

Space Lander

Can you fight against gravity to land your
space craft?

By Phil Bagge

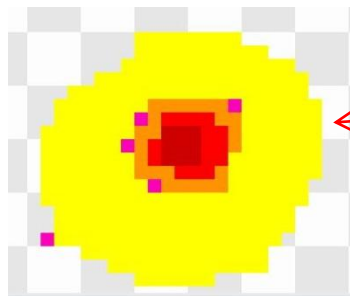
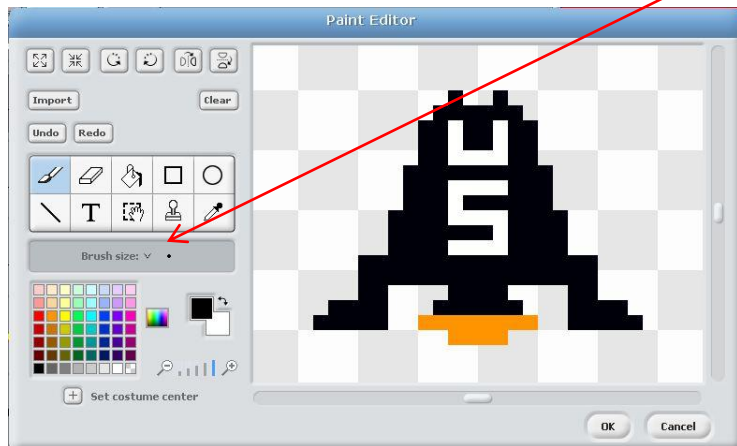
@baggiepr

<http://code-it.co.uk>

Programming Concepts

- Conditional loops
 - If something happens
 - If something is not happening
- Passing code from one function to another using broadcast
- Mapping movement to keys
- Moving sprites using x & y coordinates

Drawing multiple lander costumes in Scratch



Set this so the
lander doesn't
twist



- Delete cat sprite by right clicking and selecting delete
- Left click on star icon (Paint new sprite)
- Zoom right in (+ on zoom)
- Set brush size to the smallest
- Draw a lander without a flame
- Click OK to finish
- Click on costumes
- Rename costume1 to lander no flame
- Press copy button
- Edit lander2 to have a flame
- Repeat for lander3 with a different colour flame
- Press copy button and create exploded lander, make sure the explosion goes directly over the copied lander
- You should now have four landers, three whole ones, two with different flame colours and an exploded one

Making the lander look like it is firing its main rocket when the up arrow is clicked



Change the key to the up arrow



Everything that goes inside here loops around forever if the condition is met



Two of these



Change both of these to the landers with flames

Two of these



Firing the main rocket (moving up) if the up arrow is pressed



Change the space key to up arrow



Click on the triangle next to 90 and select (0) Up

Everything that goes inside here loops around forever if the condition is met



Double click on the number and type in 1

Firing the right steering rocket (moving right) if the right arrow is pressed



Change the space key to right arrow



Leave the direction at 90 degrees

Everything that goes inside here loops around forever if the condition is met



Double click on the number and type in 1

Firing the left steering rocket (moving left) if the left arrow is pressed



Change the space key to left arrow



Click on the triangle and change the direction to (-90) Left

Everything that goes inside here loops around forever if the condition is met



Double click on the number and type in 1

Simulating gravity pulling the lander towards the surface



Everything that goes inside here loops around forever if the condition is met

Forever if not key up arrow pressed move 1 step down



Change the space key to up arrow



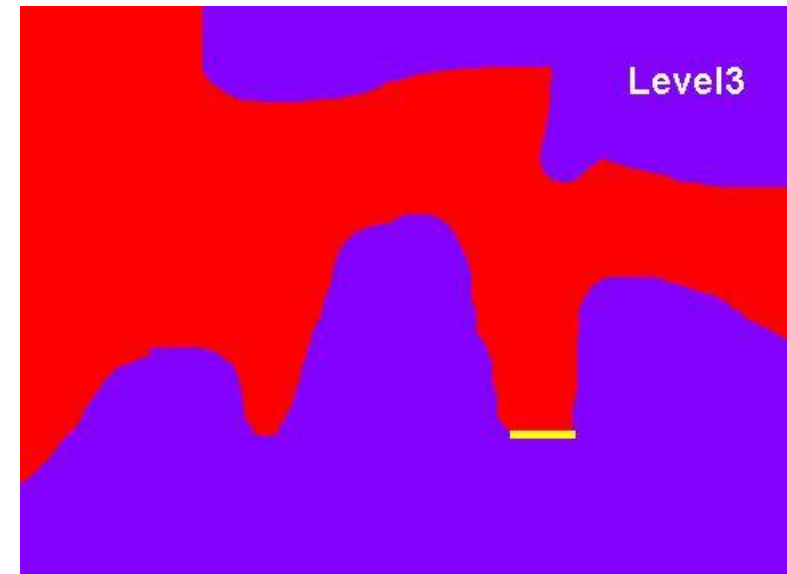
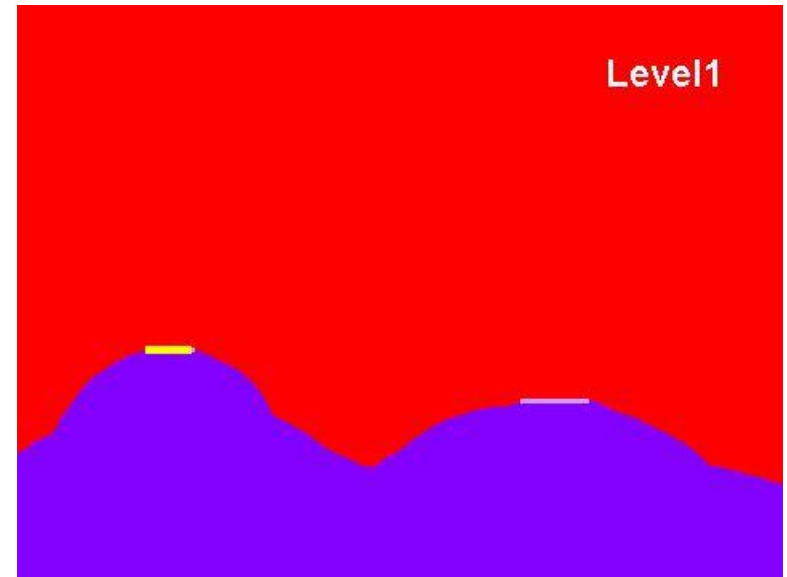
Click on the triangle and change the direction to (180) Down



Double click on the number and type in 1 or less than 1

Drawing background planet landing sites

- Click on stage
- Select the Backgrounds tab
- Rename background1 to level1
- Click edit
- Zoom Out (- on zoom)
- Draw two colour planet surface
- Make use you use only three colours (Planet, Sky and landing sites)
- Click ok to save the level
- Click copy and edit the next level
- Make sure there is always sky in the top left corner



Moving to a new level when the lander has landed on the pad

Part 1

Forever if the colour of the lander touches the landing pad colour
broadcast a

When you click on the coloured squares you can choose a colour by finding it on your game and clicking on it.



Click on the triangle and select new type in an a



Colour of lander

Landing pad colour

Moving to a new level when the lander has landed on the landing pad
part 2

This code must be created in the stage scripts tab not the lander sprite scripts



Click on the triangle and select a

When receives broadcast a change the background to a new level



Starting the game with level 1

This code must be created in the stage scripts tab not the lander sprite scripts



Left click on the triangle and select your first level

When green flag is clicked go to level 1 background

Returning the
lander to the start
position when
program starts



Left click and select
lander no flame



Position the cursor in the top left
of the screen. Note what x: and Y:
positions are shown. Type these
into the block above

When the green flag is
clicked switch to costume
lander no flame and then
return lander to the start
position

A small grey Scratch block with the text "x: -89 y: -243". A red arrow points from the text below to the block.

x: -89 y: -243

Ending the game when the lander crashes into the planet

When you click on the coloured squares you can choose a colour by finding it on your game and clicking on it.

Colour of lander

Planet Colour

Forever if the colour of the lander touches the colour of the planet show the crash lander sprite and end the game



Select your crash costume

Return the lander to the start position when it has landed successfully

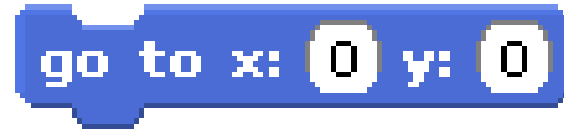
Forever if code block receives broadcast **a** then return lander to the start position with the no flame costume



Left click and select a



Left click and select lander no flame



Position the cursor in the top left of the screen. Note what x: and Y: positions are shown. Type these into the block above

x: -89 y: -243