

Access Scratch Through this link : <https://scratch.mit.edu/>

1. Make an account by going on the Join Scratch tab present in the header of the website click on highlighted “Join Scratch”.



2. Follow prompts after pressing join scratch to create an account.

A screenshot of the "Join Scratch" account creation page. The page has a light blue background with a white central form area. At the top, it says "Join Scratch" and "Create projects, share ideas, make friends. It's free!". Below that is a section for creating a username, which includes a text input field labeled "Username" and a blue callout bubble with the text "Don't use your real name" pointing to the "Username" field. There is also a section for creating a password, which includes two text input fields labeled "Password" and "Type password again", and a checkbox labeled "Show password". At the bottom of the form is a large orange "Next" button. The entire form area is highlighted with a red box.

3. Once the account is set up press create highlighted in the top left corner of your screen.



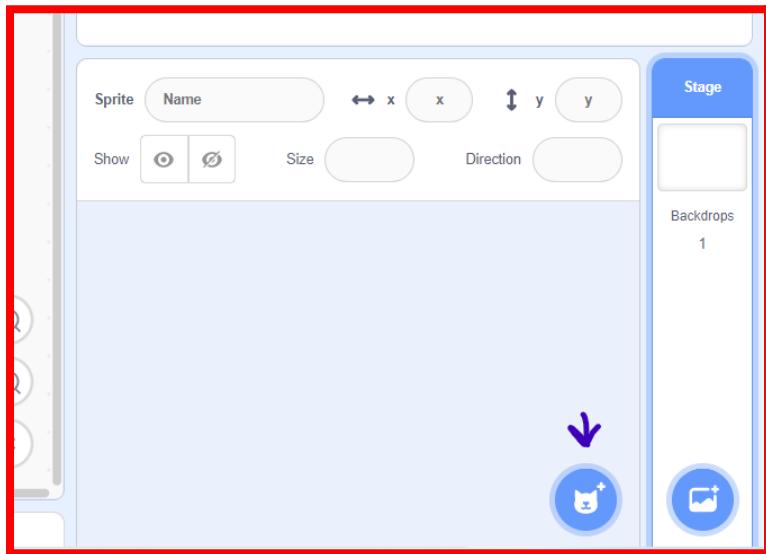
Storyboard Instructions :

Beginners Tip With Coding: With each code change make sure to run the program to see how it acts. This will help with debugging. Debugging is a practice in computer programming where you identify an error and troubleshoot to fix it so the program runs smoothly. Running the program often to see how it acts makes troubleshooting an error way easier than waiting till all code changes are made. This is the only green box you are required to read the other green boxes with information on the concepts applied in this activity taken conceptually further.

Link to final project : <https://scratch.mit.edu/projects/762826530>

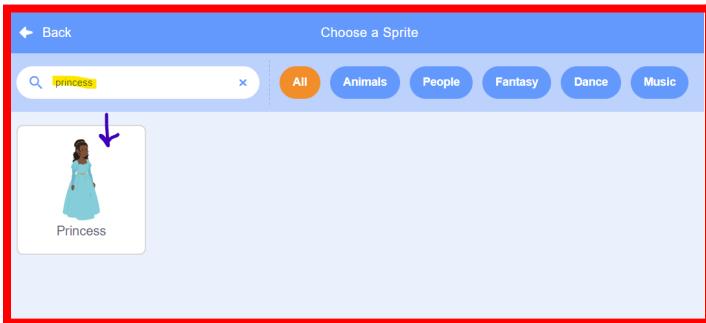
Link to YouTube Explanation Video : <https://www.youtube.com/watch?v=uv8mbL-MC58>

1. Pick a character to be the main character. Hover over choose a Sprite. If you want to draw your character click paint. If you want to upload your character choose upload. Or if you want to choose one of the characters in Scratch pick “Choose a Sprite”.

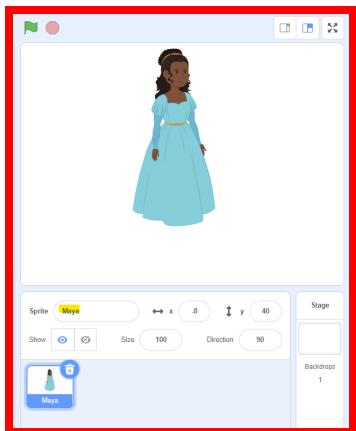


Step 1: For students that may want to be creative, urge them to experiment with the different ways of uploading a sprite as mentioned in the first step in the student step by step guide.

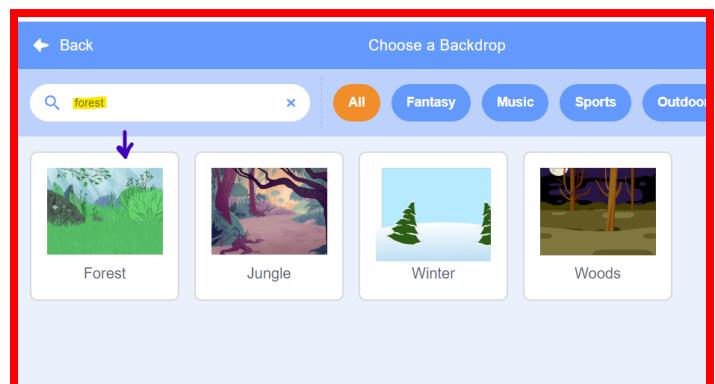
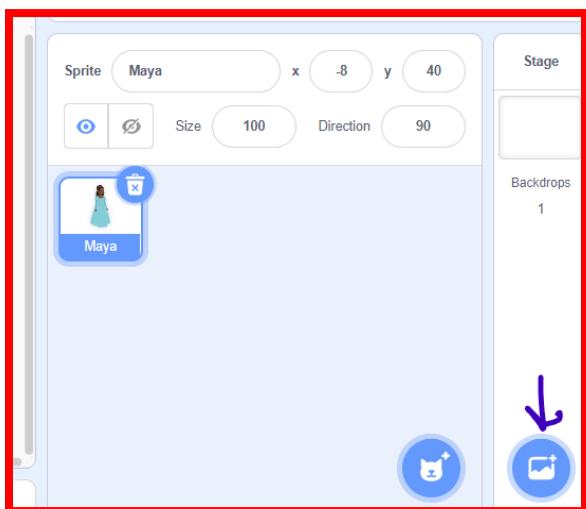
2. In our demo we will select the princess. You can get the princess by typing in the search bar princess. Once it is found click on the princess to bring it into the screen.



