Things to make and do

Create an archery game

Hit the target with this shooting challenge.

What you will need:
- A computer
- Scratch
- Lightning-quick reactions

How does it work?
This project uses a free, online coding language called Scratch. By creating programs using Scratch, you can improve your problem solving skills. This activity teaches you about animation and colours.

```
when [flag] clicked
broadcast new arrow
```

```
when I receive new arrow
go to x: -150 y: -150
set size to 400 %
forever
    glide 0.5 secs to x: pick random -150 to 150 y: pick random -150 to 150
```
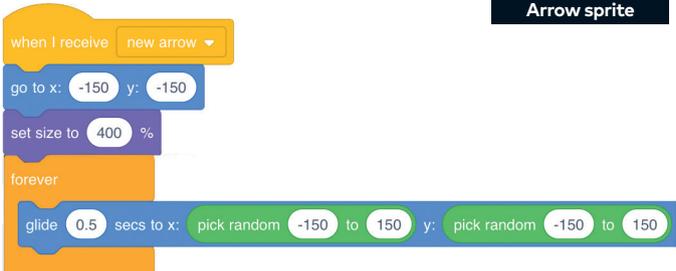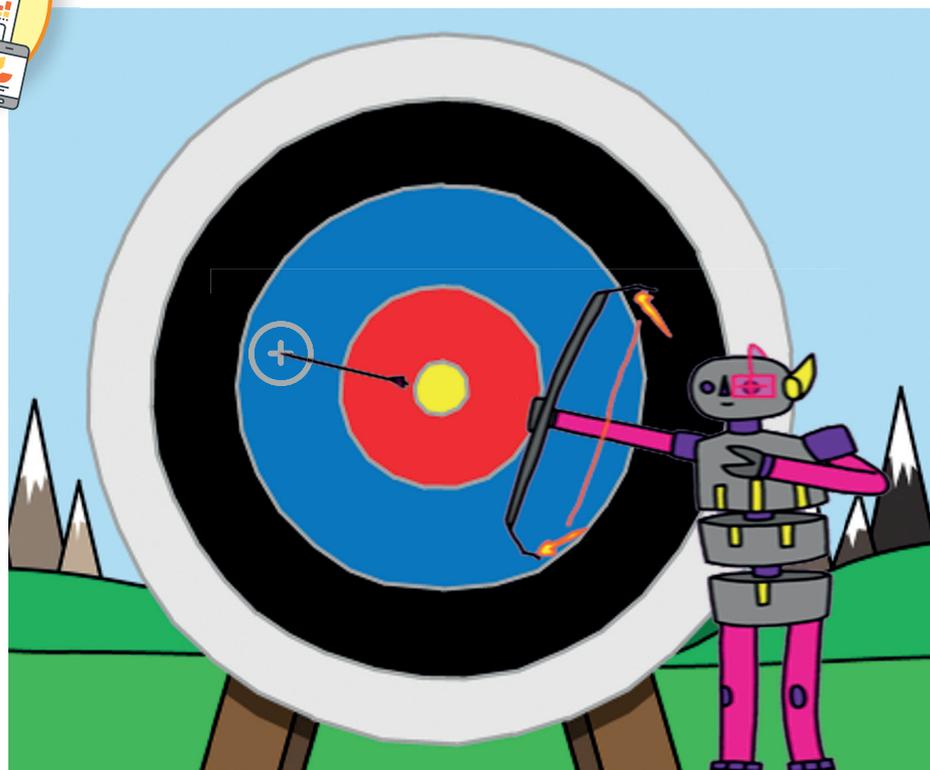
Arrow sprite

Crosshair script

1 First, on your computer go to rpf.io/archeryon to open up the starter project in Scratch.

2 Click on the arrow sprite (icon) on the right side of the screen. It is a crosshair (a plus sign in a circle).

3 Now, build the script above. A script is a stack of coding blocks that makes a set of instructions. Drag the colour-coded blocks from the list on the left-hand side of the screen. Snap them together in the coding area in the middle.

4 Begin with the "green flag" hat block. Then, select the "broadcast" block. Change the option by clicking the drop-down menu and selecting "new message". Type "new arrow" in the box.

5 Complete the rest of the script, altering the inserts where necessary. Check each line carefully.

6 After you have popped in the "set size" block, click on the green flag to run the script. You should see your arrow get bigger and move to the bottom-left of the stage.

7 Finish the script and test your game again. Now, the arrow should move randomly around the stage.

```
when space key pressed
stop other scripts in sprite
repeat 50
    change size by -10

if touching color [yellow] ? then
    start sound cheer
    say 200 points for 2 seconds

if touching color [red] ? then
    start sound cheer
    say 150 points for 2 seconds

if touching color [blue] ? then
    start sound cheer
    say 100 points for 2 seconds

if touching color [black] ? then
    start sound cheer
    say 50 points for 2 seconds

broadcast new arrow
```

Arrow script

1 To shoot arrows, add the script (left) to the coding area in the middle of the screen. Remember to check each line of code carefully.

2 Begin with a hat block as usual. Then, drag and drop the "stop" block and select "other scripts in spite" from the drop-down menu.

3 The next sequence of coding blocks assigns a score to each of the colours on the archery target. You will need to match the exact target colours in each "touching colour" coding block. The easiest way to do this is with the eyedropper tool. Click on the colour in the coding block and select the eyedropper symbol. Then move your mouse over to the archery target on the stage. Click to select the correct colour.

4 You can also add a cheer sound and for a pop-up score for each arrow.

5 Finish with a "broadcast" block and you are ready to test out your game.