

PRESENTED BY: **girlstart**

# deSTEMber

SCIENCE ★ TECHNOLOGY ★ ENGINEERING ★ MATH


## Coding Is Our Scratch

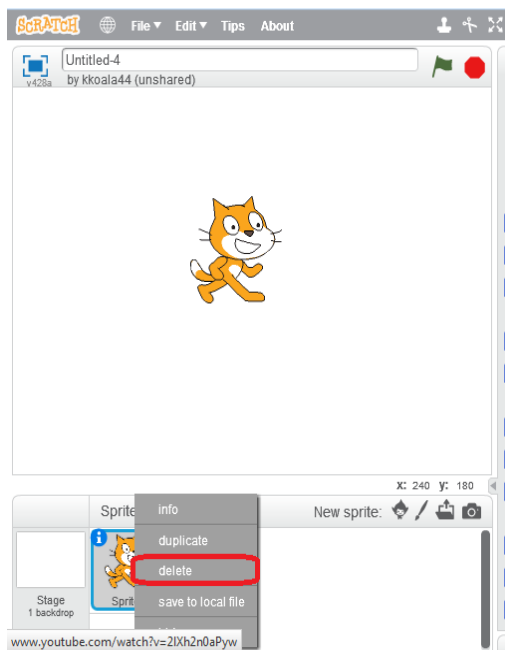
Use the programming power of Scratch to create your own moving mythical creature! Scratch is a programming language that can be used to design your own interactive stories, games, and animations. You can pick a creature from the library or draw your own, then program it to switch between different 'costumes' with the push of a button to watch your creature move!

### TEKS:


6.4B Plan and manage activities to develop a solution, design a computer program, or complete a project.  
FCS.4E Demonstrate coding proficiency in a contemporary programming language by developing solutions that create stories, games, and animations.

### How To:

1. Log in to Scratch and click .
2. Delete the current sprite on the screen by right clicking the picture of it at the bottom and clicking delete.



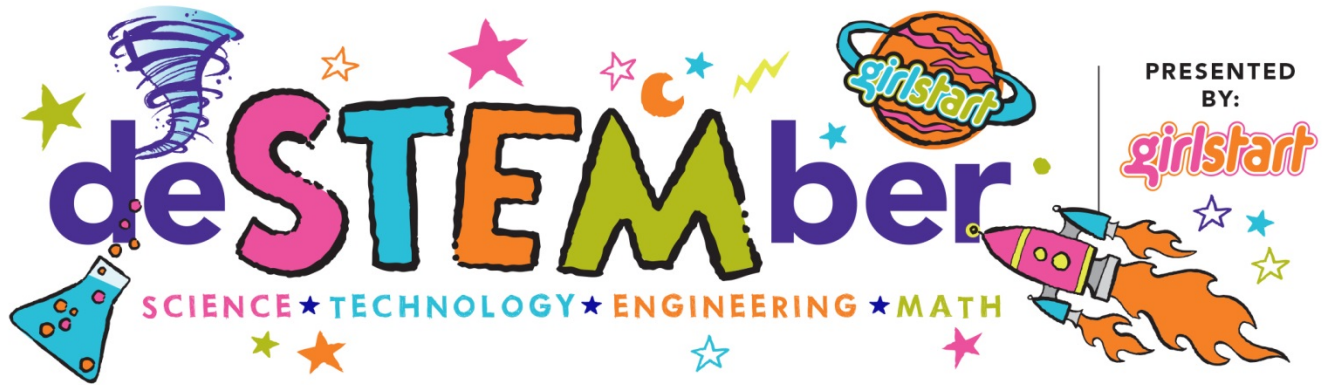
### Materials:



- Computer (with internet access)
- Scratch account (it's really easy to make one if you don't have one and it's FREE: Go to <http://scratch.mit.edu/>, click  and follow the instructions)

