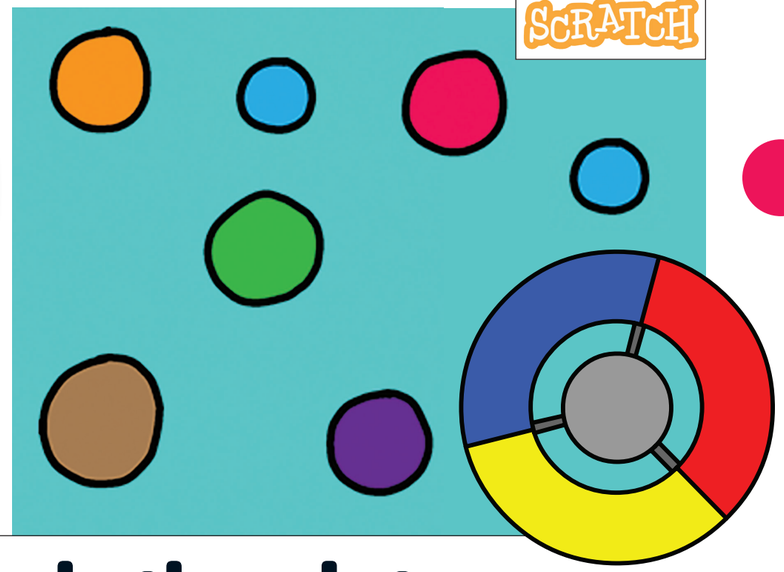
CODING CLUB

A place to code and create

The coding club is your place to learn and develop coding skills. We've created these pages with the Raspberry Pi Foundation to provide loads of projects, from building games to designing animations.

This project uses the Scratch programming language.

SCRATCH



Make a catch-the-dots game

See how many points you can get.

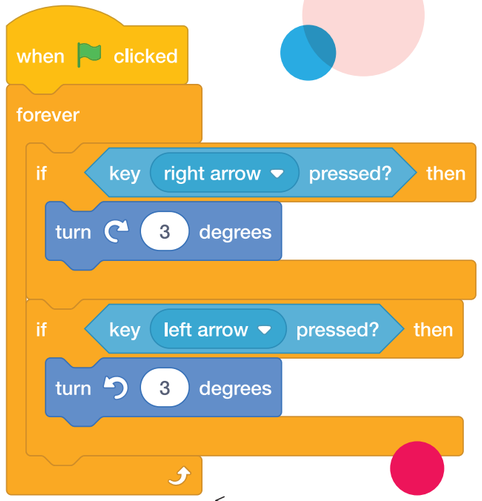
Create a controller

Controller sprite

1 Open a new Scratch project at rpf.io/dots-on

2 This game uses a controller wheel with different coloured sides. The aim of the game is to use the arrow keys on your keyboard to rotate the wheel and "catch" the flying dots – making sure that you match up the colour of the dot with the colour on the wheel. First, you'll create your controller by building the script (right) on the controller sprite. A script is a stack of coding blocks that makes a list of instructions.

3 Test your game by clicking on the green flag. You should be able to rotate the wheel from side to side.



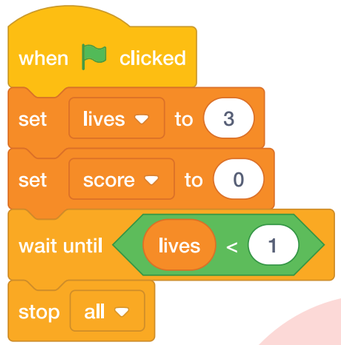
TOP TIP!
Make sure everything is inside the "forever" block.

Gain points or lose lives

Stage sprite

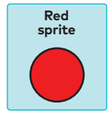
1 For each dot you successfully catch you'll earn a point, and for each dot you miss, or fail to match with the correct colour, you'll lose a life.

2 Click onto the stage sprite and make two new variables by scrolling to the bottom of the code control panel on the left side of the screen and clicking "Make a Variable" – and call them score and lives. Build the script below onto the stage sprite.



