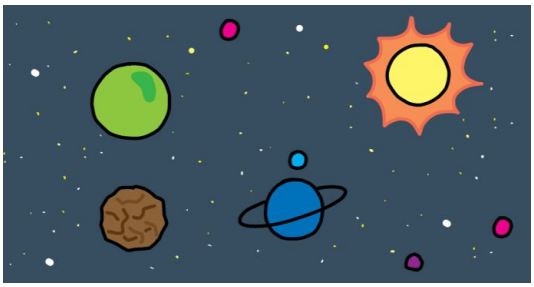
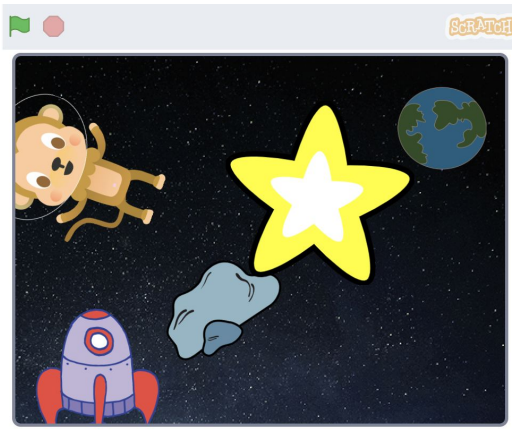
Lost-in-space



Introduction

What you will make

In this project you will learn to create a fun animation with lots of cool things!



What you will need

- Scratch 3

1. Animating a rocketship

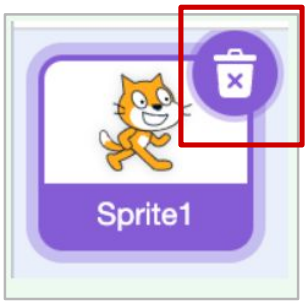
Your first task is to create a rocketship that flies towards the Earth! To do this, you will need two sprites: a rocketship and the Earth.

Step 1

Click here to open a new scratch project.

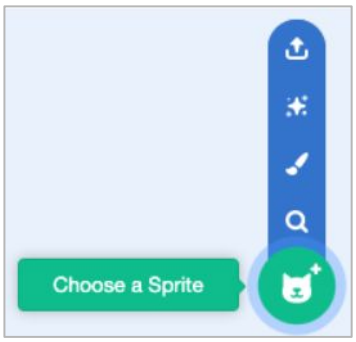
Step 2

Delete the cat sprite by clicking on the bin icon over the sprite thumbnail.



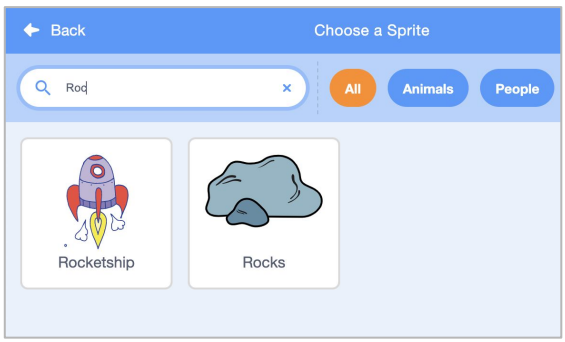
Step 3

Click on **Choose a Sprite** to add 'rocketship' and 'Earth' sprites.



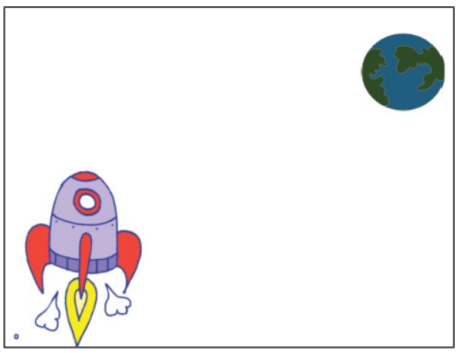
Step 4

Search and select the sprites.



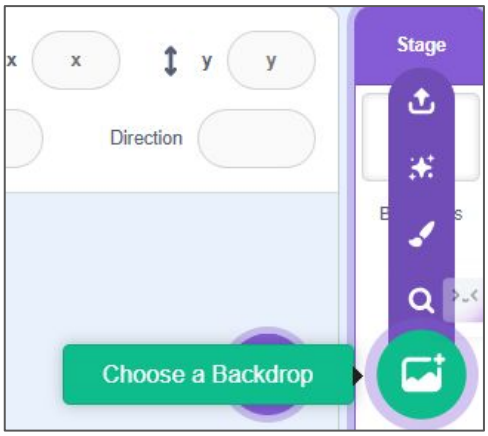
Step 5

Place them on the stage.