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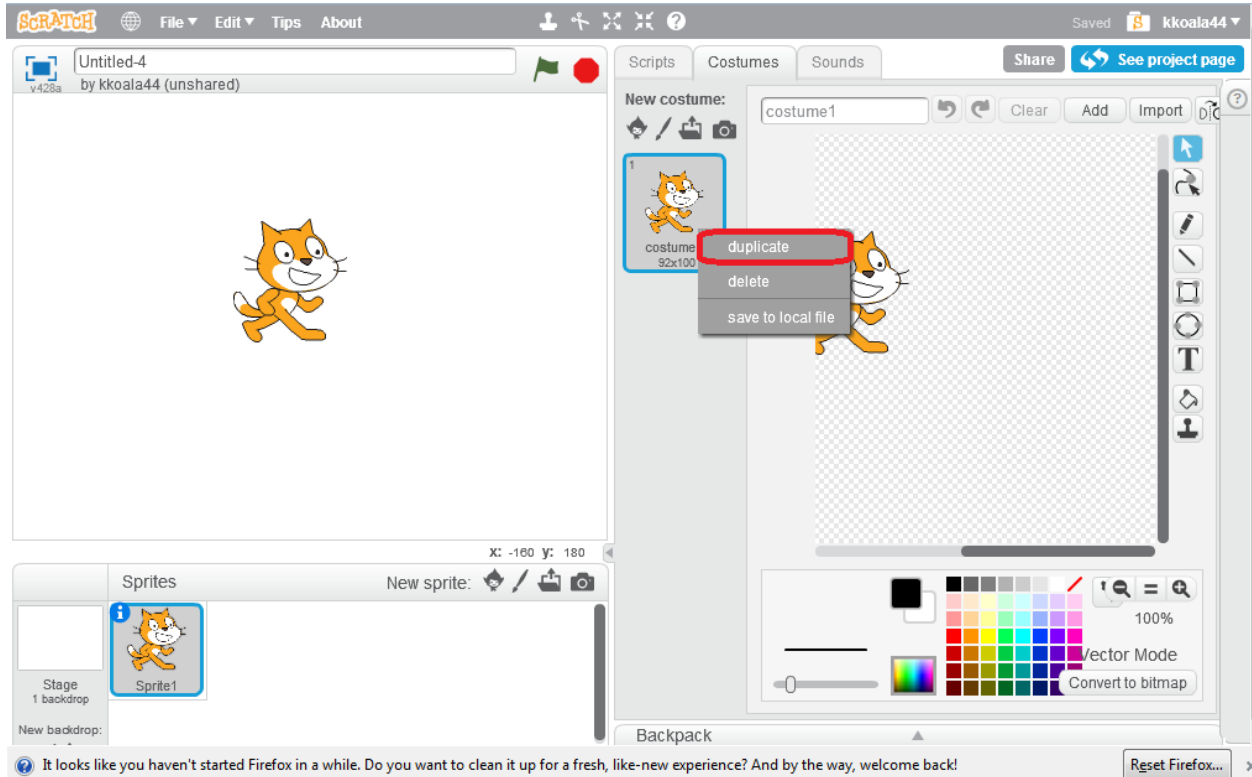


3. You will then want to add a new sprite, which will be your mythical creature at rest. To do this, either choose one from the library by clicking , or draw your own by clicking . Click on the **Costumes** tab to start editing.

\* Note: Each 'costume' for your creature changes its position so that your creature looks like it is moving when you switch costumes.

4. After you have finished your at-rest creature, right click on the picture of it under the 'Costumes' tab and click duplicate.

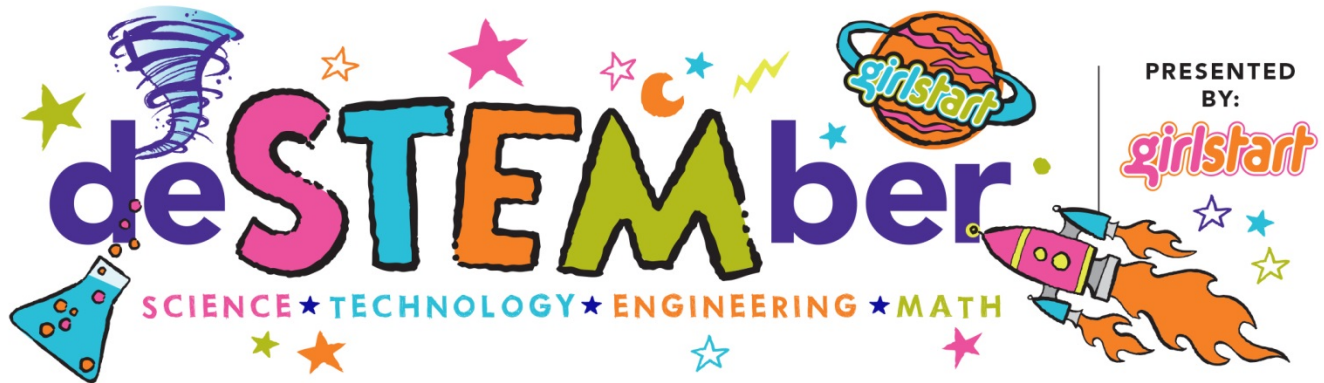
\*Note: sprites from the library may have more than one preset costume. If there are four costumes already and you wish to use those, then skip to Step 8. Otherwise, follow the instructions below (in order).

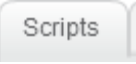



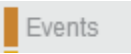
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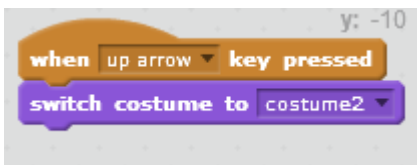


5. Another costume will appear that is exactly like your first one. Change one or more aspects of the costume.
6. Next, click on the first at-rest creature and duplicate it again.
7. Repeat steps 5 and 6 until you have the first at-rest costume, as well as four other different costumes.
8. Now click on the  Scripts tab.



