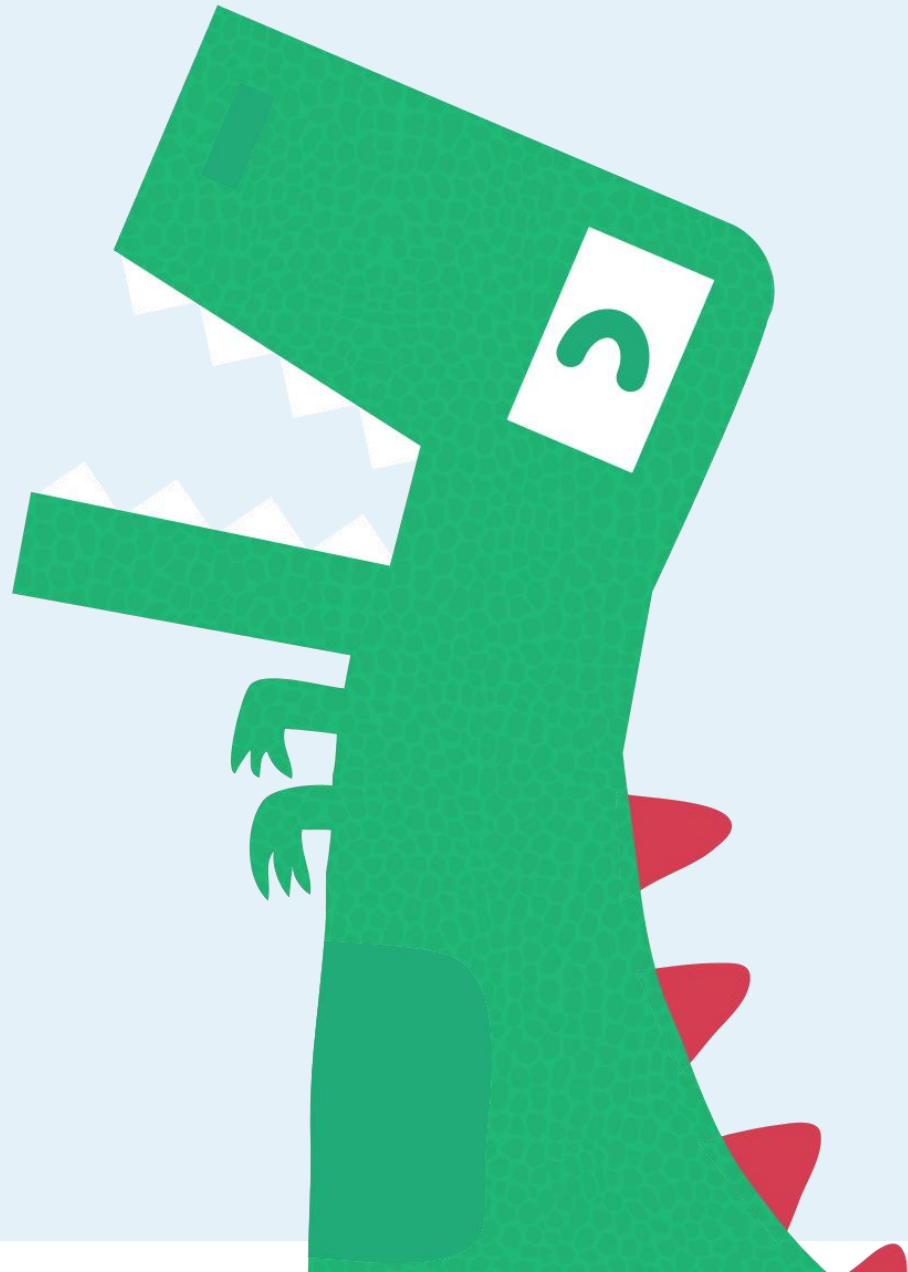


Student workbook

Whale escape

Code Playground



ORCA Project

Scratch project

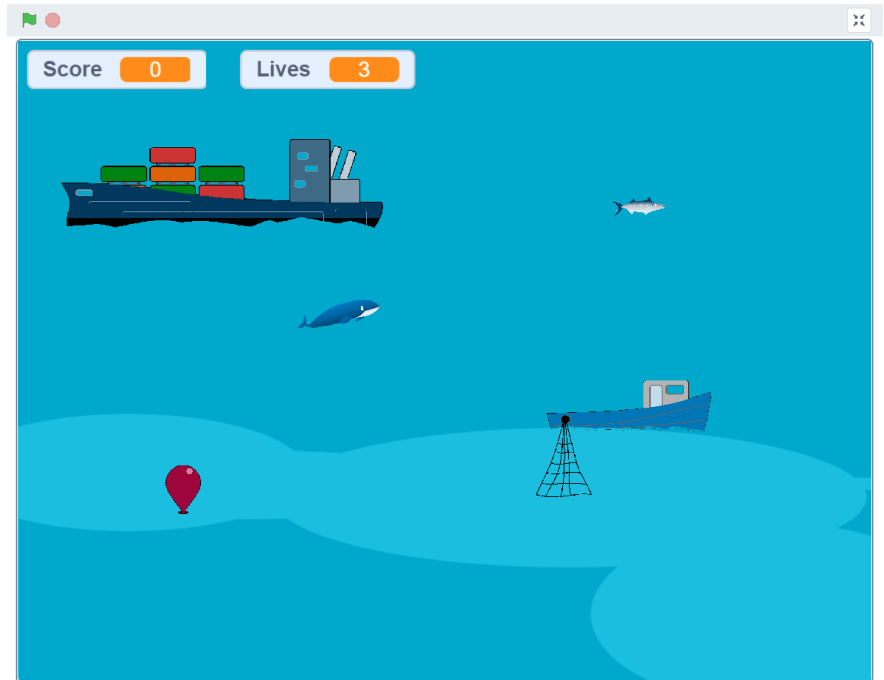
We're using code to raise awareness for our ocean's whales, dolphins and porpoises, of which UK and European waters are home to a third of the world's species.

In partnership with ORCA, we're coding with conservation in mind. We need you to use 'selection' and 'conditions' to help whales catch fish and avoid some man-made obstacles.

Search for 'ORCA Code Playground' on the Scratch website and find the project created by Code Playground. Have a look at each sprite to see what has already been coded to get started.

This project is designed for Scratch 3.0 and will show you the basics of conditional selection.

Hope you enjoy the game!

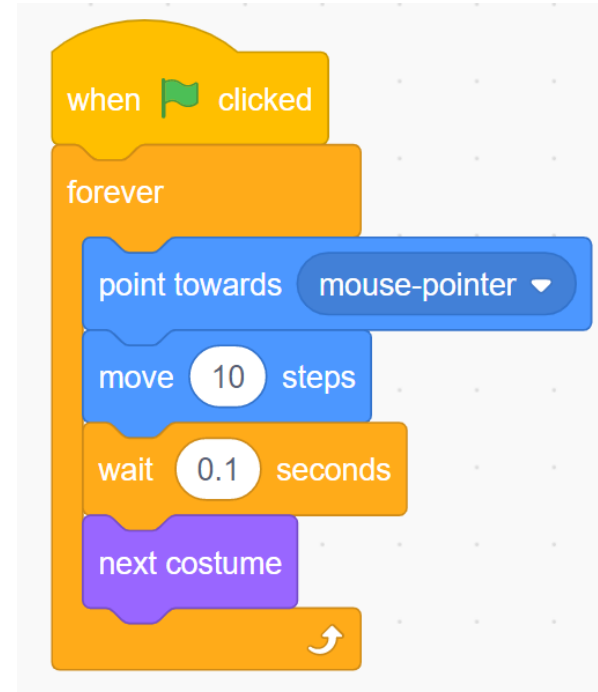


ORCA Project

Scratch project

Step 1

Let's make our whale move. In this game we'll make the whale follow your mouse around the project display. Add this code to your whale.



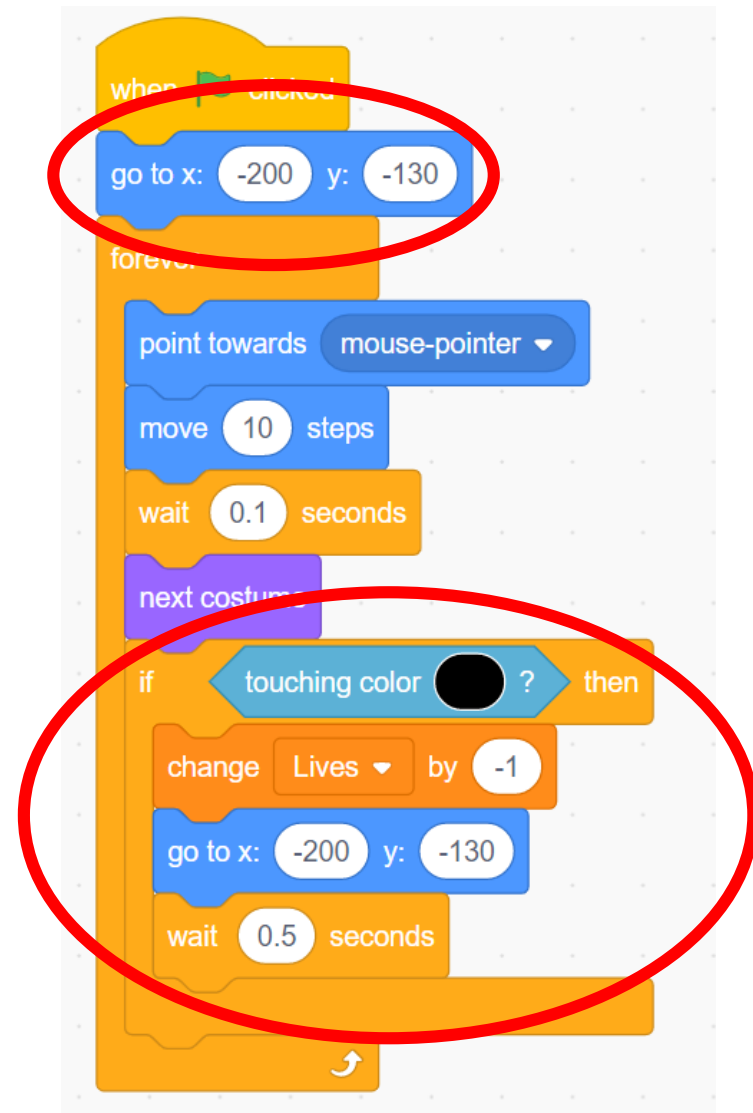
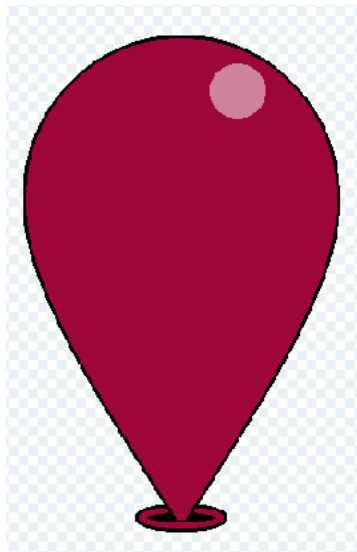
ORCA Project

Scratch project

Step 2

Now let's code what happens if the whale hit's one of the hazard sprites

If you look at the balloon, the container ship and the fishing trawler you can see a black outline on these sprites. We can use this to help make our code more efficient and select what happens when they hit the whale. Add this code to your whale sprite now

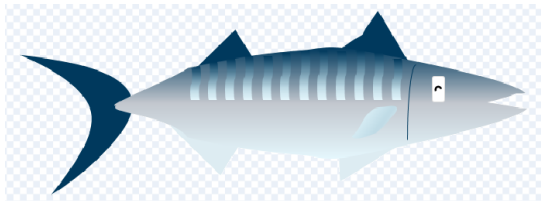


ORCA Project

Scratch project

Step 3

We can also use this condition to make the other sprites change direction when they cross over. Add this code to your fish sprite

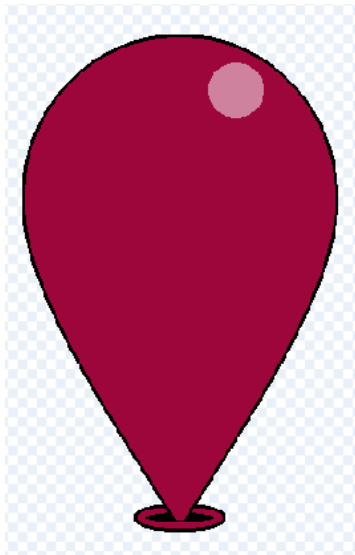


```
when green flag clicked
  set rotation style to left-right
  go to random position
  show
  forever loop
    move 20 steps
    turn pick random 1 to 10 degrees
    if on edge, bounce
    turn pick random 1 to 10 degrees
    wait 0.3 seconds
    if touching color black then
      turn pick random -30 to 30 degrees
```

ORCA Project

Scratch project

And now add the same code to your balloon sprite



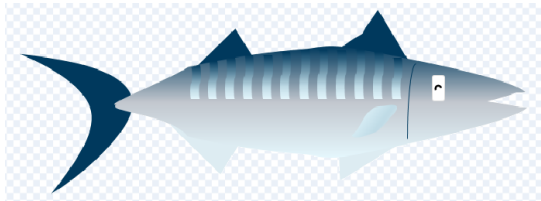
```
when clicked
  set rotation style left-right
  go to random position
  show
  forever
    move 10 steps
    turn pick random -20 to 20 degrees
    next costume
    if on edge, bounce
    turn pick random -20 to 20 degrees
    wait 0.25 seconds
    if touching color black ? then
      turn pick random -30 to 30 degrees
```

ORCA Project

Scratch project

Step 4

So what happens if the whale catches the fish. Let's set up the instructions for that now. Add this code to your fish sprite



```
when green flag clicked
  set rotation style to left-right
  go to random position
  show
  forever loop
    move 20 steps
    turn pick random 1 to 10 degrees
    if on edge, bounce
    turn pick random 1 to 10 degrees
    wait 0.3 seconds
    if touching color black then
      turn pick random -30 to 30 degrees
    if touching Whale then
      hide
      change Score by 1
      wait 2 seconds
      go to random position
      show
```

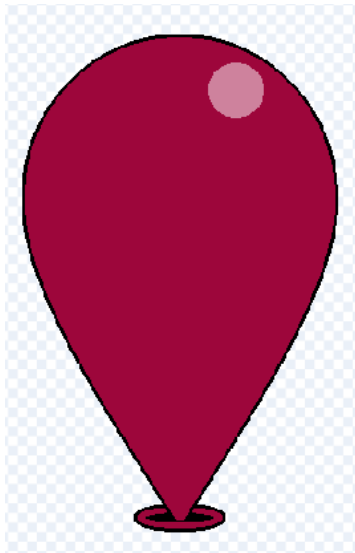
ORCA Project

Scratch project

Step 5

Next we can set up what happens if the whale catches the balloon instead. Add this code to your balloon.

**Top tip – the player will also lose a life because of the 'if touching black' code on the whale sprite.



```
when green flag clicked
  set rotation style to left-right
  go to random position
  show
  forever loop
    move 10 steps
    turn pick random -20 to 20 degrees
    next costume
    if on edge, bounce
    turn pick random -20 to 20 degrees
    wait 0.25 seconds
    if touching color black? then
      turn pick random -30 to 30 degrees
    if touching Whale? then
      hide
      wait 2 seconds
      go to random position
      show
```


ORCA Project

Scratch project

Step 6

Next we'll set up the end of the game. This will be when the player reaches the maximum score or loses all of their lives. We add this code to the stage as it controls the whole project.



```
when green flag clicked
  switch backdrop to Ocean
  set Score to 0
  set Lives to 3
  forever loop
    if Lives = 0 then
      switch backdrop to You Lose
      stop all
    if Score = 10 then
      switch backdrop to You Win
      stop all
```

ORCA Project

Scratch project

Level up!

- Can you add more fish for the whale to catch?
- Can you make the coding more efficient?
- How would you code a second level?
- What other features can you add to this project?
- What can you do in your everyday life to support whales and dolphins?

Notes

About ORCA

ORCA are a whale and dolphin conservation charity based in the UK. Our vision is oceans alive with whales and dolphins!

We work to protect whales, dolphins and porpoises and their habitats in the oceans around the UK and the rest of the world, through our research and education projects.

Learn more about cetaceans and the threats that they face. ORCA have a huge resource library of educational materials for schools. See www.orcaweb.org.uk/orcalessons

***All images on this page used with permission from ORCA*



Code Playground