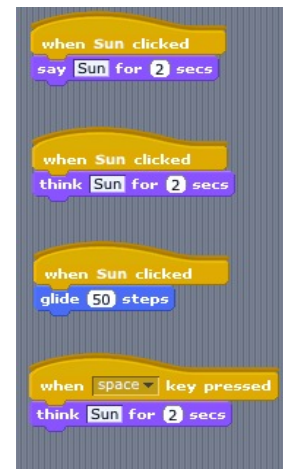
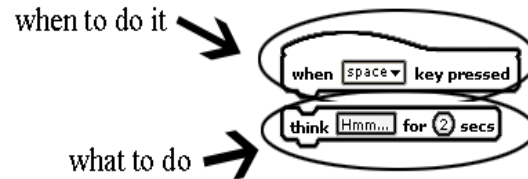
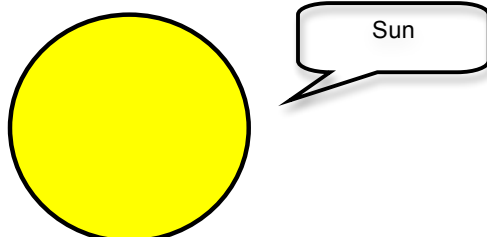
Remember that scripts have two parts – **control** blocks (when to do something) and **action** blocks (what to do). Blocks that control when things happen are **orange**. Every script must start with a control block to tell when to do it.

EXPLORE

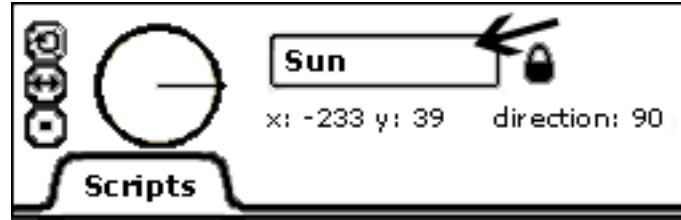
1. What happens when you click the **sun**?

2. What happens when you click the other **planets**? _____

3. Now click on the **Control** category and look at the blocks. Circle the **script** to the right that you think was used to make the sun say its name.



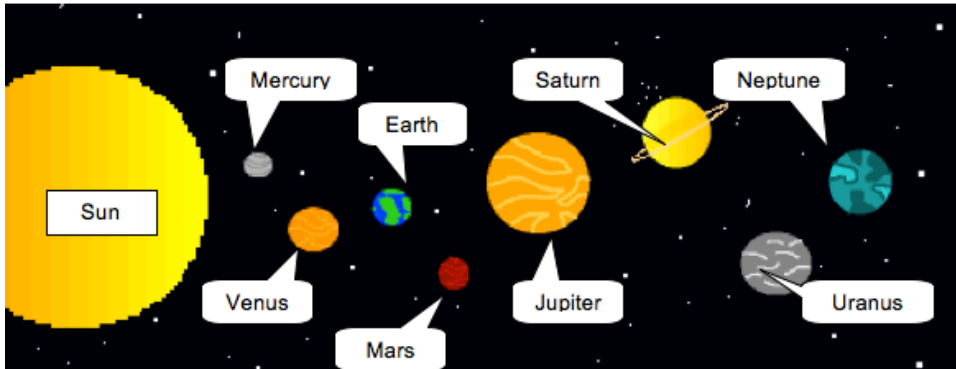
4. Now, click on the **sun** in the sprite area (lower right corner of the screen). Notice that when you click on the Sun, you can see the name "Sun" next to its picture above its scripts.



5. If you click on one of the planets, you should notice that the other sprites (planets) **do not** have their proper names in this box. You will name them in the next part of this activity.

PROGRAMMING CHALLENGE: EXPLORING THE PLANETS

Your first goal is to **label** each sprite (planets) correctly. Your second goal is to create **scripts** for each planet so that each planet's name appears when the planet is clicked. The third goal is create a **script** so that the rocket moves up, down, left, and right using arrows on the keyboard.



PLAN

Step 1: Plan how you will label the planets and make them say their names. Use the picture above to help label the planets correctly.

Hint: Refer back to the EXPLORE section of this activity and use the reference picture above.

Step 2: Plan how to allow a user control the rocket. You will create four **scripts** for the rocket – one for each arrow key (left, right, up, down).

Plan how you will make the rocket turn and move to the left when the user presses the **presses the left arrow button**.

1. Circle which **Control** block on the right you would use to do this.



2. Now click the **Motion** category and look at the blocks. What **blocks** do you think will make the rocket **move to the left** when the user presses the left arrow button? Write the blocks you will use in the space below.

*Hint: You should use one block to get the rocket to **point** in the right direction and another block to make the rocket **move**.*

Step 3: Plan how you will make your rocket move in each direction.

Write out the **blocks** you will use to make the rocket turn and move in each direction when you push on all of the different arrow keys in the table below.

	LEFT (←)	RIGHT (→)	UP (↑)	Down (↓)
Control Block	<hr/>	<hr/>	<hr/>	<hr/>
Action Blocks	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

CREATE

Now it is time to create your project. You should add **scripts** to all of the sprites except for the one that has already been completed (the Sun).

- 1. Label all of the planets.**
- 2. Make all of the planets say their names when you click on them.**
- 3. Make the rocket move when you press all of the arrow keys.**

Try it out: When you have finished everything try it out! Click on all of the planets and push all of the arrow keys to make sure your scripts are working.

IMPROVE

After you have finished, think about what you could do to make your project more interesting. Notice that in the **Looks** category there are **blocks** that you did not use.

How could you use those **blocks** to make your project more interesting? Describe what blocks you might use and what you think they might do below.

REFLECT

Is there anything you found surprising when you were completing this project? Describe it below.

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