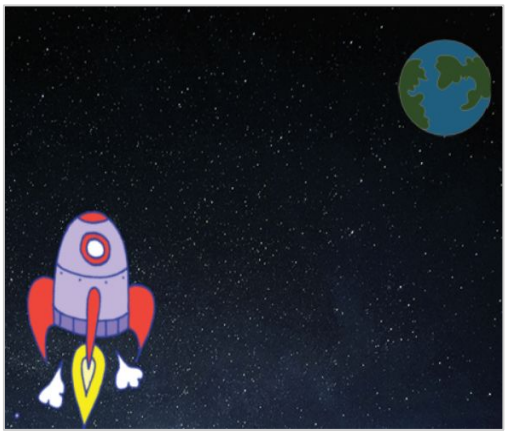
Step 6

Click **Choose a Backdrop**.



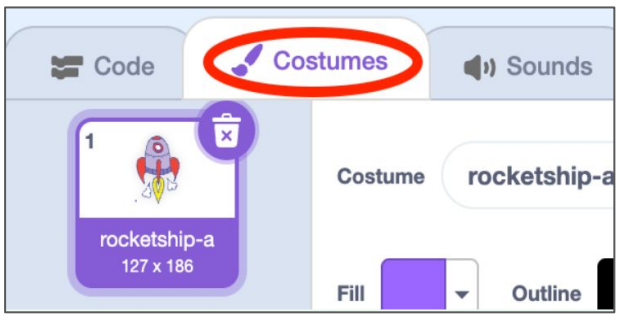
Step 7

Select the 'Stars' backdrop and add it to your Stage.



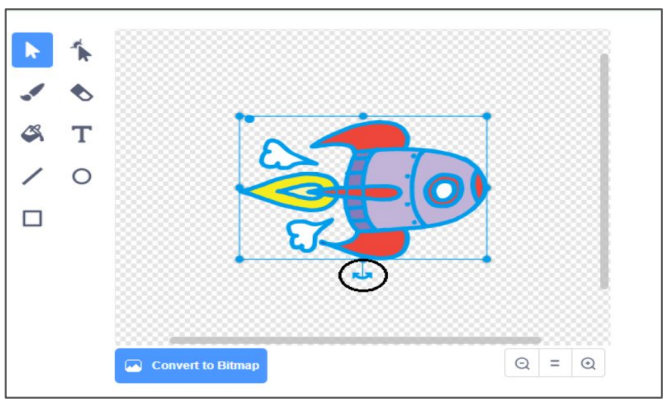
Step 8

Click on your rocketship sprite, and click on the **Costumes** tab.



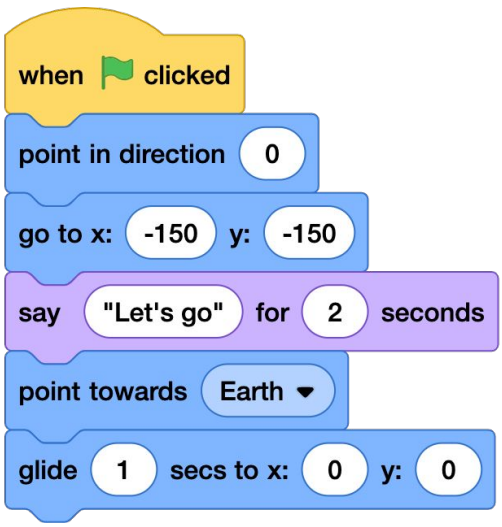
Step 9

Use the **arrow** tool to click and drag a box around the whole rocketship image. Then click on the circular **rotate** handle, and rotate the image until it is on its side.



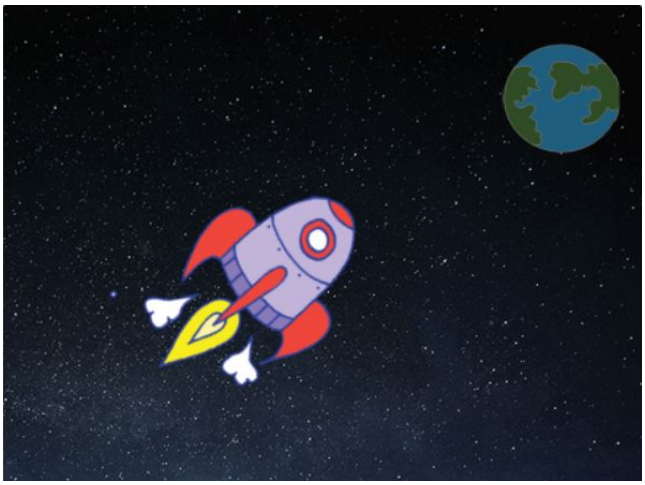
Step 10

Add this code to your rocketship sprite and change the numbers in the code blocks you've added so that the code is exactly the same as above.



Test your code

If you click the green flag, you should see the rocketship speak, turn, and glide towards the centre of the stage.

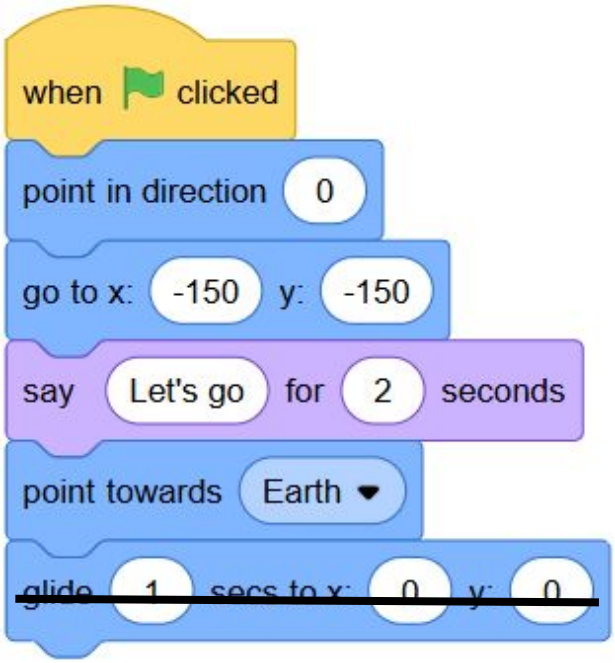


2. Animation using loops

Another way to animate the rocketship is to tell it to move a small amount, many times.

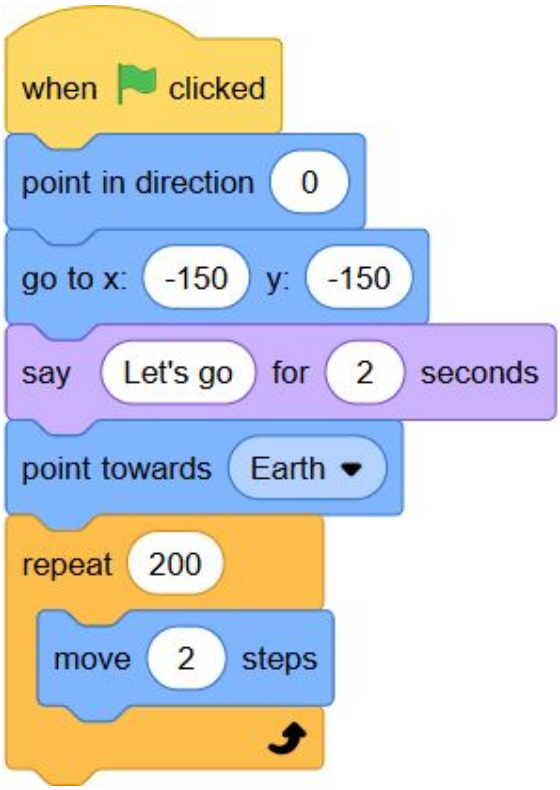
Step 1

Remove the glide block from your code.



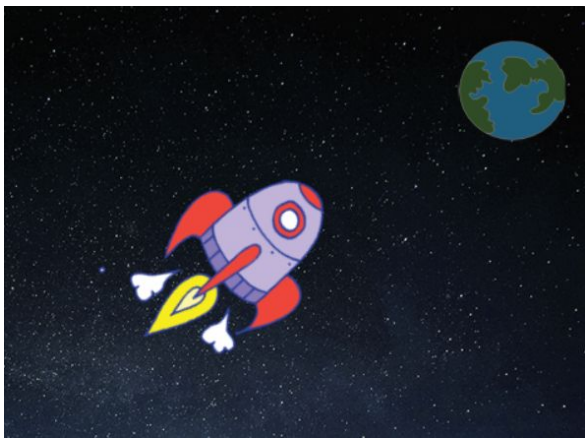
Step 2

Now use a repeat block and a move to move your rocketship towards the Earth:



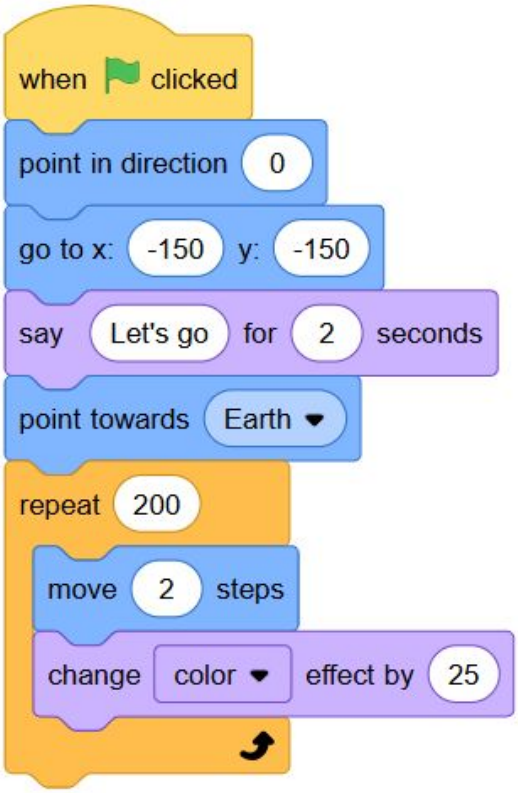
Step 3
Test and save your code.

Your rocketship should move towards the Earth exactly as before, but this time it uses a repeat block.



Step 4

Next add code to your rocketship sprite so that the rocketship changes colour as it moves towards Earth:

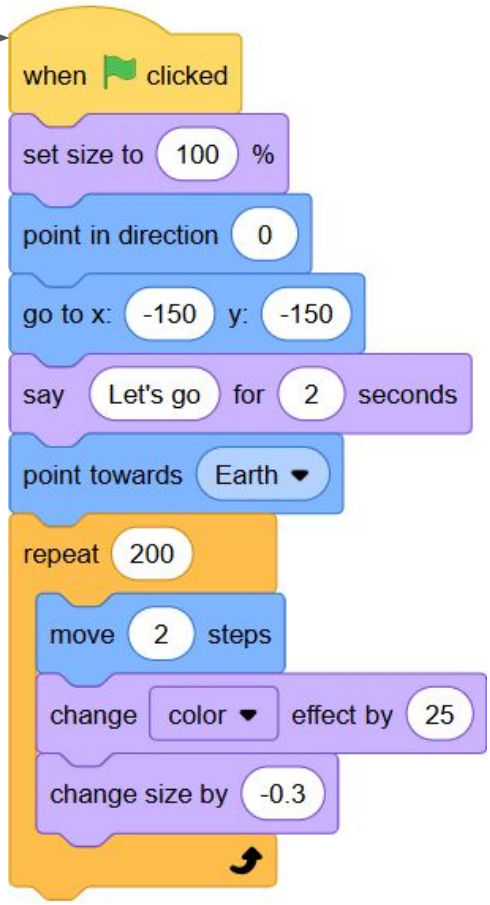


Step 5: Test and save your code.

Step 6

Make your rocketship get smaller as it moves towards Earth:

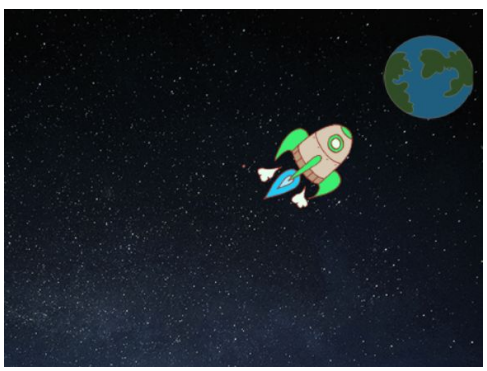
Your rocketship should start at 100% size, and then change size by a small amount each time it moves.



Step 7

Test and save your code.

Your rocketship should now get smaller as it moves. Test your rocketship a **second time**. Is it the right size when it starts?

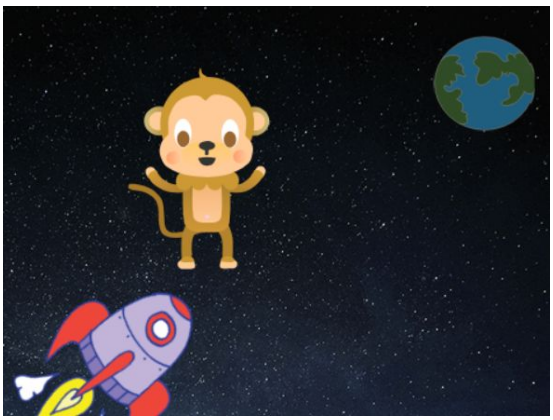


3. Floating monkey

Now you will add a monkey who's lost in space to your animation!

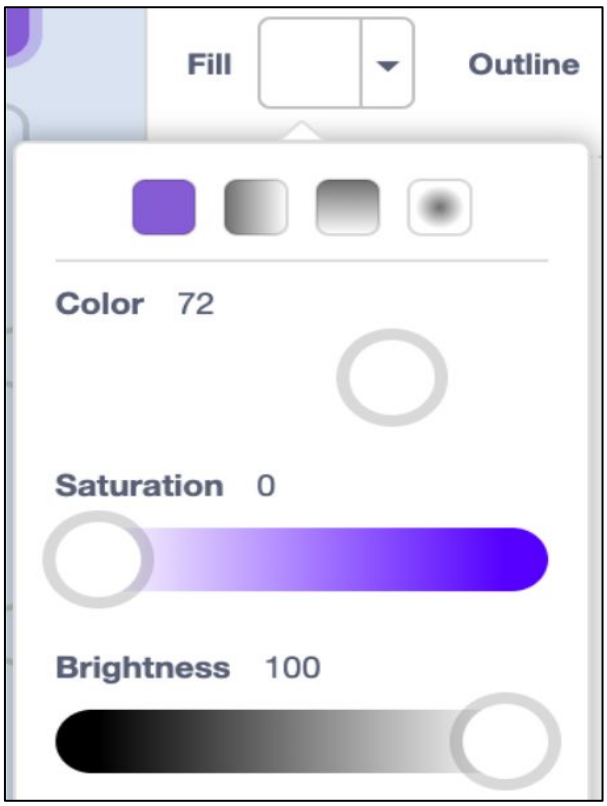
Step 1

Start by adding the 'monkey' sprite from the library. Click on your new monkey sprite and then click on Costumes so that you can edit how the monkey looks.



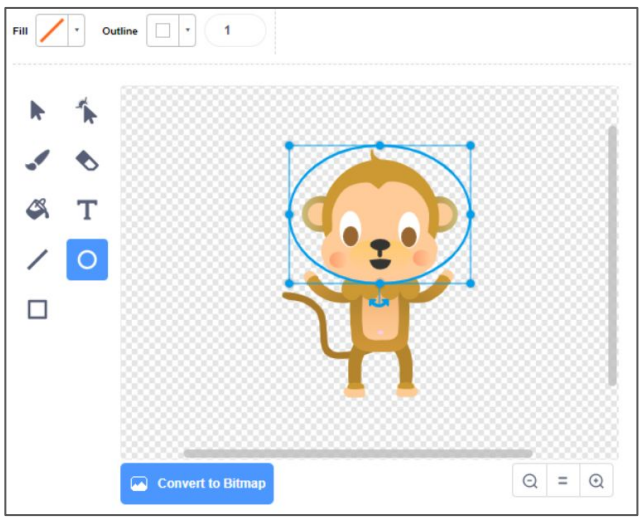
Step 2

Set the fill to be transparent by selecting the red line. For the outline, set a white colour by moving the Saturation slider to **0** and the Brightness slider to **100.**



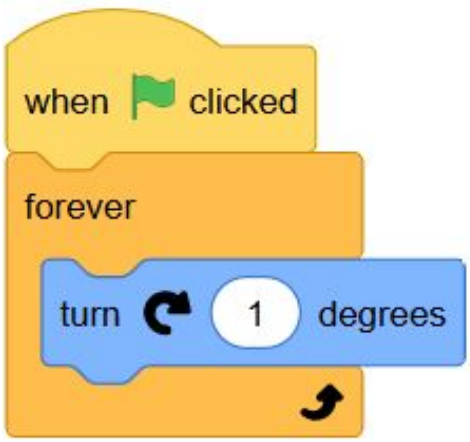
Step 3

Click on the circle tool and then use it to draw a white space helmet around the monkey's head.



