



### 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.)

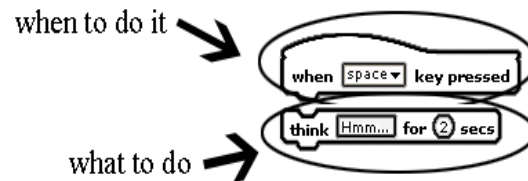
**Interactive:** A program that responds to things the user does.

### ACTIVITY GOAL

In this project, you will **program** a sprite 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.

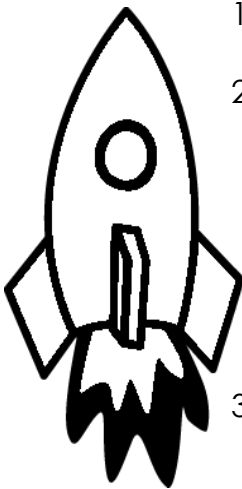
### BACKGROUND

Remember, every script must start with a **control block** to tell when to do something. **Action blocks** tell the sprite what to do.



**Quick Tip:** Remember, you can **copy scripts!** Right-click on the **first block** of the script, and **choose duplicate**. Now you can drag the new one to a different **sprite**.

### EXPLORE



1. Does anything happen when you click on the **rocket**?  
**The rocket doesn't do anything.**
2. Look in the **scripts** area for the **rocket**. Does it have any scripts telling it what to do? Write what you think the **script** makes the rocket do below.  
**Yes. The script tells the rocket to point up and then move 10 steps in that direction when you press the up arrow key.**
3. Now click on the **Control** category and look at the blocks. Think about which **blocks** you might use and what you think they might do.

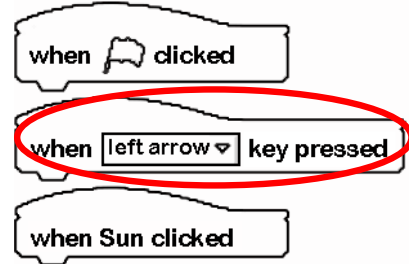
### PROGRAMMING CHALLENGE: FLYING THROUGH SPACE

Your goal is create several **scripts** so that the **rocket** moves up, down, left, and right using the arrow keys on the keyboard.

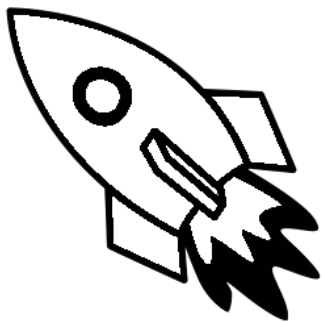
#### PLAN

**Step 1: Plan how to allow a user to 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 up when you press the **up arrow key**.



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 up** when you press the up arrow key? 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**.*

1. "point in direction \_\_\_" block

2. "move \_\_\_ steps" block

**Step 2: 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 (↓)
<b>Control Block</b>	when [left arrow] key pressed	when [right arrow] key pressed	when [up arrow] key pressed	when [down arrow] key pressed
<b>Action Blocks</b>	point in direction -90 move 0 steps	point in direction 90 move 0 steps	point in direction 0 move 0 steps	point in direction 180 move 0 steps

## CREATE

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

### Double-check: Did you remember everything?

1. Make the rocket move when you press all of the arrow keys.

**Try it out:** When you have finished everything try it out! 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. Below are some challenge questions to try out.

1. How could you **program** your rocket so that it can move in a square shape? Describe what blocks you might use below.

The IMPROVE sections are designed to take the lesson to the next level and challenge the students. There are many possible correct solutions to these questions.

2. How could you **program** your rocket so that it can move in a circle? Describe what blocks you might use below.

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3. How could you **program** your rocket so that it can move in a star shape? Describe what blocks you might use below.

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