Make the dots

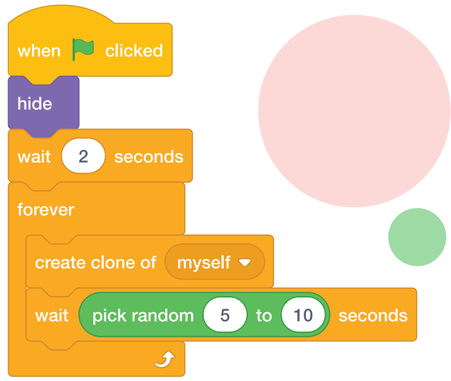
Red sprite

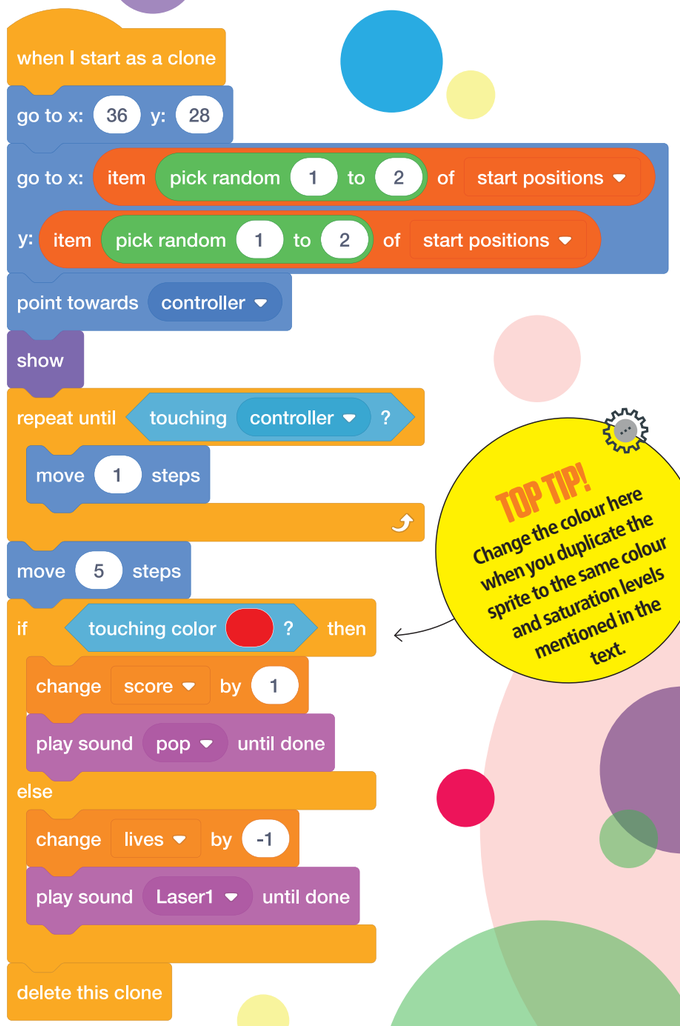


1 Click on the Choose a Sprite icon (bottom right) then select the paint tool. Use the circle tool in paint to draw a dot and fill the colour with red (the colour should be 0 and the saturation 100 to create the same red as the wheel). Call your new sprite "red". Go to the coding area of the red sprite and build the script below.

2 Before you build the script to the right, you will need to make a list called "start positions". You can do this by scrolling to the bottom of the code control panel and selecting Make a List. A small box called "start positions" will appear on the stage. Click on the box's + icon and add the values -180 and then 180. Return to the control panel and untick the box next to "start positions" to hide it from the stage. Now build the script. To add a new sound, click on the Sounds tab at the top and Choose a Sound – search for Laser1. This will now appear in the drop down menu on the "play sound" coding block.

3 To make the other dots, duplicate the red sprite twice and name one "yellow" and the other "blue". The code from the red sprite will have copied over, and you can change the colour of the new sprites in the Costume tab. The blue dot is colour 65 and saturation 100. The yellow dot is colour 17 and saturation 100. You'll also want to change the first script below on each, so the yellow dot waits 4 seconds before appearing, and the blue dot 6.

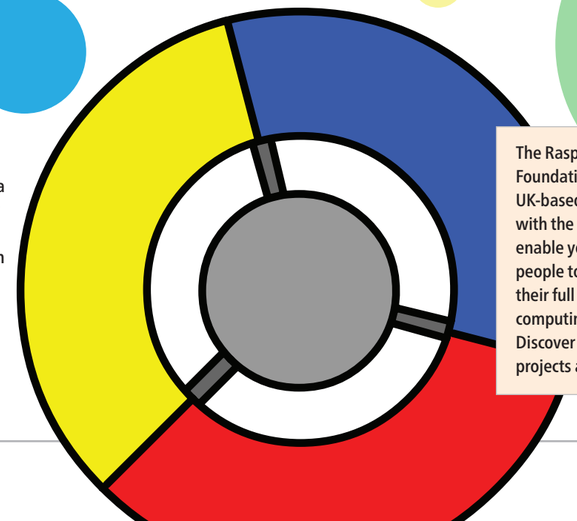




TOP TIP!
Change the colour here when you duplicate the sprite to the same colour and saturation levels mentioned in the text.

Take it further

You can take your game further by adding a "speed" variable so that the dots get faster over time. You could also create special dots that are worth extra points, slow down the dots or hide all the other dots on the screen. You could also create a variable called "high score" to save the game's highest score, so players can see how well they're doing and know what score they need to beat.



The Raspberry Pi Foundation is a UK-based charity with the mission to enable young people to realise their full potential through the power of computing and digital technologies. Discover more step-by-step coding projects at rpf.io/scienceandnature

Raspberry Pi Foundation