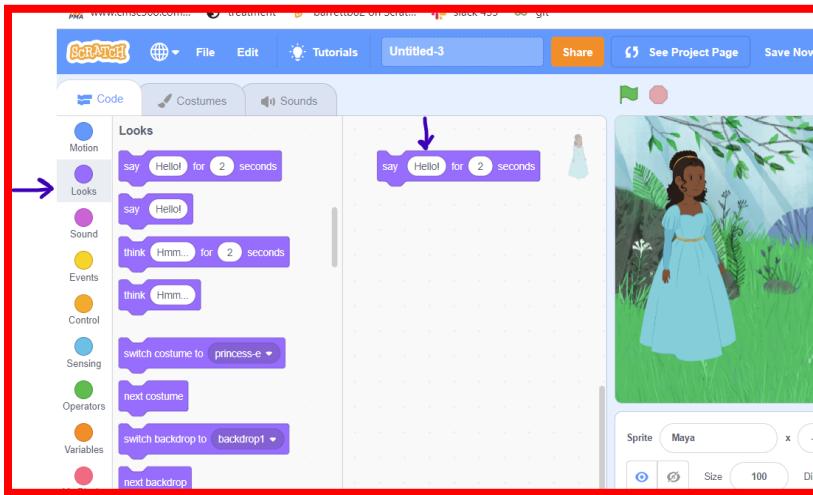
3. We will rename the princess to Maya. Type in the sprite bubble on the toolbar that is under the console screen Maya.



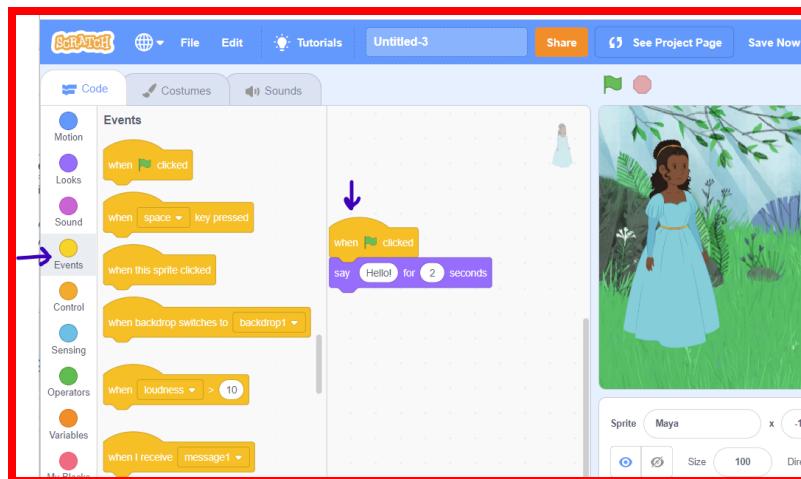
4. Next create a backdrop, hover over choose a backdrop. When on the screen search in the search bar forest as that will be the first background of our story.



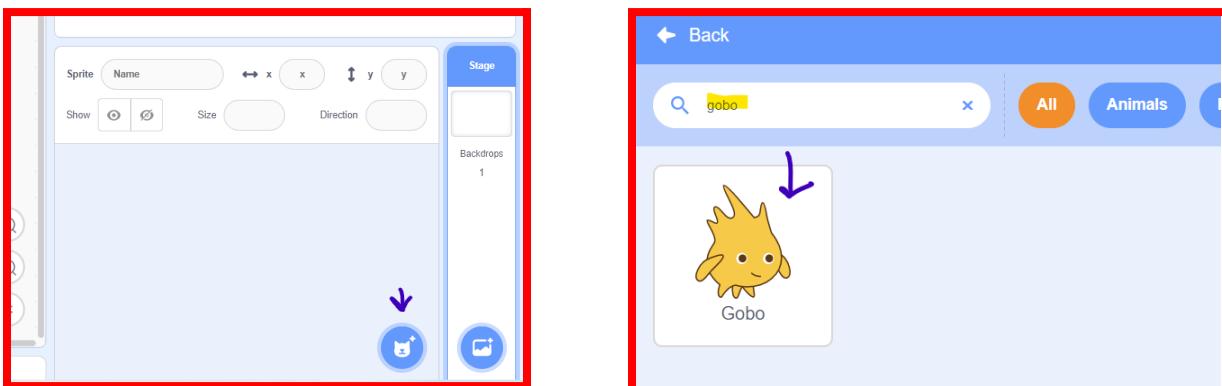
5. Afterwards we will make the princess say something. Go in the looks category and drag a say block.