9. This is where we will begin the programming. First grab and drag an  icon under the  Events section.

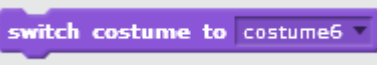
10. Change where it says 'space' to one of the four arrow keys.

11. Then grab, drag, and attach  in the  Looks to the bottom of the first



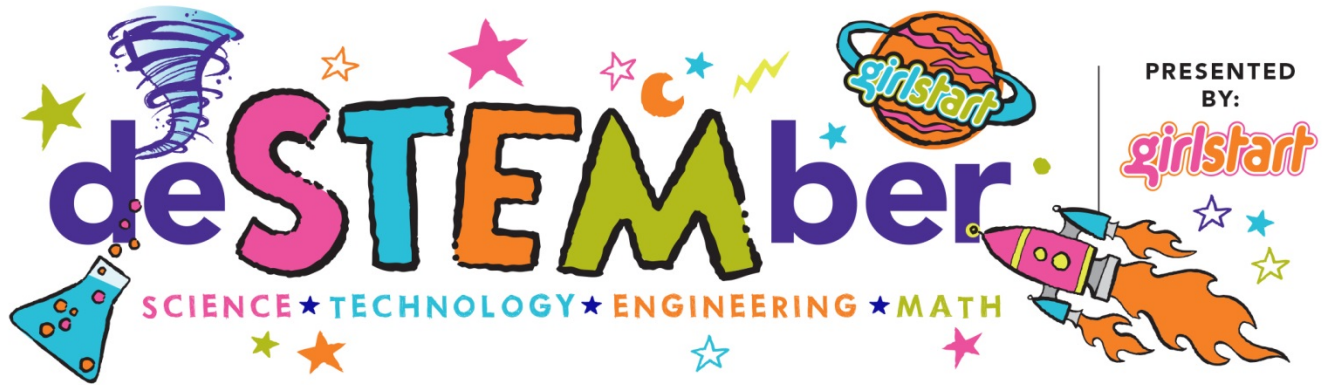
block, as shown.

12. Next, grab and drag a  from the  Control section and place it under the first two blocks. Change the 1 to a 0.5.

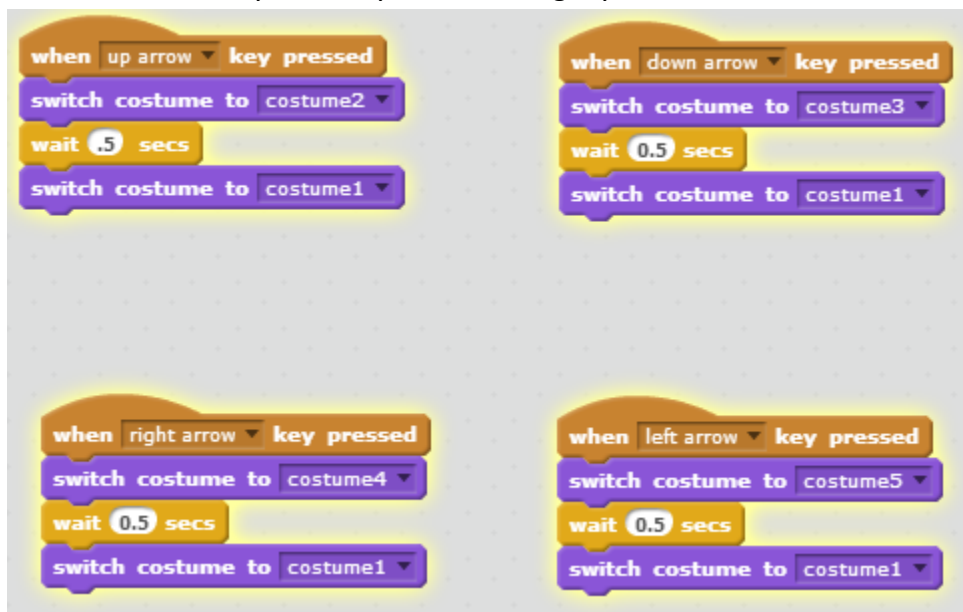
13. Finally, grab and drag another  and place it at the very bottom of your stack of blocks. Be sure to change the costume to the at-rest costume for your creature, otherwise it will not move back. Your block should now look like this:



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14. Repeat steps 9 through 13, switching which arrow key and costume you use each time, until you have a block batch for each arrow key. When you are through, your screen should look something like this:



Congratulations, you have now finished programming your mythical creature. Now press the different arrow keys to switch between costumes and watch your creature move!

### Career Connection:

**Computer programmers** write the instructions for software programs on computers. Once software developers and engineers create design specifications for a particular program, like an app or a game, computer programmers create directions for the program that the computer can understand. They will write code (the computer language), solve problems, debug, test, and rewrite the code until the program works effectively and efficiently. Some of the most common computer languages in existence include C++ and Python.

### Resource:

- <http://scratch.mit.edu/>

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