	KELP Module 1
	Topic: Writing a Program
WIRED-UP	ACTIVITY 4: California Geography

VOCABULARY

Broadcast: A block that sends a message (usually to another sprite)
Receive: A block that does something in response to a message (which probably came from another sprite)
Code: Writing a computer program (like building scripts with blocks). Scripts and sprites that make up the program.
Wait: Block that makes a script pause so that actions happen when you want them to.

ACTIVITY GOAL

In this project, you will learn how to coordinate actions between sprites in a program by broadcasting and receiving messages.

BACKGROUND

Sometimes if something happens to one sprite you want another sprite to do something in response. For example, you may want to be able to click on a sprite that represents a location and have another sprite go to that location. To do this, you will need to **broadcast** and **receive** messages between sprites.

Recall that in the last lesson we learned about control blocks**.** Control blocks tell sprites *when* to do something. You have seen "On green flag", "When sprite clicked" and "When button pressed." With these blocks, a sprite acts in response to something the **user** does.

Now we are going to learn how to make a sprite respond to something a *different* sprite does or something the user does to a *different* sprite. To do this you use the **broadcast** and **receive** blocks together.

One sprite **broadcasts** a message:

The other sprite **receives** a message:

Notice that each of these blocks has a square that you can type in. This is where the **message name** goes.

* The message names must match (in this case, "Santa Barbara").

EXPLORE

1. Open the project **LessonGeography**. You will see a map of California and different sprites that represent cities.

2. Click on the **green flag** and then click on the mission located in **Santa Barbara**. Describe what happens.(If you need to see it again, click the green flag again and then click the mission again)

_____

_____

_____

_____
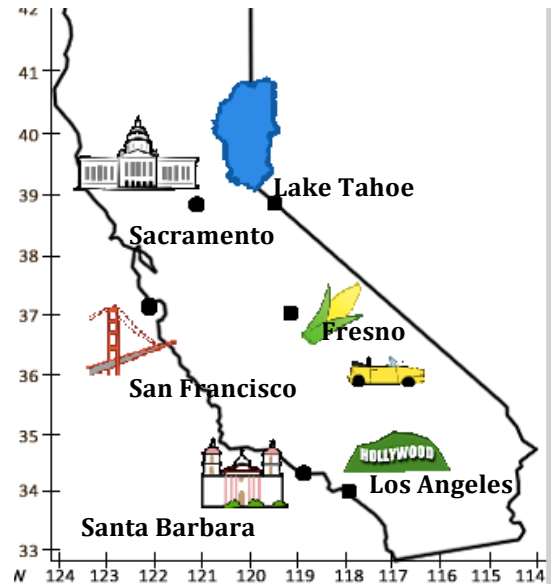
3. Now click on the "**Control**" category and look at the blocks available. What **blocks** do you think were used to make the sprite for the Santa Barbara mission send a message to the sprite for the car?

4. What **block** do you think was used to make the car respond to the Santa Barbara mission's message? (*Circle your answers on the right*)

   Hint: Look at the scripts that are already used for the Santa Barbara Mission and the car by clicking on their sprites in the bottom, right box.

PROGRAMMING CHALLENGE: California Geography

Your goal is to send and receive **messages** so that when you click on a city's sprite, the car says the name of that city and moves to it.

For example, if you click on the sprite in San Francisco (the Golden Gate Bridge), the car should say "San Francisco" and then move towards San Francisco.

PLAN

In the explore step, you should have figured out how to make the car know **when** to move to a city. Now you need to plan **how** to make the car say what it needs to say and go to the proper place.

Step 1: Plan how to make the car say the city's name.
Click on the "**Looks**" category on the left of the screen and look at the blocks available. What block(s) do you think you need to use to make the car **say San Francisco** when you click on the Golden Gate Bridge sprite? (circle your answer on the right)
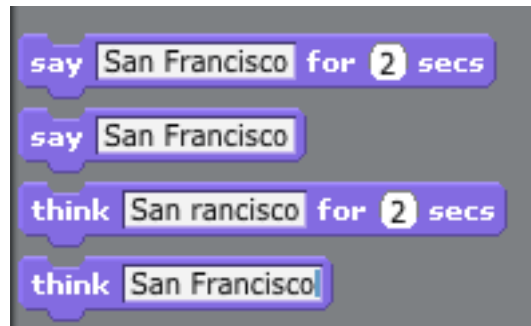
Now write out what the car will say when you click on all of the other sprites.
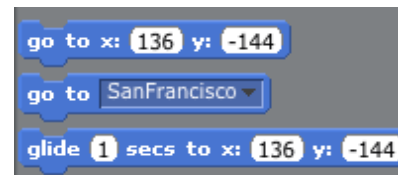
Capitol Building: _____

Lake: _____

Ear of Corn: _____

Hollywood sign: _____

**Step 2: Plan how to make the car move towards a city.**
Click on the "**Motion**" category on the left of the screen and look at the blocks available. What block(s) do you think you need to use to make the car **move to San Francisco** when you click on the Golden Gate Bridge sprite? (circle your answer on the right)

CREATE

Now it is time to create your project. Make sure you remember to add scripts to all of the sprites (Santa Barbara has already been completed).

To add a **new message** name (like a message that will tell the car to go to San Francisco), click on the sprite you want to go to and put the

"**Broadcast**" block into the scripts window (there shouldn't be any other blocks yet). When you click the shaded box with the little triangle in it, click on "**new…**"
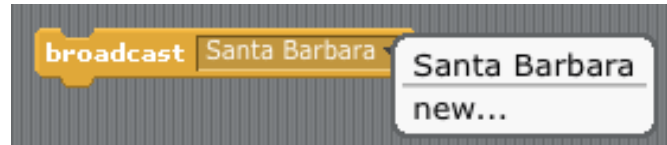
A box should pop up. **Type the name of the city** you want the car to go to next. Use a different message name for each city (it is easy to name each new message the name of the city you want to go to so you don't get them mixed up)
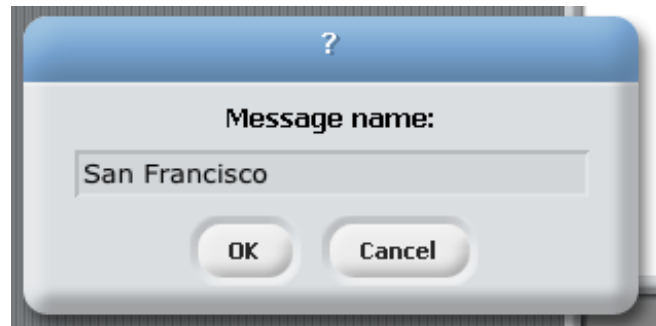
Next Steps: Now that you are able to make each city's sprite broadcast a message when it is clicked on, add a script for the car sprite that will make it say the city's name, and move to the city when it receives the message.

Here is how your **scripts** will be broken down:

Script for the city sprite	Script for the car sprite
"**Control**" block	Block that will "**receive**" message
"**Broadcast**" block	Block that will "**say**" city's name,
	Block that will "**go to**" the city

** Remember that you will need scripts like this for **each** city on the map!*

IMPROVE

After you have finished, try one of these bonus activities.

1. Notice that in "**Looks**" category, we have included blocks that you didn't use in this activity. Could you use those to make your project more interesting? **Try some of them out on your sprites** and describe what these blocks do below.

2. Try making the sprites say the name of the city and the city's latitude and longitude. (use the numbers along the sides of the stage to help find this)

REFLECT

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

Did anything work differently from how you thought it would?
_____
_____
_____
_____

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