Step 4

Add code to your monkey sprite so that it spins slowly in a circle forever:



Step 5

Test and save your project.

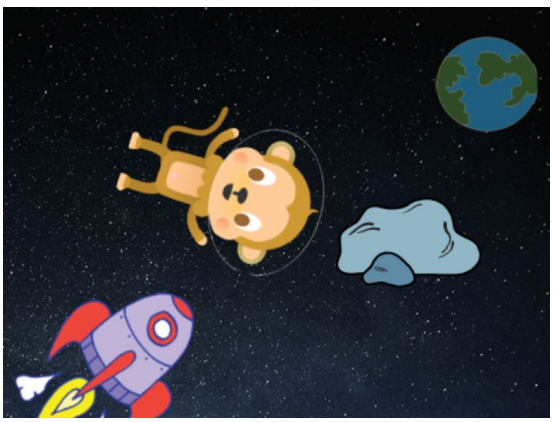
Click on the red stop button to end this animation, as it runs forever!

4. Bouncing asteroid

Now you will add a floating space rock to your animation.

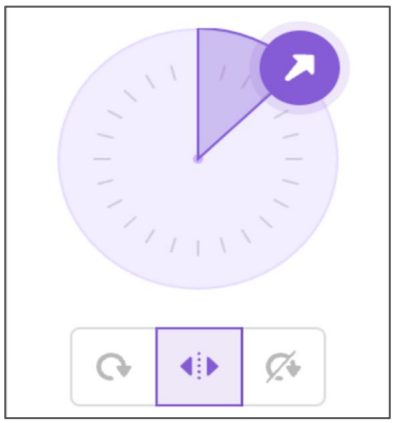
Step 1

Add a 'rock' sprite to your animation.



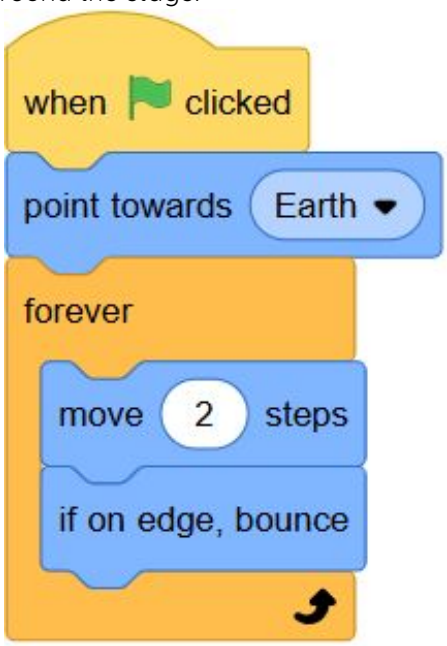
Step 2

Stop the asteroid from turning by clicking on the **Direction** value beneath the stage and selecting **Left/Right:**



Step 3

Add code for your rock sprite so that the rock bounces around the stage:



Step 4

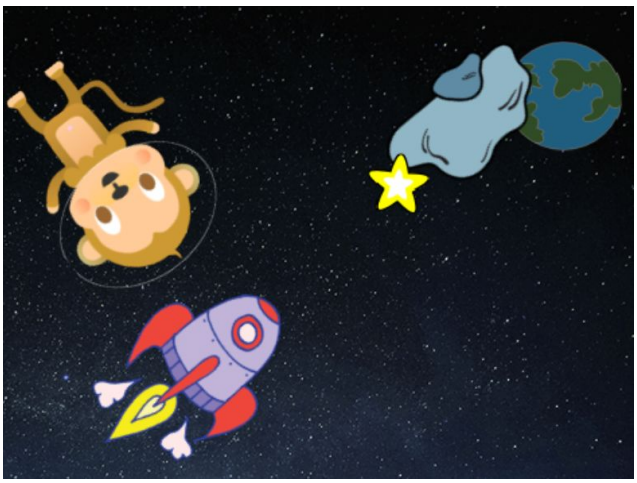
Test your code.

Click the green flag to see the asteroid bounce around the stage.

5. Shining star

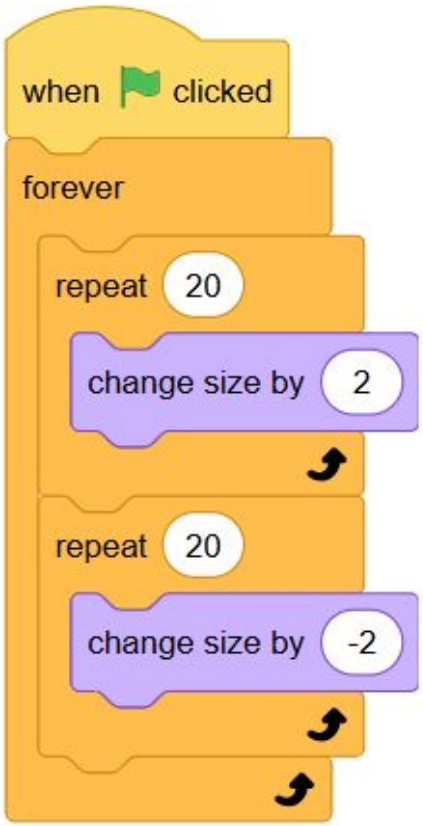
Step 1

Now you will combine loops to make a shining star.
Add a 'star' sprite to your stage.



Step 2

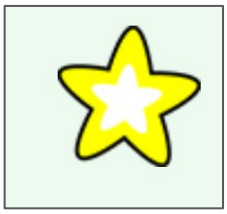
Add code to your star sprite to make the star repeatedly grow and shrink.



Step 3

Test your code.

Click the green flag to watch your star twinkle.



6. Challenge

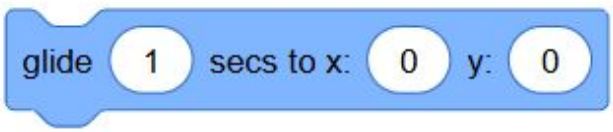
Make your project even cooler! You could:

Change the numbers in your animation code so that the rocketship moves until it touches the Earth.

Change the numbers in your animation code so that the rocketship moves more slowly towards the Earth.

Upgraded rocketship

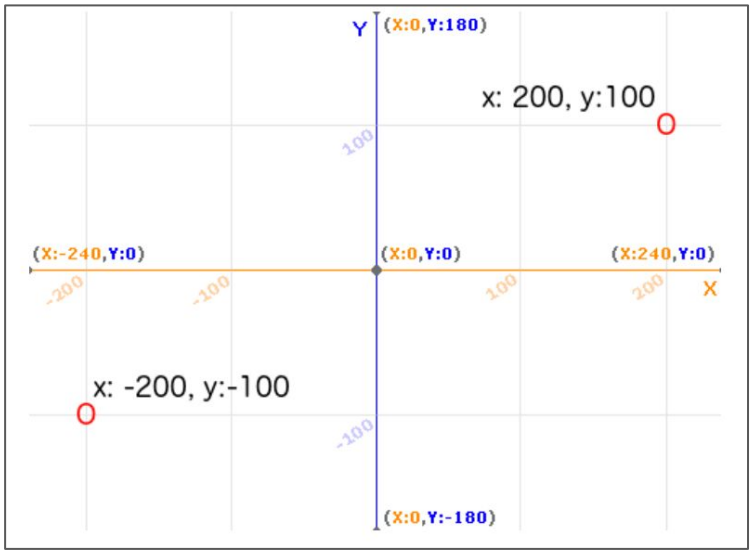
You'll need to change the numbers in this block:



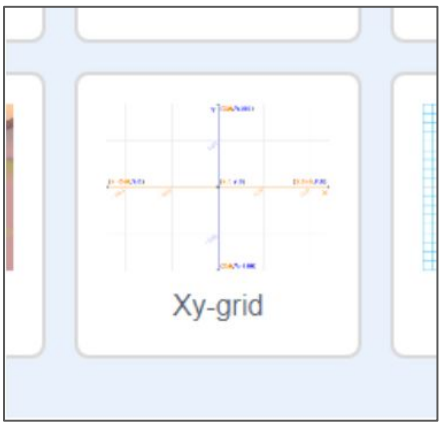
Scratch coordinates

- In Scratch, the coordinates **x:0, y:0** mark the central position on the Stage.

A position like **x:-200, y:-100** is towards the bottom left on the Stage, and a position like **x:200, y:100** is near the top right.



- You can see this for yourself by adding the Xy-grid backdrop to your project.



Use what you've learned in this project to make your own animation. It can be anything you like, but try to make your animation match the background you choose. Here are some examples: