

Scratch Primary Lesson 2

The Cat and Bat

Let's Make a Story

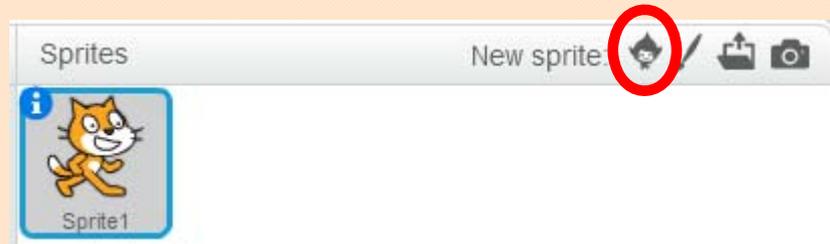
- The cat is enjoying his time in the woods. 
- A bat will appear suddenly and say “boo”! 
- The cat will be scared and run away:



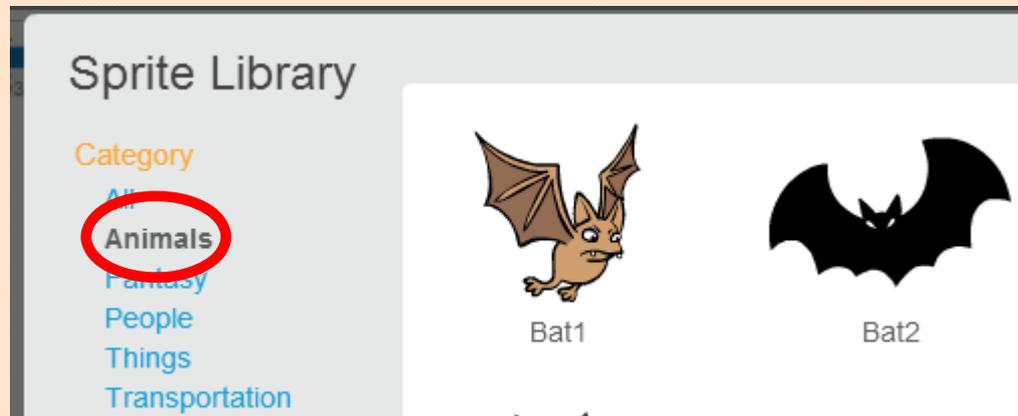
- You can see an example here: <http://scratch.mit.edu/projects/12624773/>

Adding a New Sprite

- Open your project from last time.
 - If you don't have it, use this project:
<http://scratch.mit.edu/projects/12624412/>
- Introduce the bat.
 - Go to 'New Sprite' and choose 'New sprite from library':

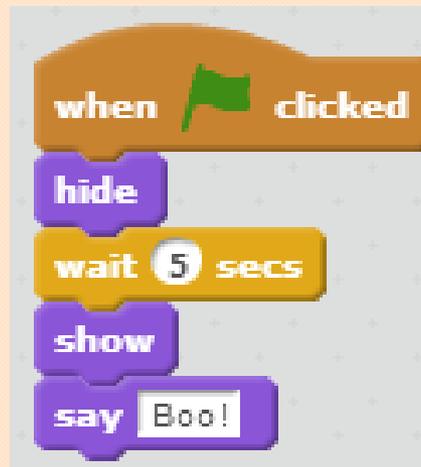


- Select "Animals" on the left and choose "Bat2":



Make the Bat Say 'Boo!'

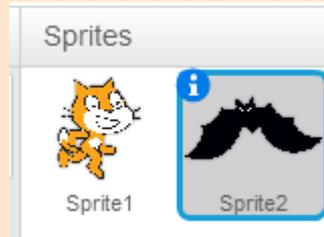
- Go to the 'Looks' section and drag a "say" block onto the script area.
- Fill it in to say 'Boo!'.
- Start the script with the green flag.
- The bat will hide and wait for 5 seconds:



- After 5 seconds the bat will appear and say "Boo!".

Make the Bat Fly

- The bat has two costumes. We can switch these costumes to make the bat flap its wings:

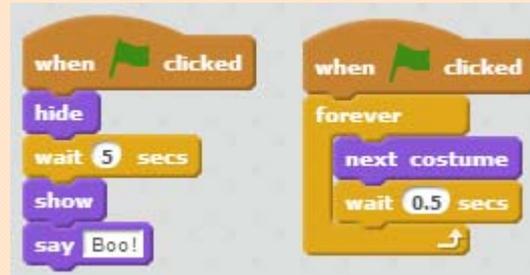


- We can make the animation happen with less script blocks than we did with the cat:

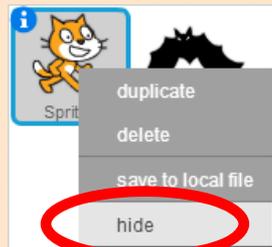


The Bat's Scripts

- The bat has two script blocks. One block to hide and say “Boo!” and another to flap it’s wings:



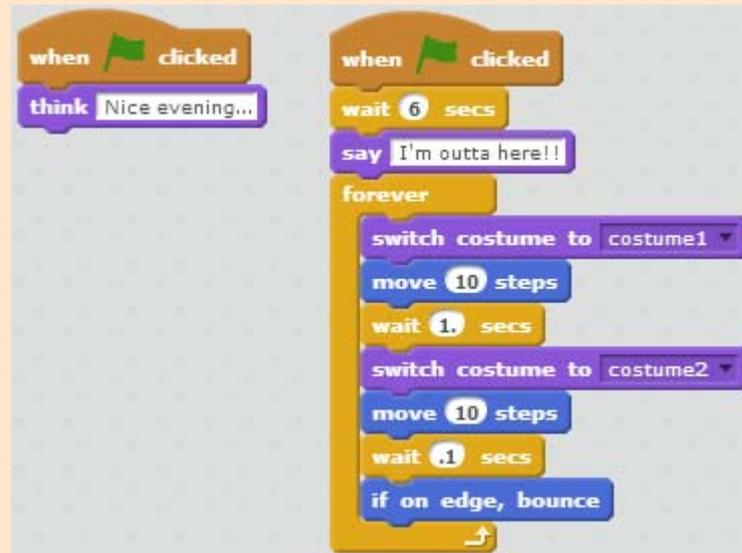
- The bat will now hide for 5 seconds, then suddenly appear and say “Boo!”.
- Test the bat script by clicking on the green flag.
 - You can hide the cat so you just can watch the bat:



- Does the script work as expected?

The Cat's Scripts

- The cat is in the woods enjoying the nice evening until the bat appears and gives him a fright.



- The cat waits for 6 seconds, then starts running.
- Test the cat script by clicking on the green flag.
 - You can hide the bat so you just can watch the cat.
- Does the script work as expected?

Run the Story

- Show the cat, flag.



then click on the green

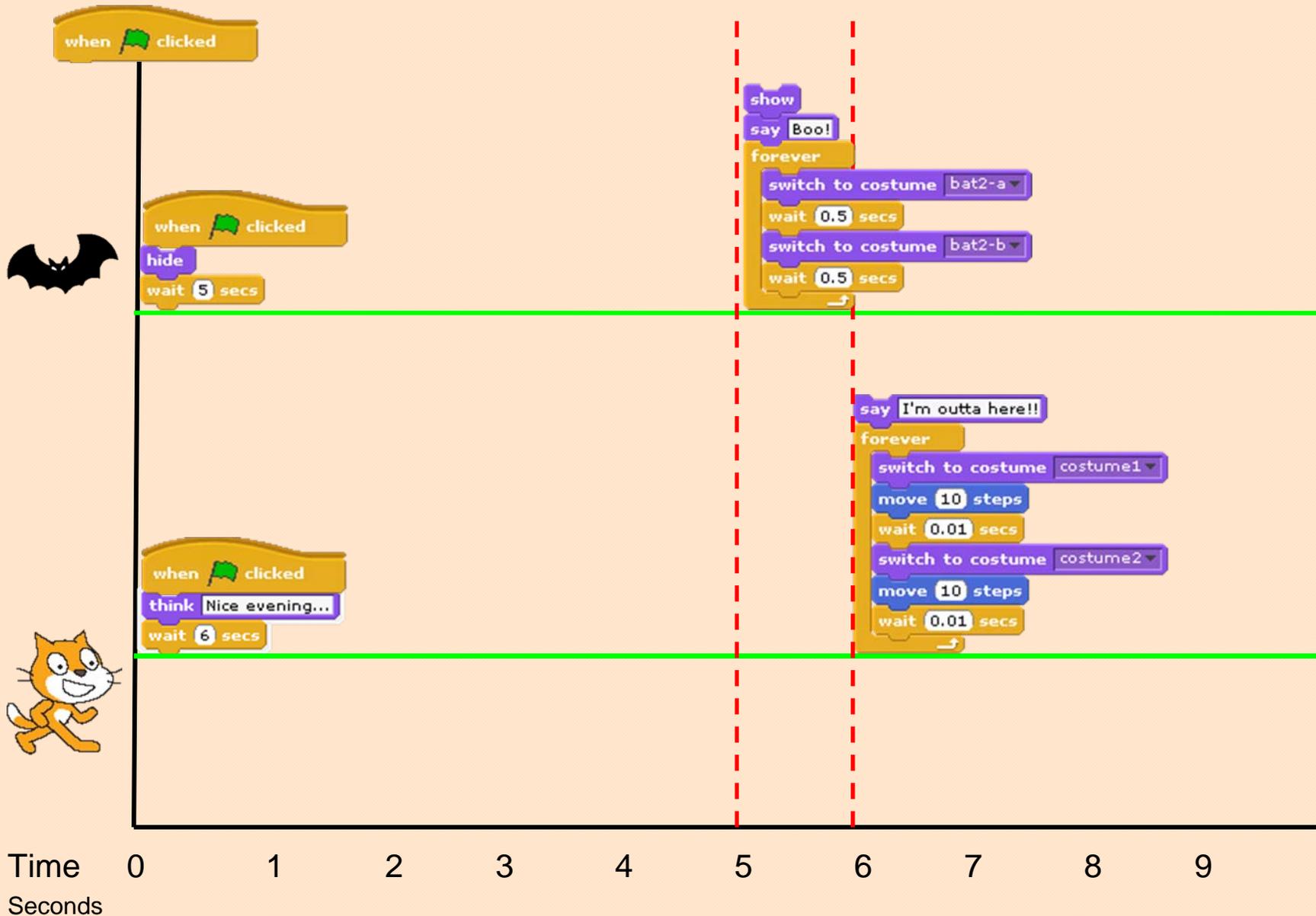


- Does the cat run away exactly when it was scared by the bat?
- You can adjust the wait time so that the cat runs away at the right time.

Sprite Timing

- We have made the cat look like it runs away when it has seen the bat, but this is not really true. The cat is waiting for 5 or 6 seconds and then it starts running away.
- Disconnect the bat's script from the green flag and run the project and see what happens.
- The cat does really does not know that the bat exists at all.
- We want to make the cat react to the bat. Then we don't have to worry about getting the wait time exactly right.

Sprite Time Line



Sprite Timing Problem

- We are trying to guess how many seconds the cat needs to wait before running away. Why is this a problem?
- What would happen if the bat was made to appear when a key was pressed?
A screenshot of Scratch code blocks. The first block is a brown 'when green flag clicked' block with 'space' selected in the dropdown and 'key pressed' in the text field. Below it are two purple 'say' blocks: the first is 'show' and the second is 'say Boo!'. To the right of the code is a black silhouette of a bat with its wings spread.

- Then how will the cat know when the bat has appeared and it is time to run away?

Broadcasting

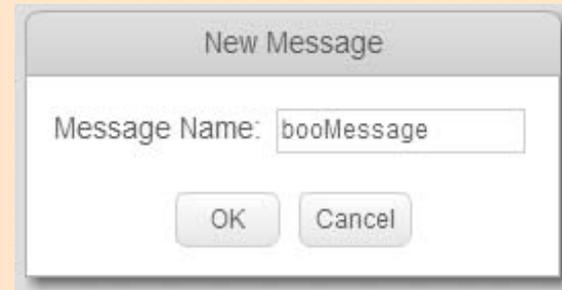
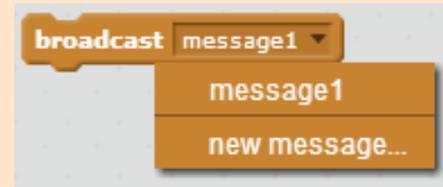
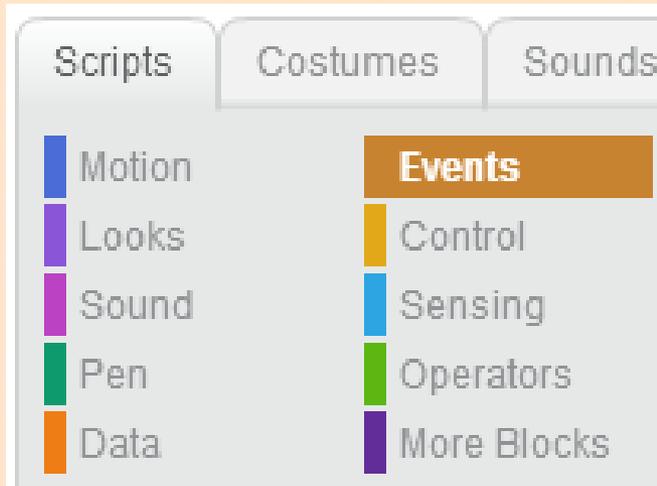
- The cat needs to be able to know the bat has appeared so he can start to run away.



- This is done with broadcasting:
 - The bat must broadcast a message.
 - The cat must receive the broadcast message.

Bat Broadcasting

- Create a new broadcast message.
- Name the message “booMessage”.

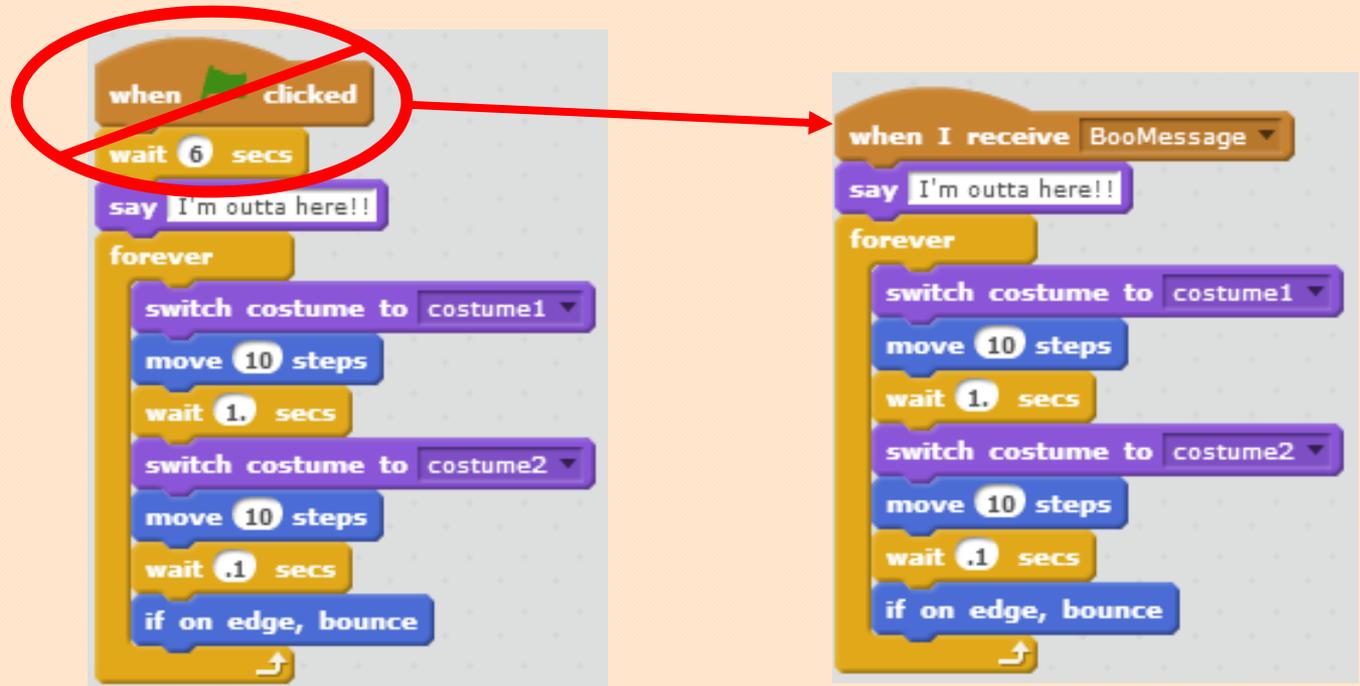


- Add the “broadcast ‘booMessage’” block to the bat’s script:



Cat Receives Broadcast Message

- The cat must receive the broadcast message.
- Instead of waiting for 6 seconds before running, replace this with a “When I receive BooMessage” hat block:



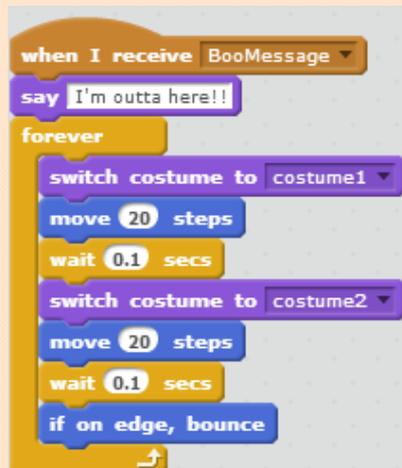
- Now the cat will wait to receive the message from the bat before running away.

Run Your Story!

- Press a key to make the bat appear and say, “Boo”!



- The cat will receive the broadcast and start running:



Congratulations!

- You have made an interactive story
 - You have caused an event to happen by pressing the space key.
- Please save your work for next time:
 - You will be using this project for the next lesson.
 - Make sure your project title has your name in it.
 - In the upper right corner, click on “Save now”:

