

MOONHACK 2020

SCRATCH JR

ENGLISH

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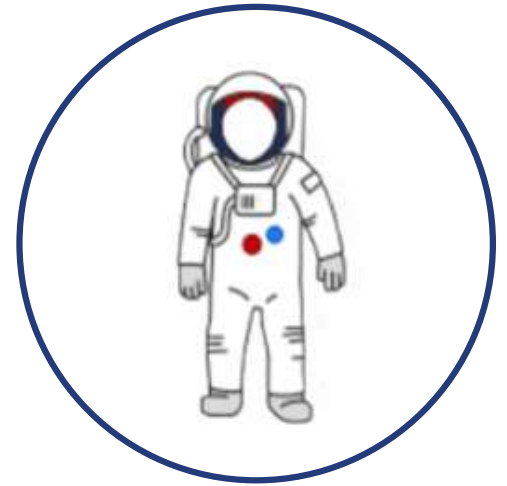


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[MOONHACK.COM](https://moonhack.com)**



Scratch Jr

A lot of people who go into space come back and want to help make the environment better. Let's work together to clean the planet!



INTRODUCTION

What you will make

In this project you will make an animation that will show different people working together to help clean up the planet



What you will learn

- Add drag and drop code to move your sprite
- Add conditional code to your program

What you will need

HARDWARE

An ipad, tablet or chromebook capable of running Scratch Jr

SOFTWARE

Scratch Jr is an app that will need to be downloaded.

Additional notes for educators

[Check out our blog post for this project with tips, curriculum and supporting material at medium.com/@codeclubau](https://medium.com/@codeclubau)



1. ASTRONAUT

First, we want to set the scene of an Astronaut in space looking back at the Earth.

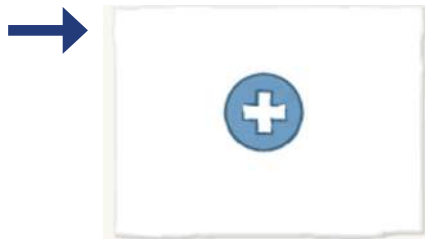
Open the Scratch Jr app. The icon should look like this:



Press the home button:



Press the add project button:



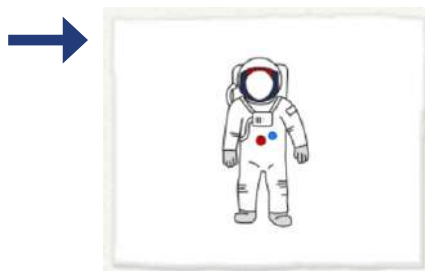
For this project, we don't want the Cat, press and hold him and then press the x to delete him:



Next, we want to add our Astronaut. Press the add sprite button:



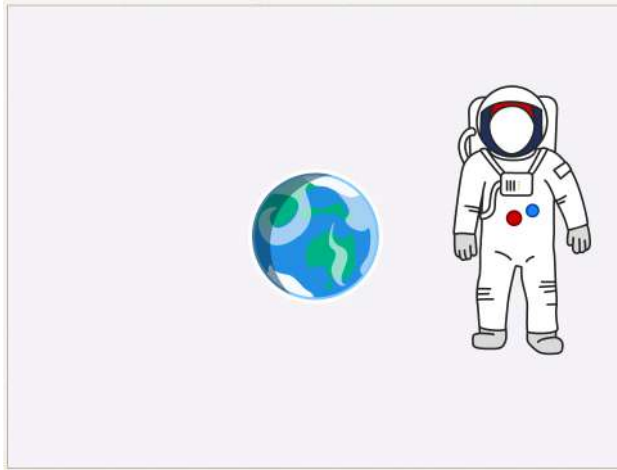
Find and press the Astronaut tile:



Repeat the process to add the Earth:



Click and drag the Astronaut to move her off to the side:



Make sure the Astronaut is selected by pressing the Astronaut sprite. It should be highlighted like this:



Now we can start adding code to our Astronaut to make her speak. Start by dragging the yellow block onto your code canvas:



This will activate when our Astronaut is pressed.

Next, add the pink speech bubble block, making sure it's connected to our yellow block:



Press on where it says "hi", and change the text:



hi



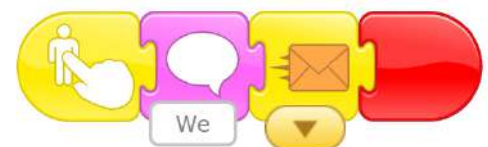
We need to take care of the Earth!

Test your program by pressing on the Astronaut. Does she say, "We need to take care of the Earth!"?

Next, we want to make the Earth respond. We will do this by using a message block. We will send a message when our Astronaut has finished talking to let the Earth know we're ready. Add the yellow block with the orange message..



Finally, we want to tell our Astronaut that we don't need anything else from her. Add the red end block:



2. EARTH

Now that we have the Astronaut talking to the Earth, let's make the Earth respond.

Press the Earth sprite so that we can start adding code to it.



We want our code to start when we get our message from the Astronaut. Add the yellow start when orange message is received block to your code canvas:



Make the Earth reply by adding the purple speech block, and typing in the message:



Test your code by pressing on the Astronaut. Your Astronaut should talk first, and the Earth should reply.

3. DRAW A SPACE BACKGROUND

We want to improve our background, because space is black, not white!



Click the add background button:



Then click the paint your own background button:



Make sure the colour black is selected:



Then click the bucket fill tool:





And press anywhere on the canvas to colour the whole canvas black.



Finally, click the tick button to save your new background:



That's better! Test your project so far by pressing on the Astronaut.

Challenge: Add stars

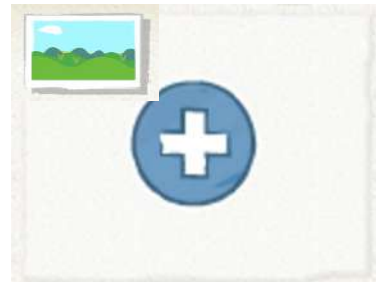
Can you add twinkling stars to your black space backdrop?

Hint: little white circles can look like stars.

4. THE CLEAN-UP

To start working on the clean-up, we need to add our person who is going to do the cleaning up, and the place that she will be cleaning up.

First, we need to add a new stage. You can do that by pressing on the add stage button:



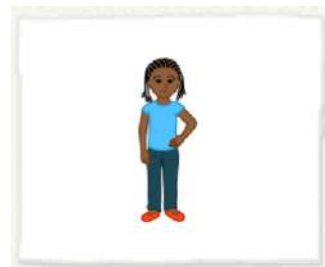
Choose a backdrop by pressing the add backdrop button and then selecting the tile with a backdrop you like:



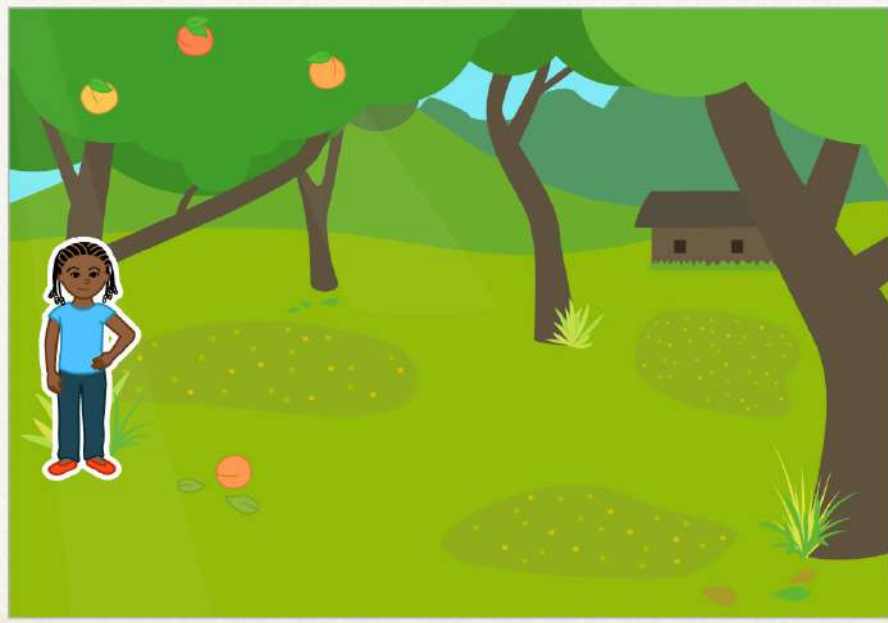
Delete the Cat again by pressing and holding the sprite and pressing the x:



Then add a new sprite of a character you like:



Move your new sprite off to one side of the stage:



5. DRAW A BOTTLE SPRITE

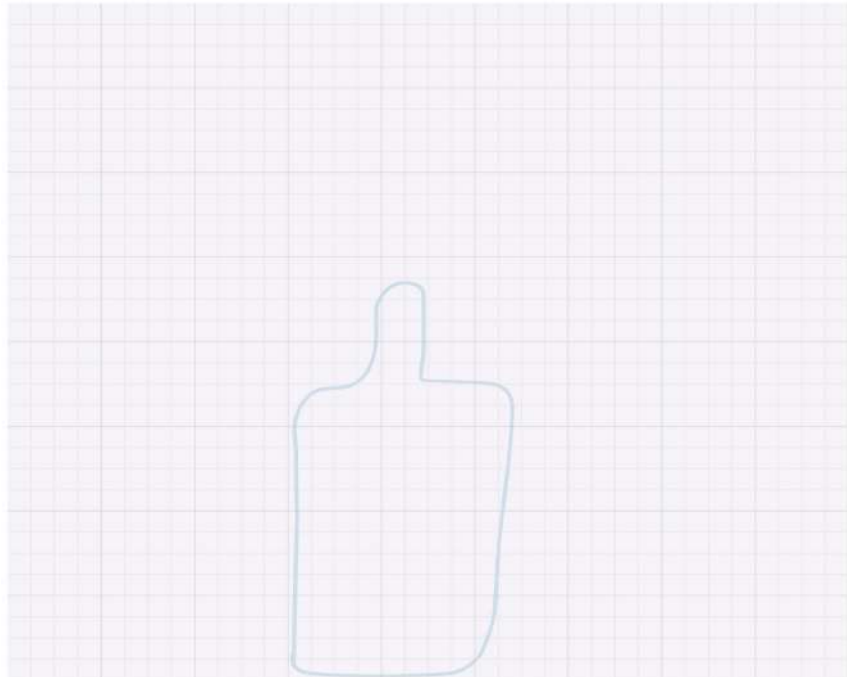
We're going to add some rubbish. There aren't any rubbish sprites, so we need to draw our own.

Click the new sprite button and then the draw button:

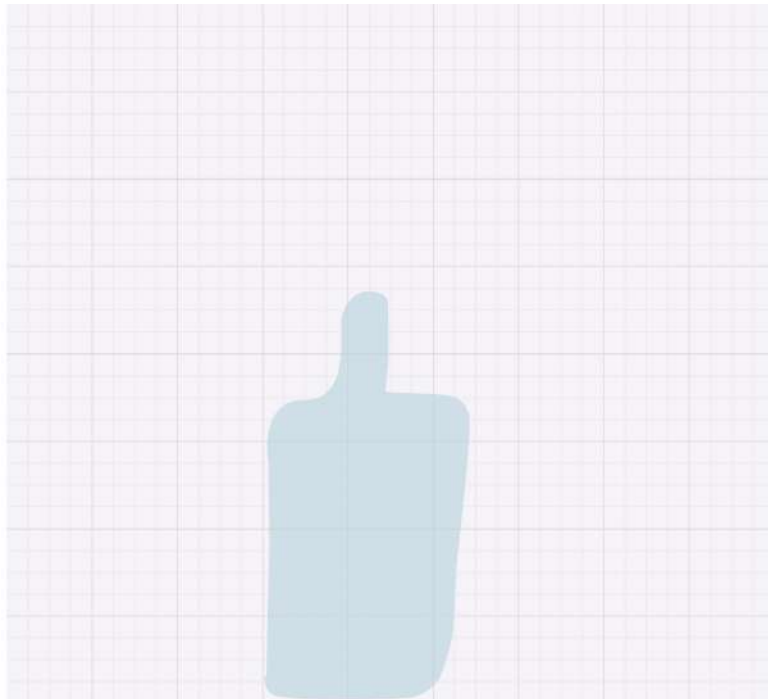




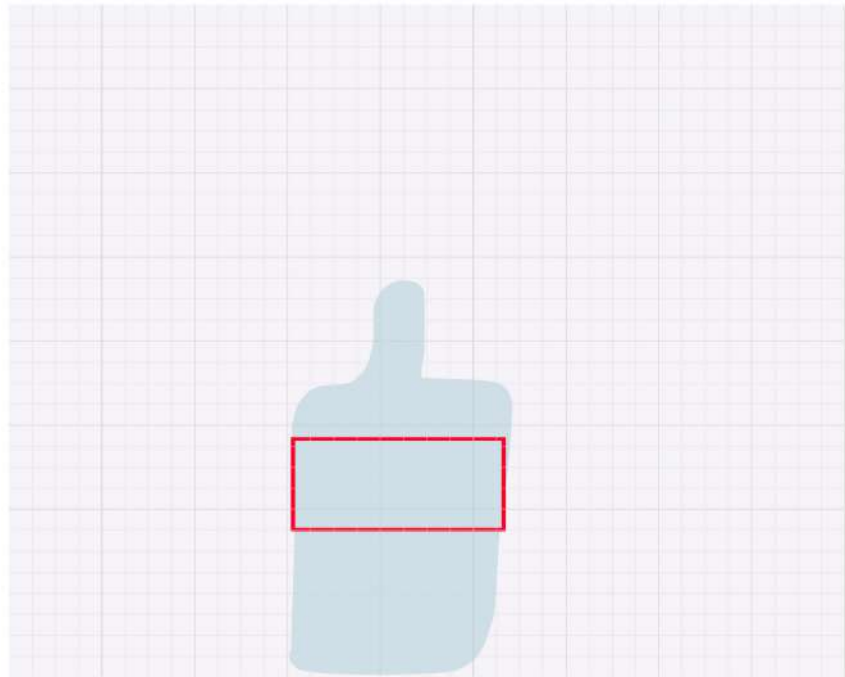
With our line drawing tool and light grey selected, let's draw a bottle. Make sure the start and the end of your line is touching!



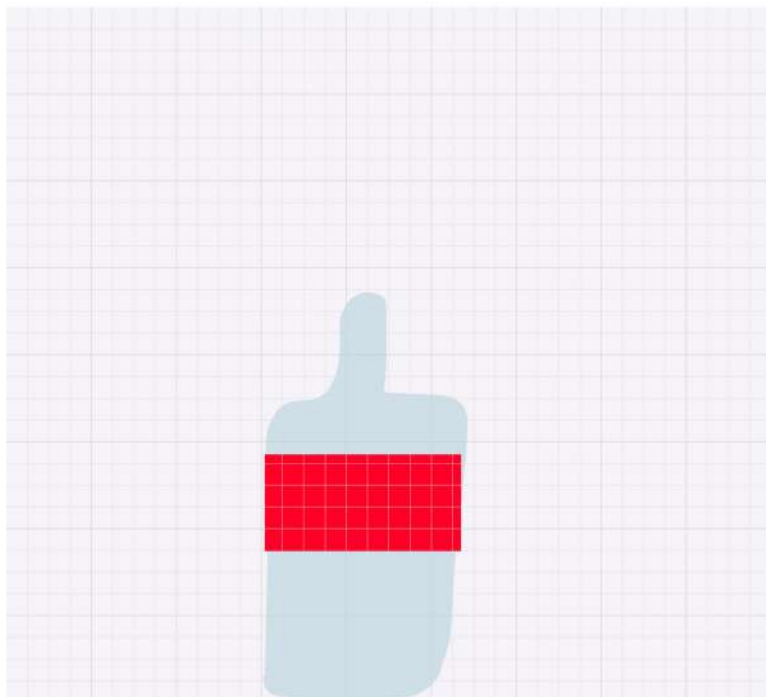
Next, select the bucket fill tool, and click inside the bottle.



- Let's draw a red rectangle on our bottle, using the rectangle tool.



- Fill the rectangle using the bucket fill tool.





When you're happy with your bottle, press the accept button.



When you're happy with your bottle, press the accept button.



6. PICK UP THE RUBBISH

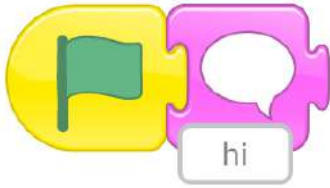
Now we can finally code our character to pick up the bottle.



Click on the sprite for your character, and we can start adding code, starting with the yellow when green flag is clicked block.

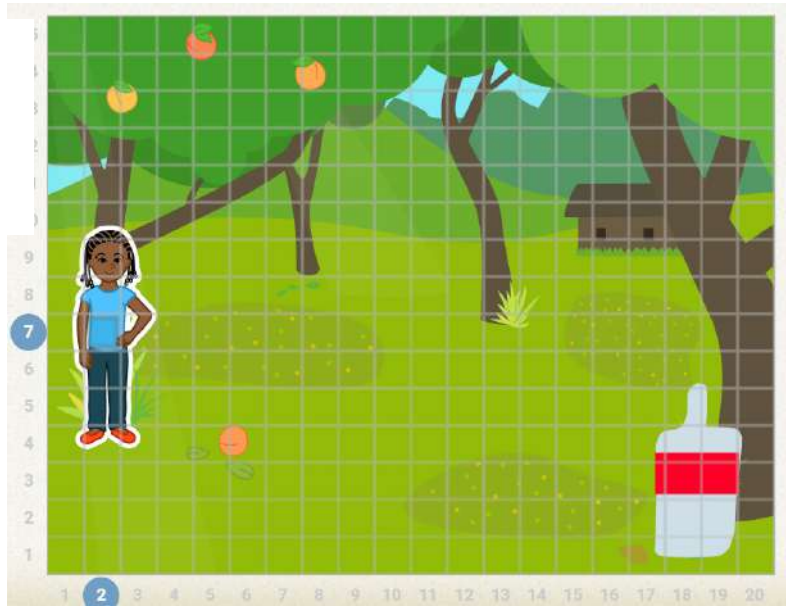


We want her to talk to share her enthusiasm for picking up litter.



I can pick up this bottle.

Next, we want to make our character move towards the bottle. Press the Grid button to see how many steps you need to take to get to the bottle.



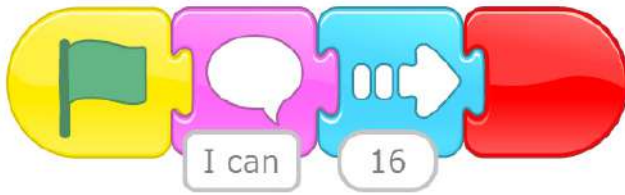
Count the number of steps you need to move to get to the bottle, then add a move forward block and put in that number:



Turn off the grid:



Now, let's add an end block to tell our character that we're finished with her.



Test out your code by pressing the green flag. Your character should walk towards the bottle.

Next, when your character reaches the bottle, she will pick it up. Click on the bottle sprite and add code for when it interacts with our character.

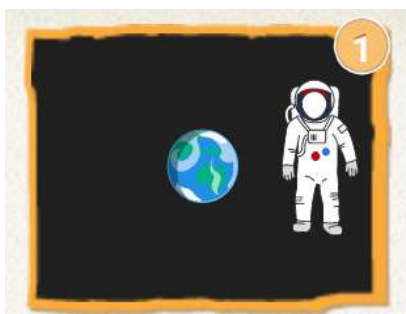


When your character reaches the bottle, we want the bottle to disappear with a nice satisfying popping sound.



Test your code again. Your character should walk to the bottle, and the bottle should disappear.

Finally, we want our animation to be seamless. We don't want to have to click between our stages. Go back to the first stage:





Make sure the earth sprite is selected:



Add the special red block to the end of your code. This block changes the stage.



Test your code by clicking on the Astronaut. It should automatically move through the whole animation.

Challenge: Add another stage

Can you get someone else to pick up litter? Try adding a new stage with a different backdrop, and try drawing a different piece of rubbish (maybe try a straw or a chip packet).

Hint: If you get lost, you can follow steps 4-6, but using different sprites and a different backdrop.

Congratulations you're a
Moonhack changemaker!

Don't forget to talk to an adult
about registering your
participation at
moonhack.com