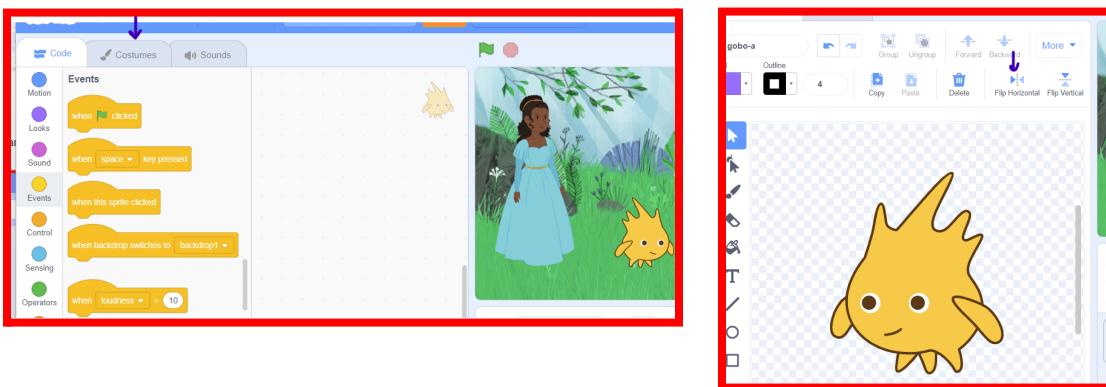
6. Then go into events and attach on the top of the say block a when the green flag clicked block.



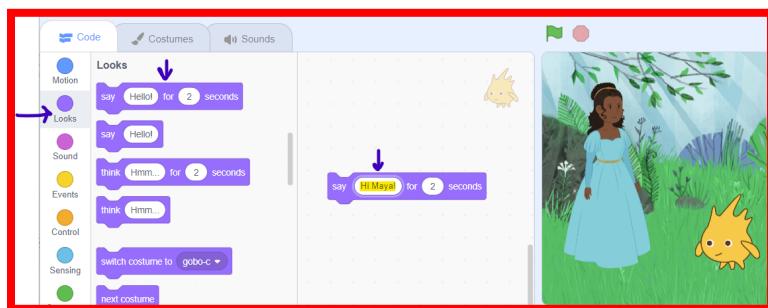
7. Add another character, click on choose a sprite again. In the search bar search for a Gobo.



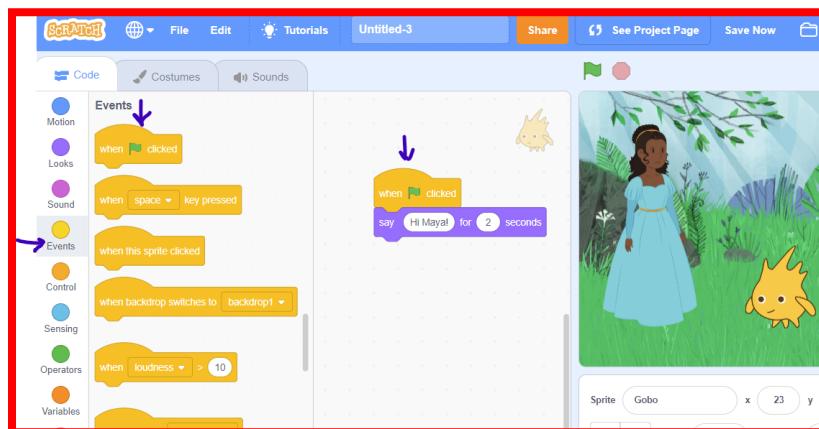
8. To get the character to face the main character click on the costume tab and click flip horizontal. After the sprite is flipped click back to the code tab (the tab on the left of the costume tab shown in the first snippet).



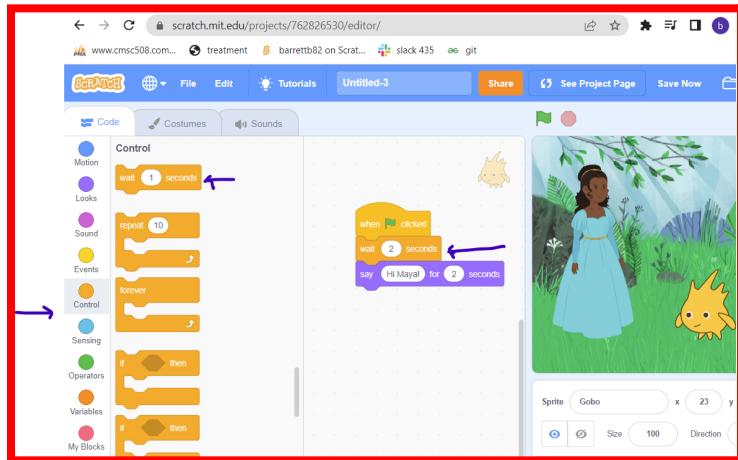
9. Go into look and drag out another say block. In the text on the right of the say prompt enter "Hi Maya!".



10. Then go into events and attach on the top of the say block a when the green flag clicked block.

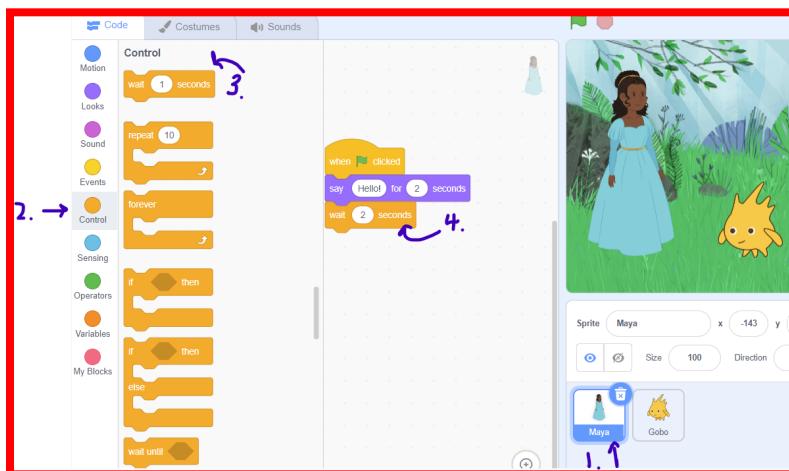


11. Make gobo talk after Maya, go into control category and drag out a wait block. Place it above Gobo say block. Change the wait to 2 seconds.

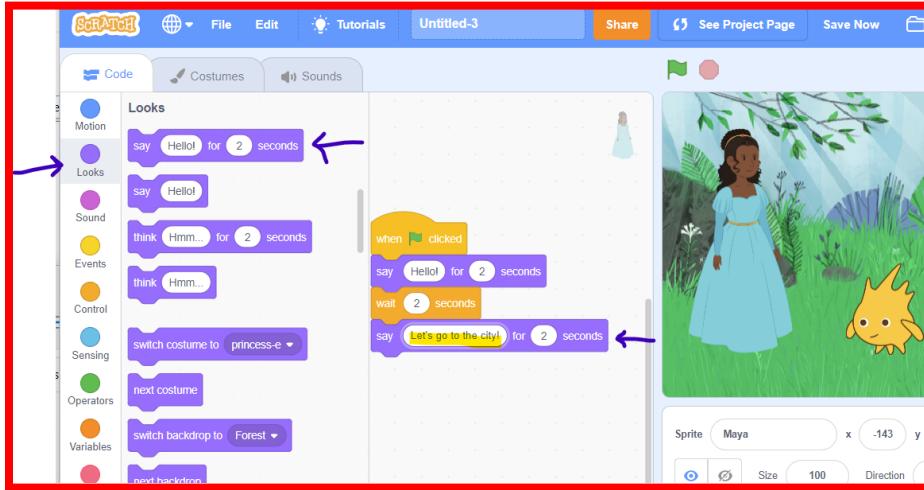


Step 11: In order to create a conversation with the sprites so they will not talk at the same time we add the wait block in this step. In order to determine the wait time within that block we know that the sprite will have to wait the amount of time that the other sprite is talking. In this case in the Maya code section we see that her say is 2 seconds long which means the wait will be at least 2 seconds long.

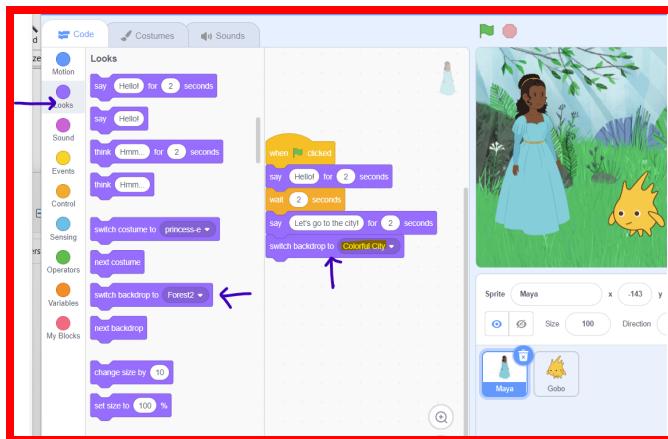
12. Click on Maya sprite and have Maya wait for 2 seconds while Gobo talks. Go into control and attach a wait block with the seconds adjusted to 2 and place it after Maya say block.



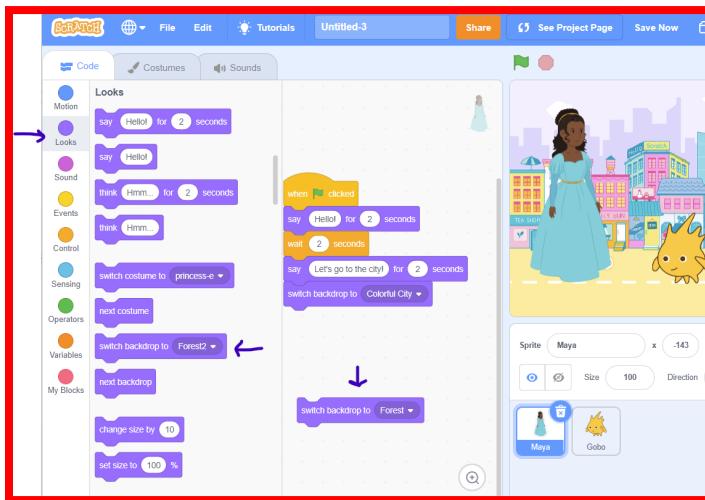
13. Have Maya say let's go to the city. Go into looks and drag a say block under the wait block. In the text part enter “Let's go to the city!”.



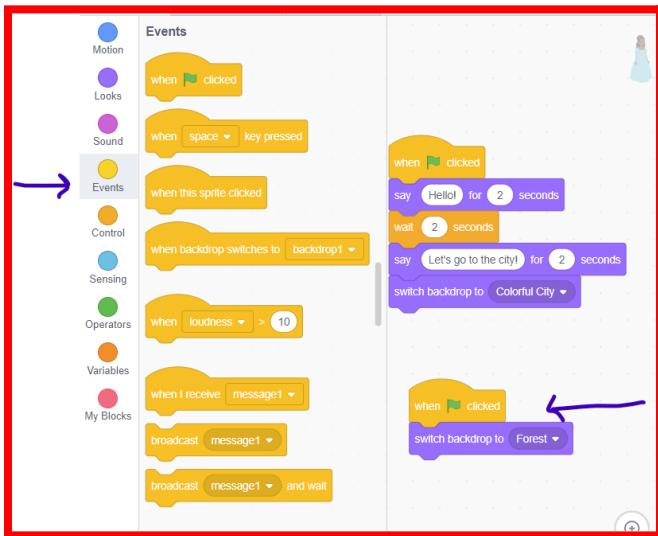
14. Add another scene to make them go to the city. Go into the looks category and drag the switch backdrop to and select Colorful City as the prompt in the circle inside the block. Add it under the say block.



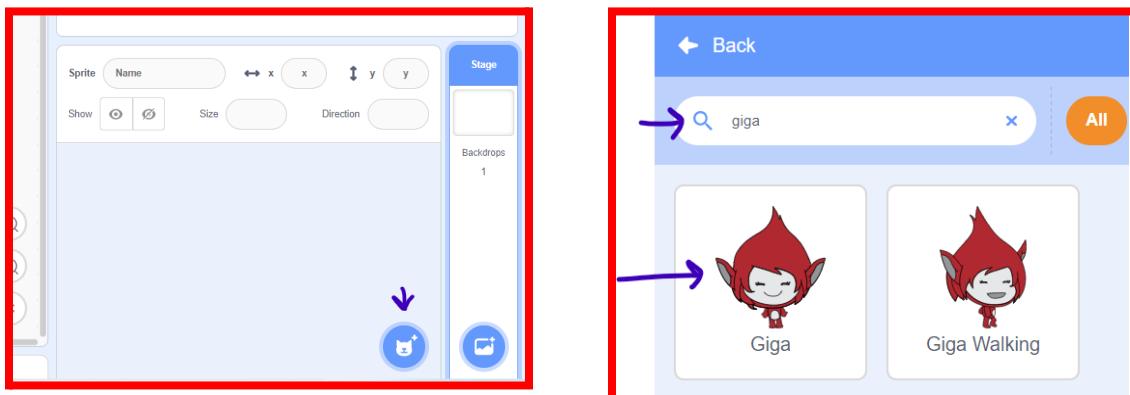
15. When the program starts we want them at the forest background to do that we go to look and drag another switch background block this time with the forest in the circle.



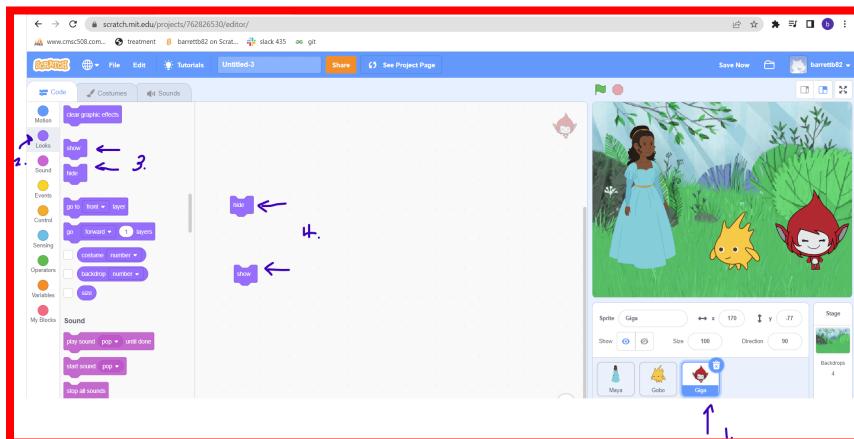
16. Go to the events category and attach when the green flag is clicked to the top of the switch backdrop block that was just added.



17. Now we want a character to appear in the city. Create a new sprite and pick Giga. Add another character, click on choose a sprite again. In the search bar search for a Giga.

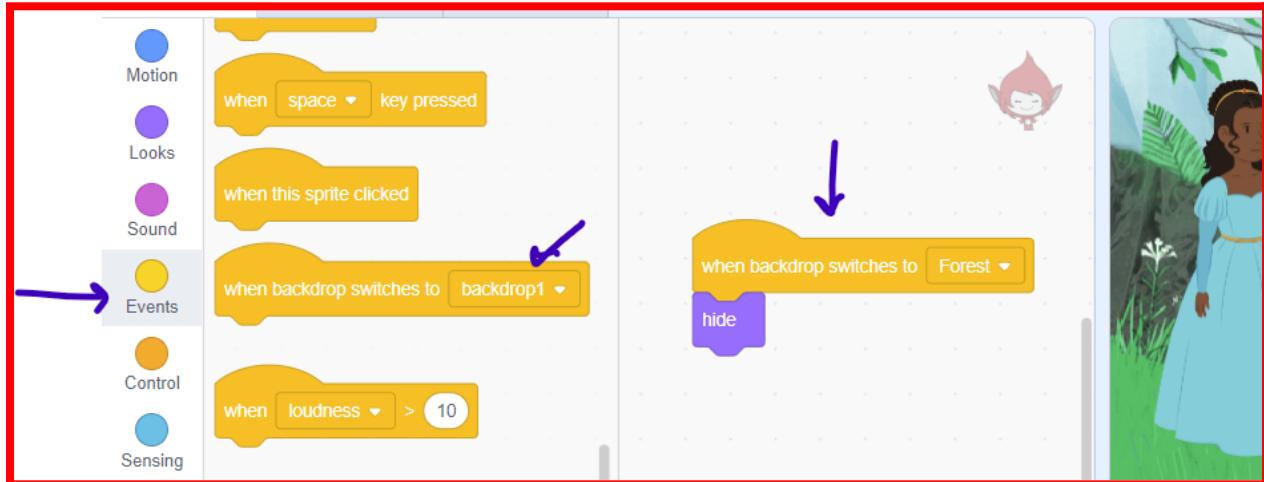


18. Click on Giga sprite before coding. To make Giga appear in the city go to the looks category and pull out the blocks hide and show.

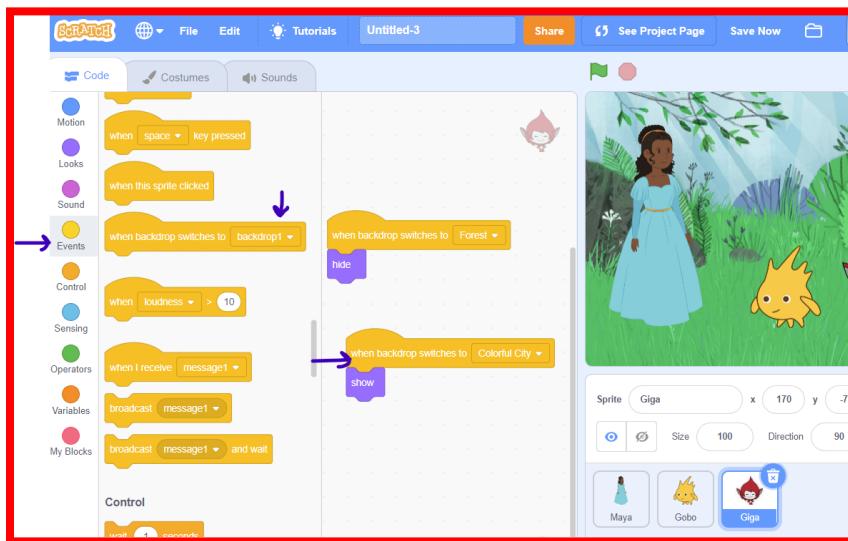


Step 18: Put emphasis on the students that the block hide will make a character disappear. The block show will make a character appear. The use of these help us make a character appear in some scenes but not all. For example, Giga is present in the city scene but not the forest scene.

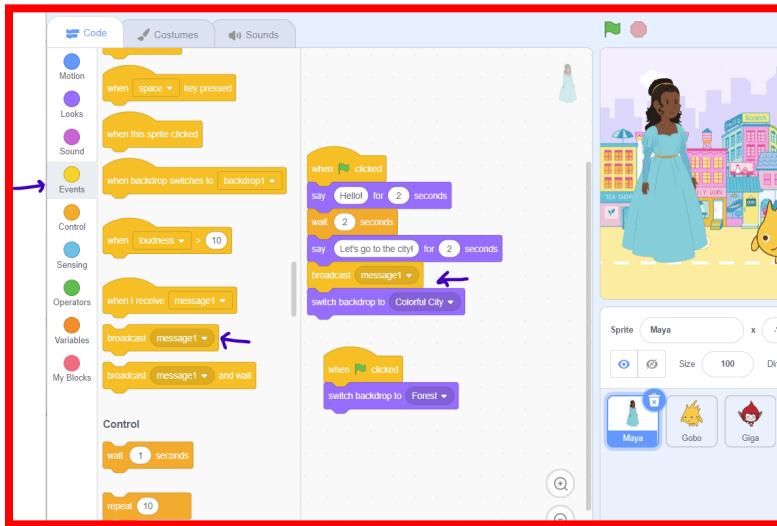
19. Go into events and select the block when the backdrop switches to and in the rectangle select Forest. Then attach it to the top of the hide block.



20. Go into events and select the block when the backdrop switches to and in the rectangle select a Colorful City. Then attach it to the top of the show block.

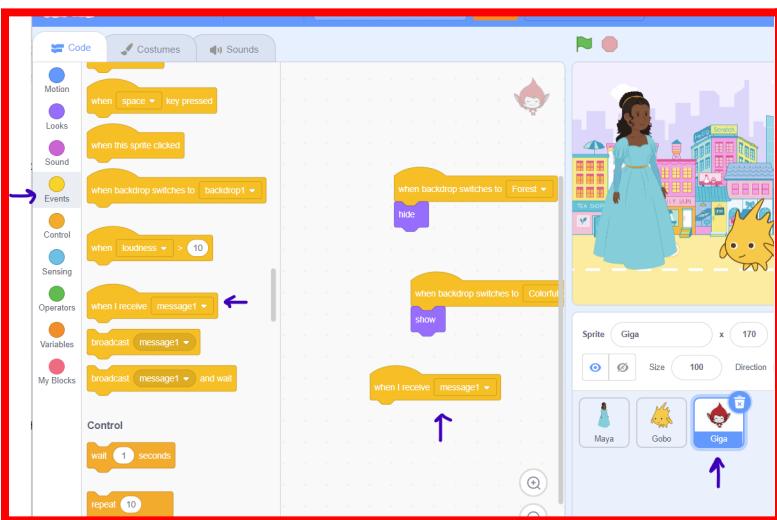


21. Click on Maya sprite. Go to the events category and pull a broadcast block out and attach it under the second say block.



Step 21: Emphasize the reason we are using broadcast instead of wait in the conversation we are making amongst sprites is because it can be hard to follow the counting of the seconds that many different characters talk for.

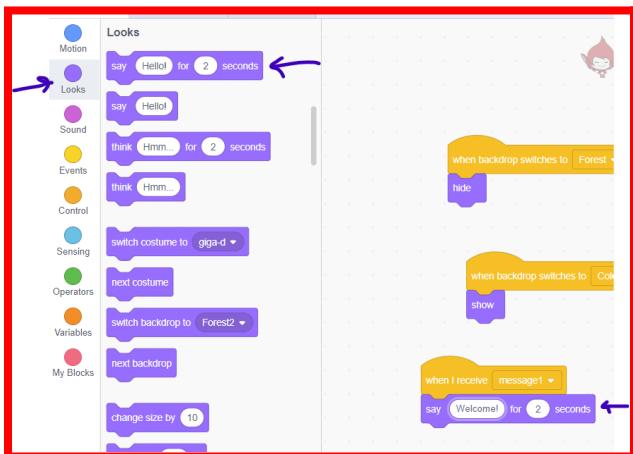
22. Then click on Giga sprite and go into the events category and pull out when I receive message 1.



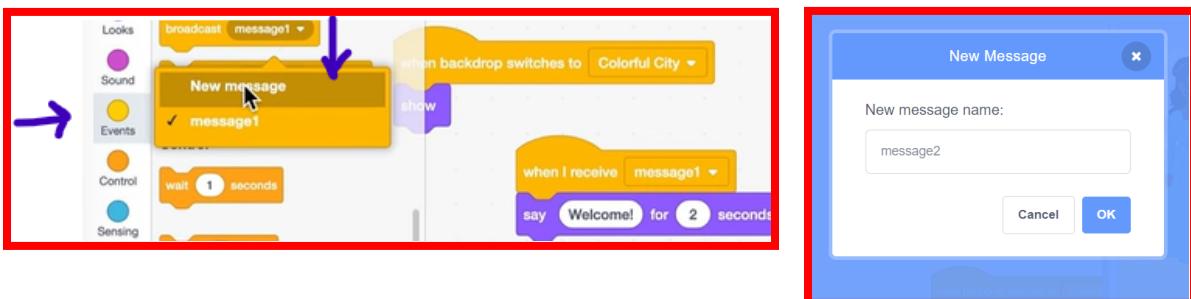
Step 22: The concept of a broadcast in scratch is like an invisible message that one character sends out. You can make other characters do something specific when they get that message. For example in the previous step Maya sends out the invisible message with the broadcast block and then when Giga receives the invisible message Giga will respond.

For two characters the wait blocks work well but with any more characters in the storyboard to limit confusion use broadcast.

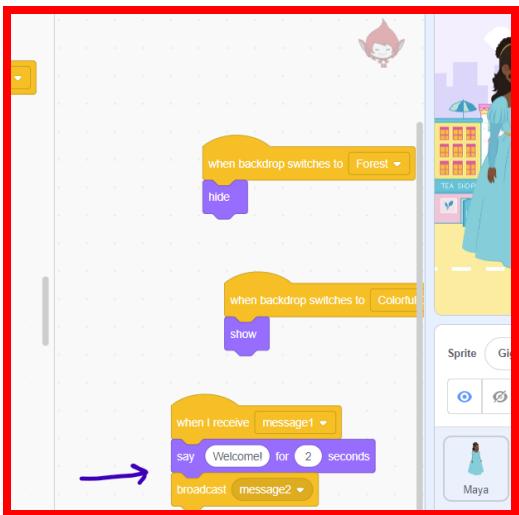
23. Then go into the looks category and pull a say block, enter the message "Welcome!" in the text area and attach under the when I receive message 1.



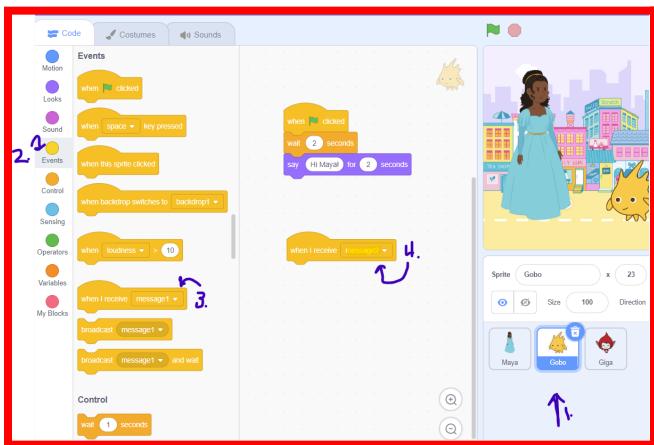
24. Now make Gobo say something after Giga does. Go into the events category and go to the broadcast block inside the rectangle before pulling it to the console right click and select a new message. Call the message message2.



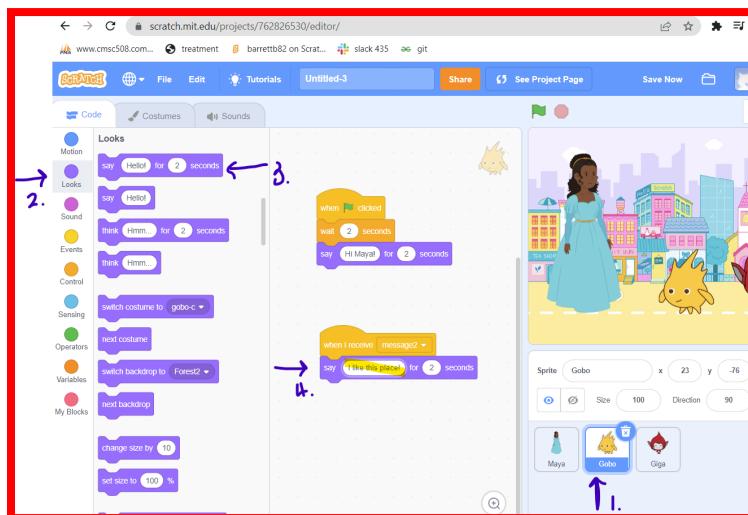
25. Then place the block made under Giga's say block.



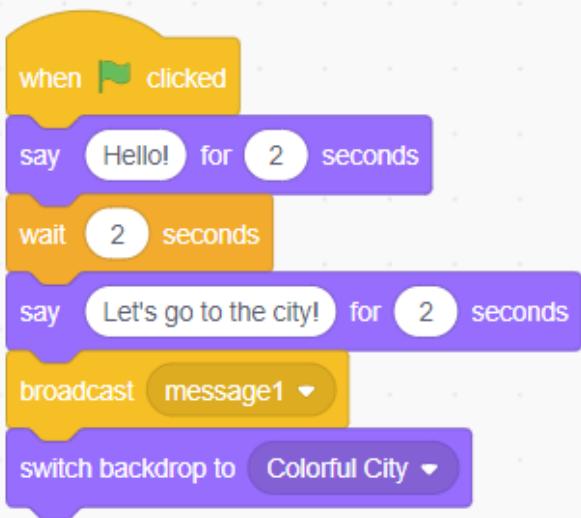
26. Then click on the Gobo sprite and go into events pulling when I receive message 2 block.



27. Go to the looks category and attach a say block to the bottom of when I receive message 2. In the text write "I like this place!".

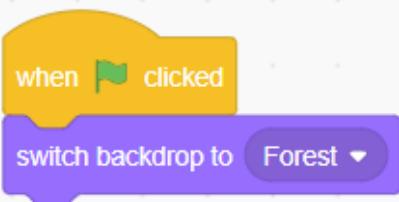


Final snippet of code in Maya Sprite :



A Scratch script for the "Maya" sprite. It starts with a "when green flag clicked" hat. Inside, it says "Hello!" for 2 seconds, waits 2 seconds, says "Let's go to the city!" for 2 seconds, broadcasts "message1", and then switches the backdrop to "Colorful City".

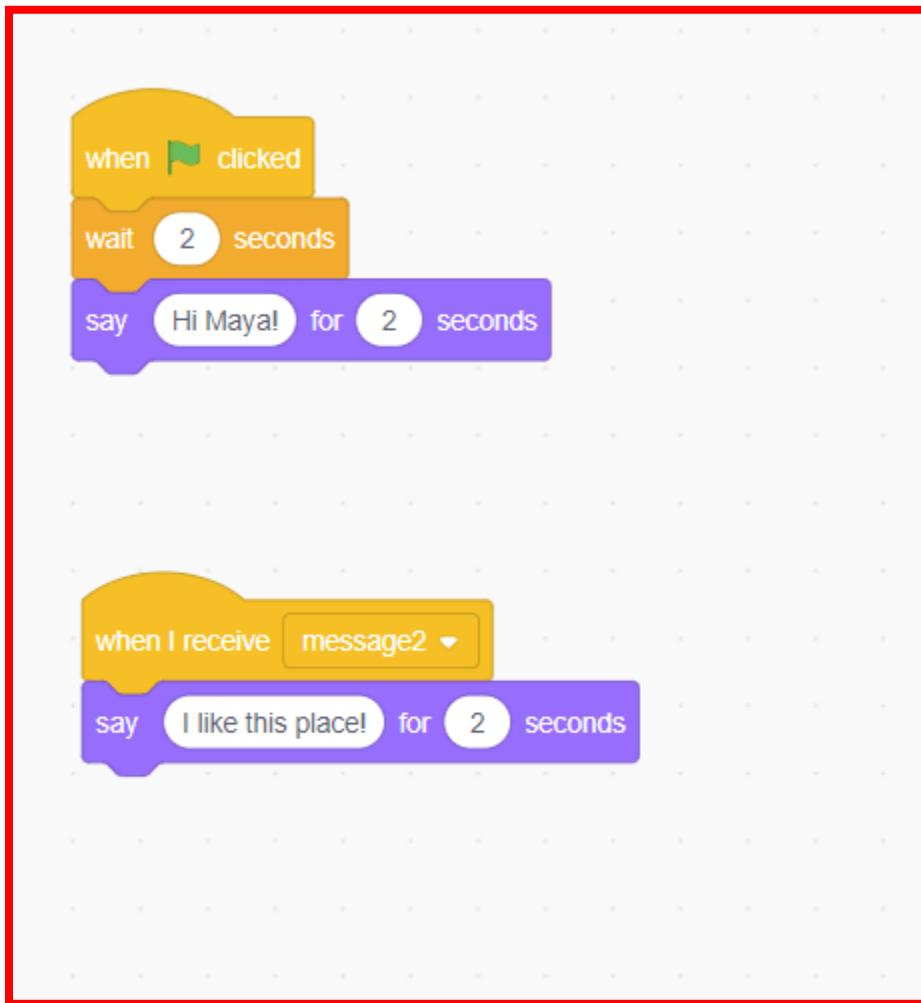
```
when green flag clicked
  say [Hello!] for (2) seconds
  wait (2) seconds
  say [Let's go to the city!] for (2) seconds
  broadcast [message1 v]
  switch backdrop to [Colorful City v]
```



A Scratch script that runs when the green flag is clicked. It switches the backdrop to "Forest".

```
when green flag clicked
  switch backdrop to [Forest v]
```

Final snippet of Gobo Sprite Code:



Final snippet of Giga Sprite Code:

