Boat Race Code

Setting Up

Access the starter code from here:

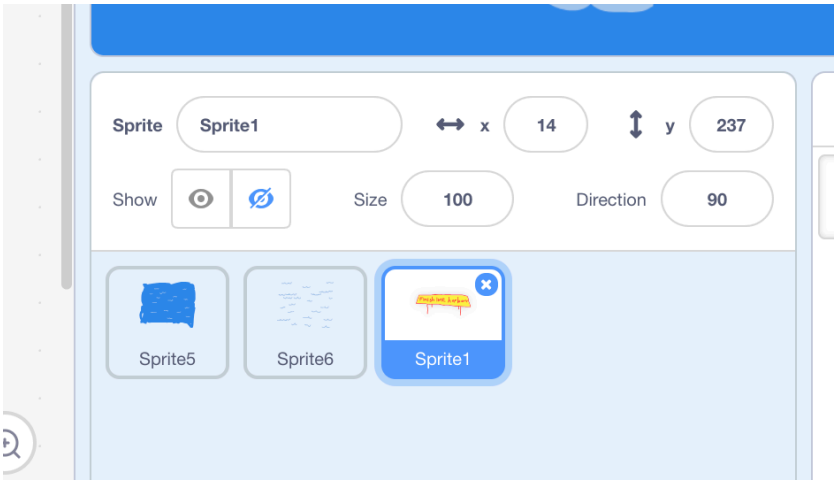
Click **Remix**

Now you can add your own code the the starter project.

Note to teachers: this project builds on the Scratch Sushi Card exercise “Catch Game”

START

The starter project already has three sprites. You can see them here:



There are two sprites (Sprite5 and Sprite6 that look like water. There is a ‘goal’ sprite called Sprite1 that will appear at the end of the game.

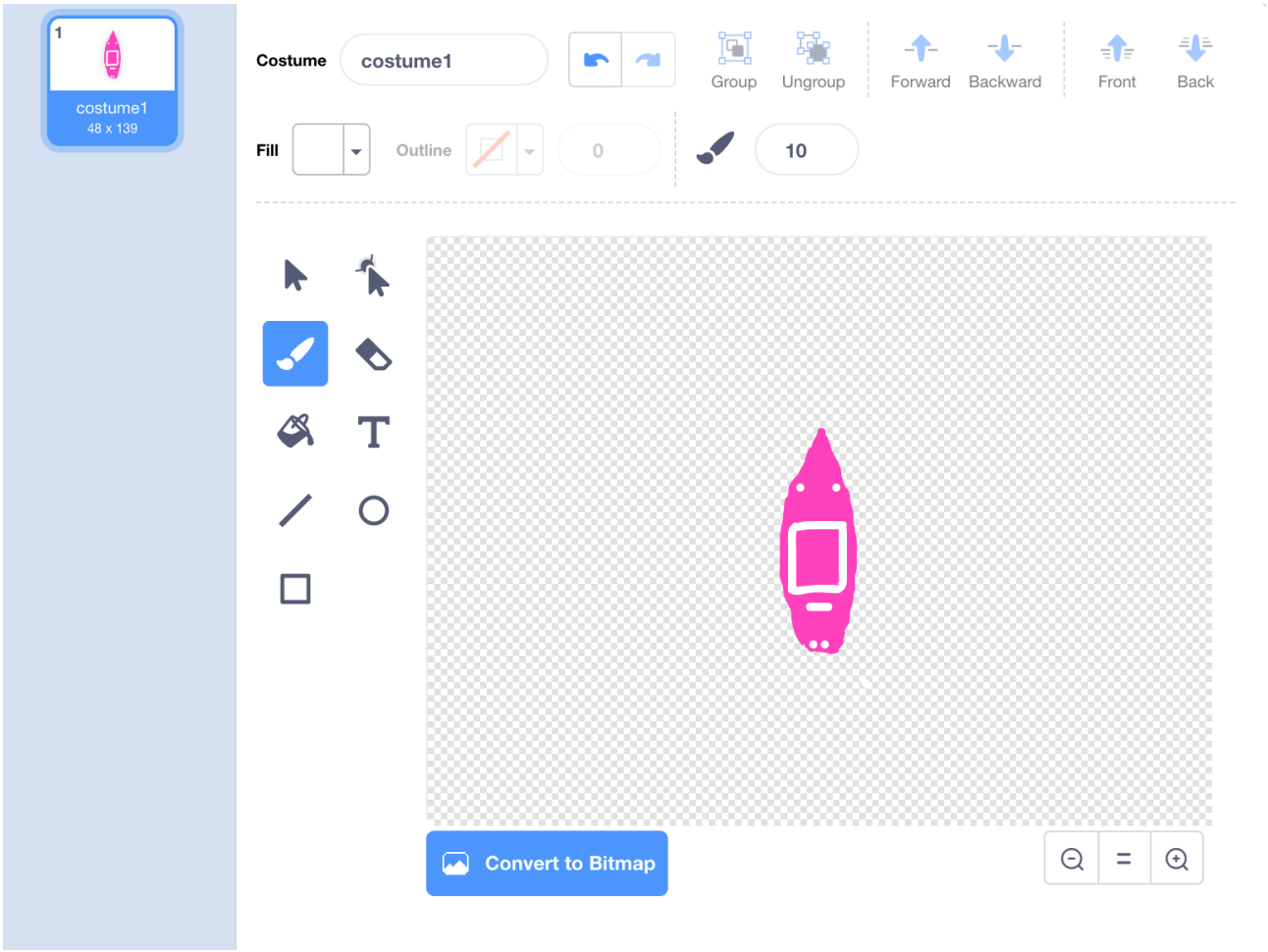
Click the green flag to see what the water looks like.

Without making any changes to the code, can you work out how it does this? Look carefully at each squiggle. What are they doing?

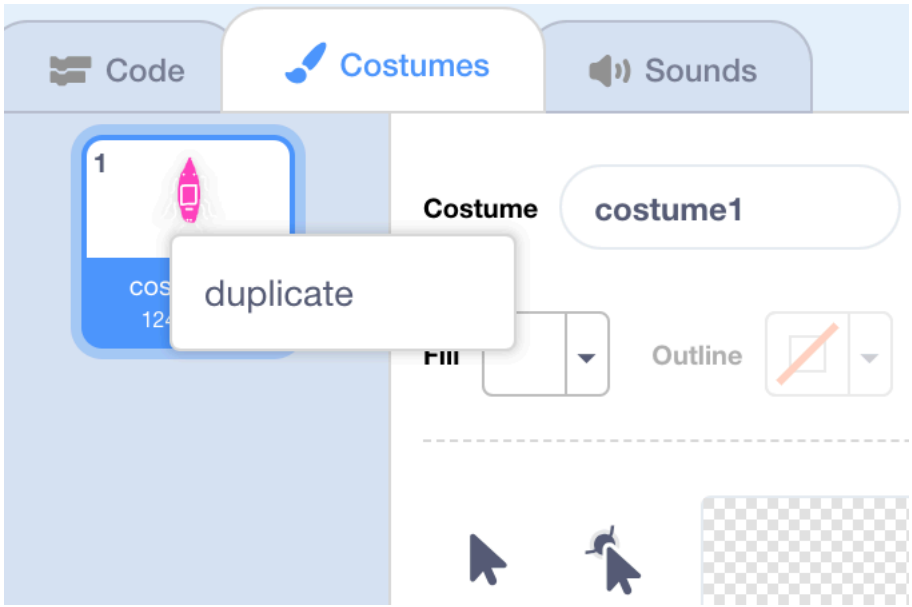
Coding Step 1: Draw the boat sprite as if it is being viewed from above.

The boat will need **four** costumes.

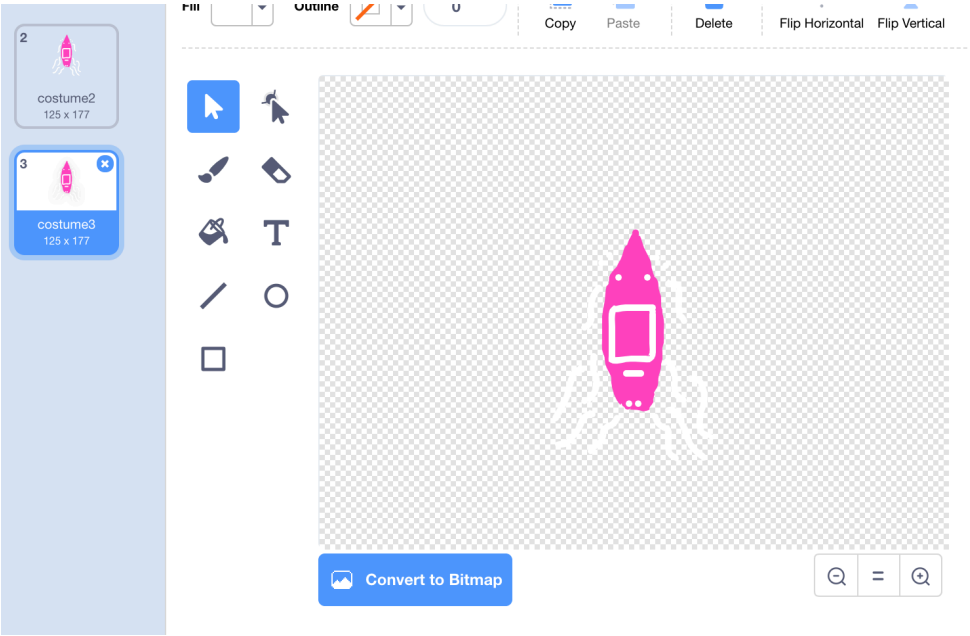
The first two will point straight up to the top of the screen:



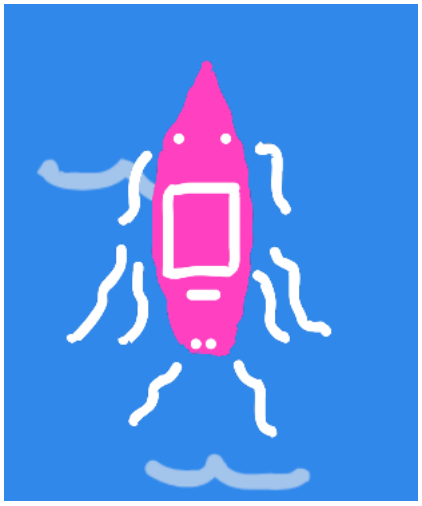
Step 2: Next: Duplicate your first drawing. Right click the mouse on the costume square and click 'duplicate':

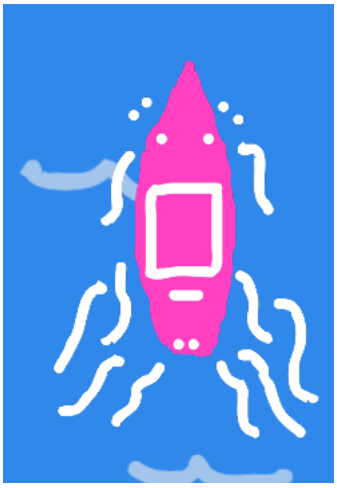


We are only going to change the little waves coming off the boat for this drawing



Here is an example of the two boat drawings with different waves.





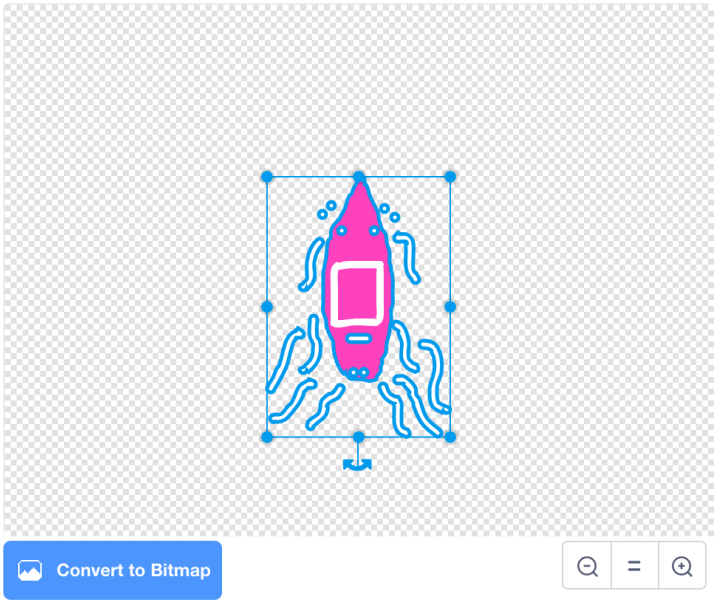
Step 3

Next, we will **duplicate** the first drawing **2 more times.**

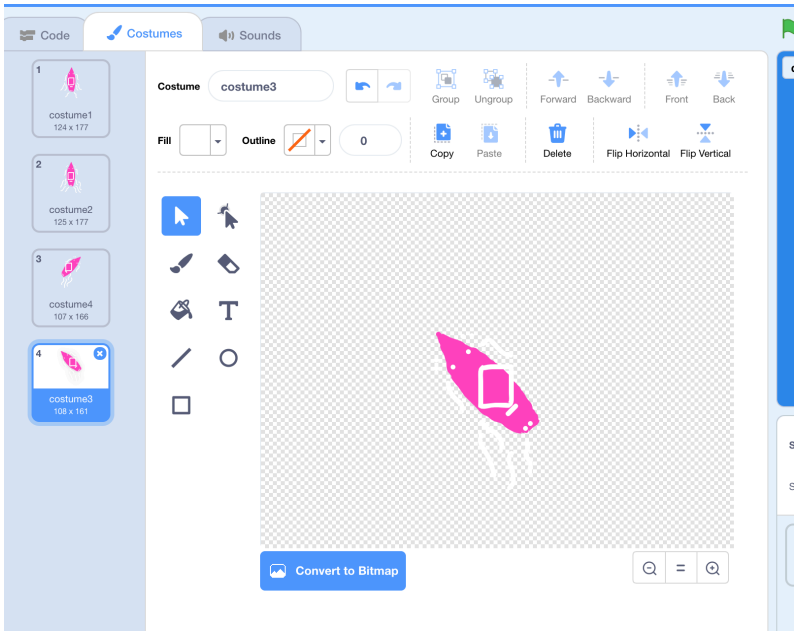
We'll change boat 3 so that the boat points to the right at about 40 degrees.

Then we'll change boat 4 to point to the left at about 320 degrees. There are diagrams below to explain this.

Using the pointer tool (an arrow) click and drag the mouse to put a square around **the whole drawing. It will look like the picture below if you are successful.**



** Hover your mouse pointer over the  till a hand shows, then drag it to one side - the whole boat will rotate.

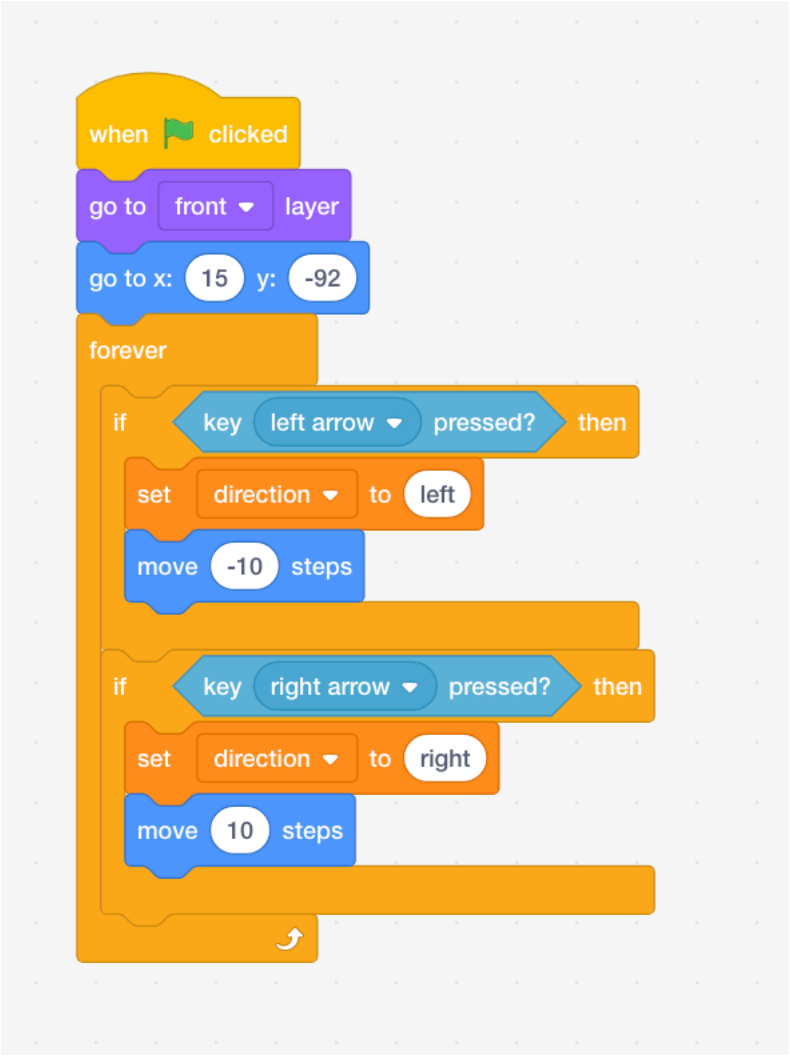


Do the same for the last drawing so they're both pointing off at an angle.

Step 4 Adding code to the boat

First we need to create a variable called 'direction'. This is going to store information about the direction the boat is facing: 'left' or 'right'

Next we add these code blocks. These will allow us to steer the boat and save direction information to our direction variable



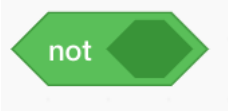
Run the code (click the green flag) and see how the boat responds.

Hmmm, it's a bit unrealistic. Let's improve it.

STEP 5 - making it better

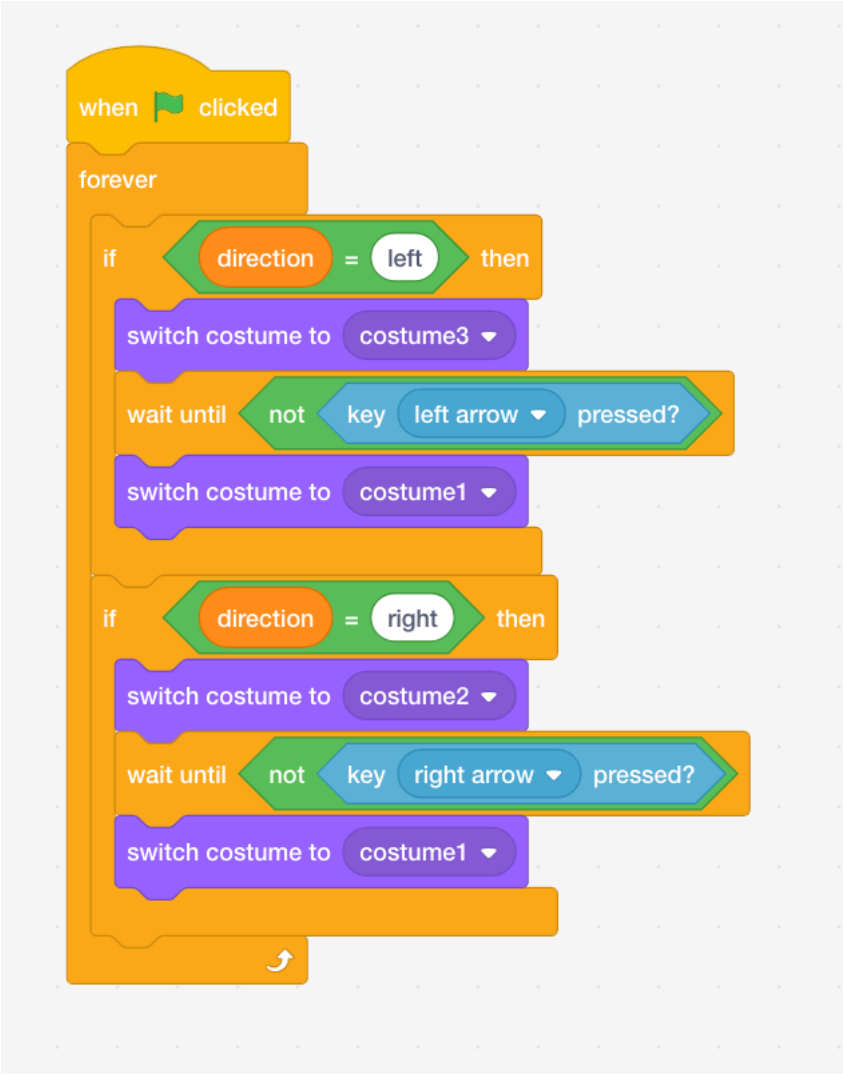
The code blocks below will respond to what the direction variable is set to: ‘left’ or ‘right’.

Watch out for the green not blocks:



These reverse whatever goes inside them. So if we put a ‘key pressed’ block inside, they will fire when we take our finger **OFF** the key.

You might need to play with the costume3 or costume4 values in the purple blocks. Set them to the boat costume pointing left in the “if direction = left” case and to the costume pointing right in the “if direction = right” case.



Try the code and see how the boat responds to the keys being pressed.

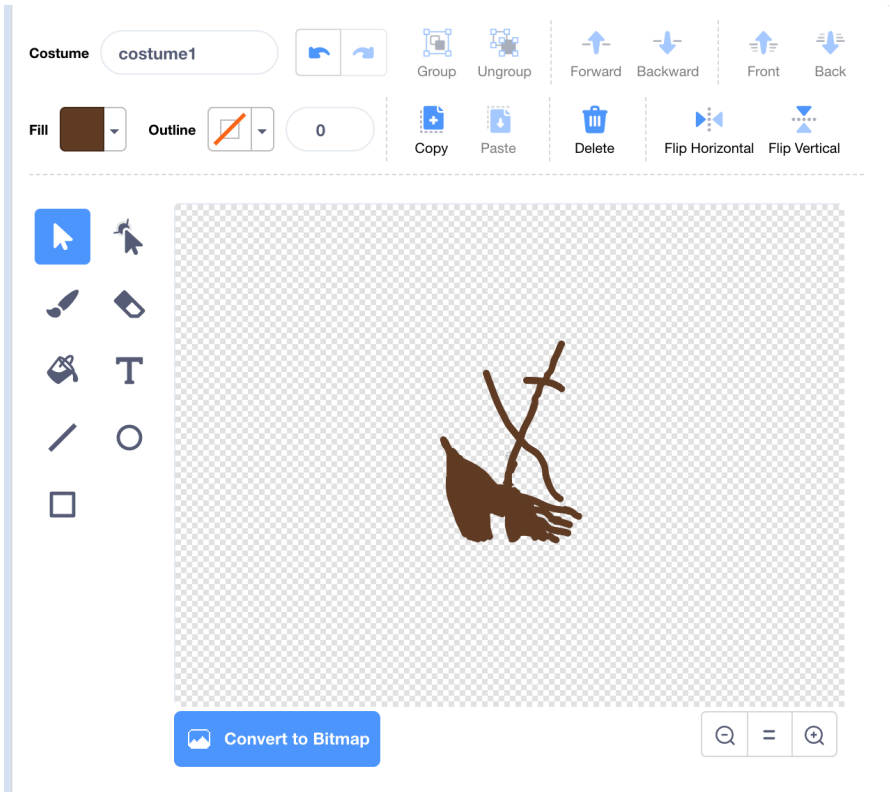
It should straighten up when you take your finger off the key.

STEP 6 - Obstacles

Next we are going to make an obstacle for the boat to avoid.

VERY IMPORTANT : draw your obstacle using **1 colour.** Only 1 colour. **NOT** more than one colour.

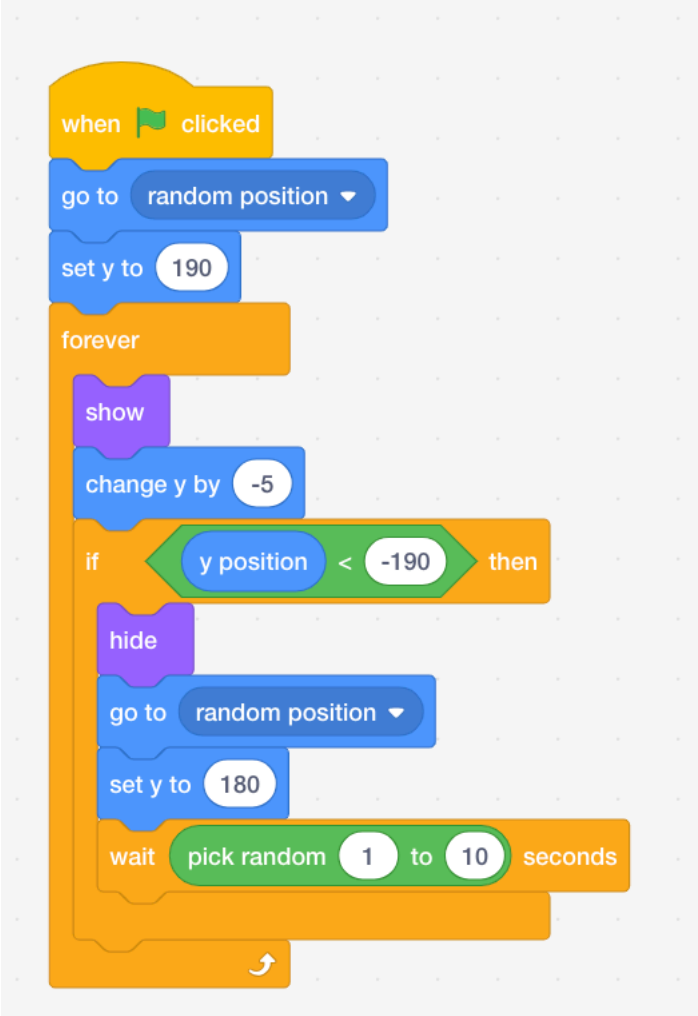
An obstacle could be a rock or a buoy or a shipwreck or a sandbar.
Here's an example of a wrecked ship:



Make sure the sprite you draw sits over the middle point of the drawing screen; over the little + symbol in the centre of the checked rectangle.

Click on the code tab and we'll add some code to make this obstacle behave in the right way.

Add this code to the obstacle:



Can you work out what it will do before you run the program?

Things to check:

Does the obstacle start at the top of the screen?

Things to play around with:

Try changing the number of seconds the sprite waits before appearing again.

Is your sprite too big to avoid? Try some other sizes.

MORE OBSTACLES:

Duplicate this sprite and draw a new obstacle in the costume (deleting the old costume). Give it some different values for how long it waits so they don't all arrive at once!

Last Task!!

THIS CODE GOES ON THE BOAT SPRITE