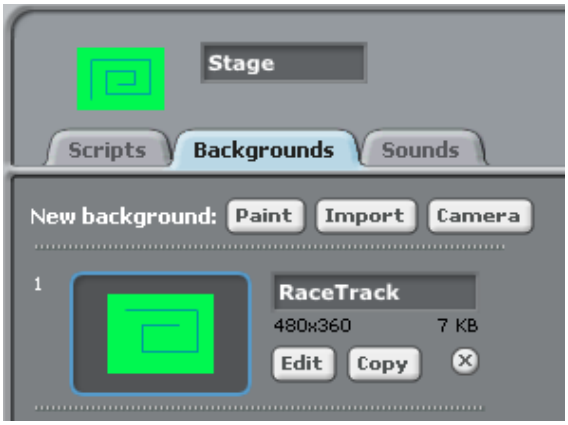
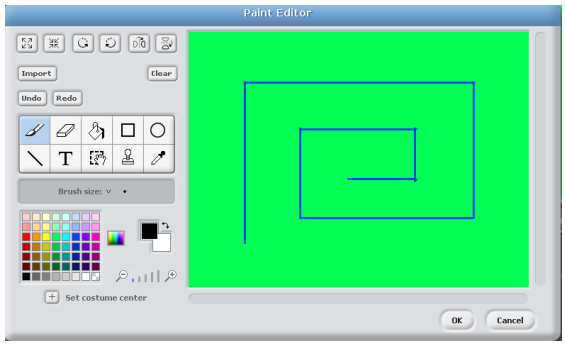
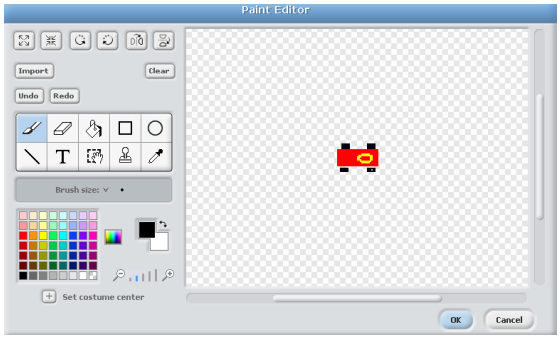
Marble Racer – Scratch 1.4

This resource has been simplified for users of Scratch 1.4. This activity is © the TES Website where it was written as a group activity.

	Activity	Scratch
1	Open Scratch and save the project	Save as `Marble-Racer`
2	Open Stage and create a new background give it a name `RaceTrack` Use the original stage to design your stage. Click on paint to edit as per section 3	
3	Use the edit tools to: • Fill the entire area with a background colour • Use the line tool to mark out the race track A little bit of practice may be necessary to get the lines straight. Click OK to save the `RaceTrack`	
4	Create a new sprite  Edit the costume and design a racing car for your Race Track Click on Paint to edit as per section 5	

5 This basic design car uses:

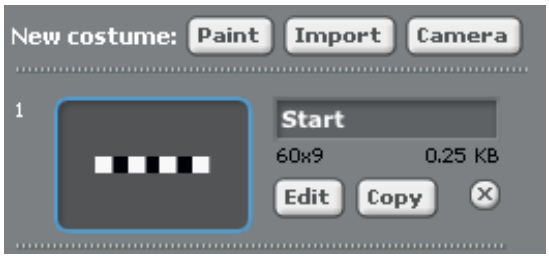
- Filled blocks using the rectangular tool and filled with colour
- Wheels created using the stamp tool

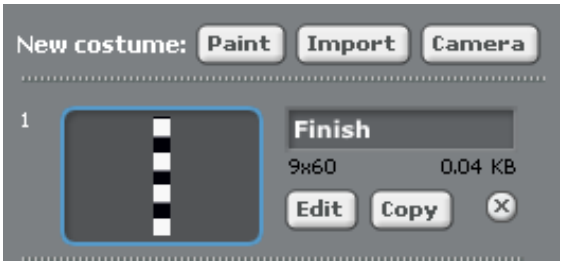


(The sprite can be resized so don't worry about how big you make it).

Click OK to save the sprite as `redcar`

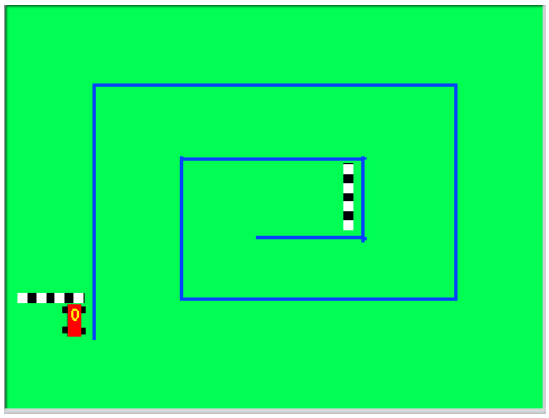
6 Create two more sprites as described in section 5 name them `Start` and `Finish`





7 The final stage should look like this:

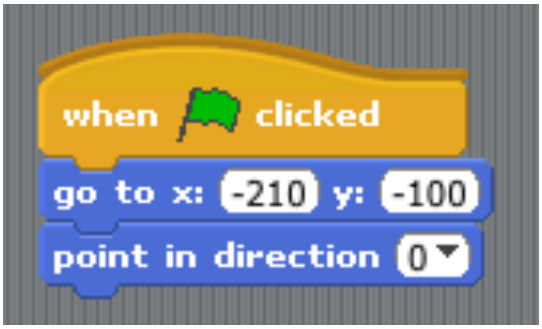
- Position the three sprites `redcar`, `start` and `finish` as shown in the diagram.
- The `redcar` maybe in a horizontal state, this will be changed when coded.



The following code will move the `redcar` around the racing track using the arrow keys on the keyboard.

8 There is no script code for the `racetrack`

9 The script for the `redcar` will be constructed in pieces to demonstrate how the code will work.



The first stage is to get the car in right place on the starting grid.

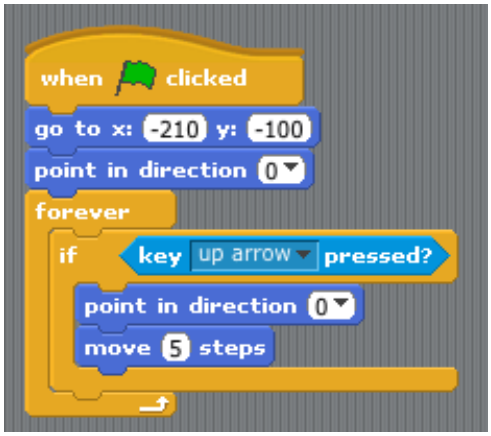
Test the animation by selecting the Green Flag
Stop the animation select the Red Circle

10 Next add a forever loop. This ensures that script inside the loop is repeated forever.

The 'if' loop is waiting for something to happen in this case pressing the up arrow key.

Once the up arrow key is pressed the `redcar` will move upwards 5 steps.

Test the animation as described above.



11 Where would you insert the following blocks in the above script (section 10) for the other arrow keys?

Compile the new blocks and insert them into the script and test the animation.

You should be able to navigate the `redcar` around the `racetrack` in all directions.

12 You will have noticed whilst navigating in section 11 there is no collision control!

The codeblock will detect the colour of the track outline and if it colides then it will say 'Crash' and stop the program running.

Insert this new script into the code in section 10.

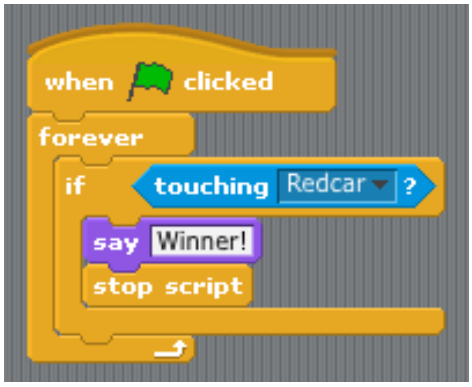
Now test the animation.

The touching colour must match the track border colour

13 Almost there, how about some code to tell the winner that he has won.

Place this in the `Finish` sprite script.

Test the animation



14 The code is now complete

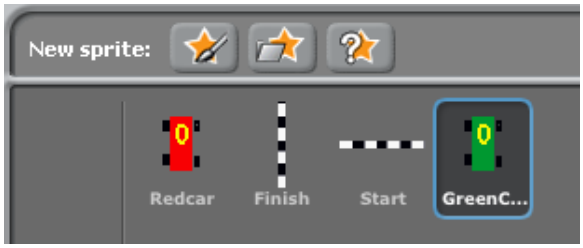
Test the animation in the project window

Remember to save your completed project.

15 **Challenges:**

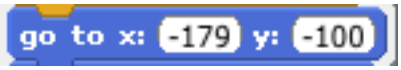
Duplicate the `redcar` sprite. Right click on a Sprite and select Duplicate from the menu.

Recolour and name the new sprite `greencar`



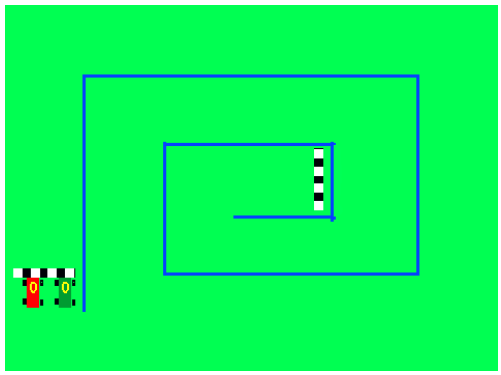
16 The script for the `greencar` script is almost the same as the `redcar` script.

Change the starting position of the `greencar` to



Assign the 'W', 'A', 'S' and 'Z' keys as the navigation keys for this script.

Test the animation and save your project.



17 What if there is a collision between two cars?

Where would you place this code block in the script?