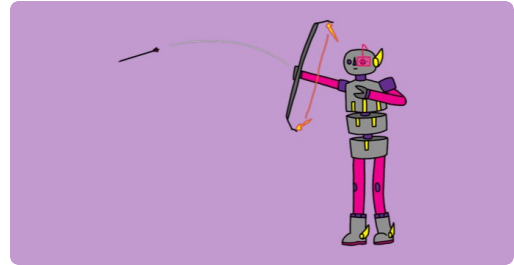


## Archery

Shoot arrows as close to the bullseye as you can.

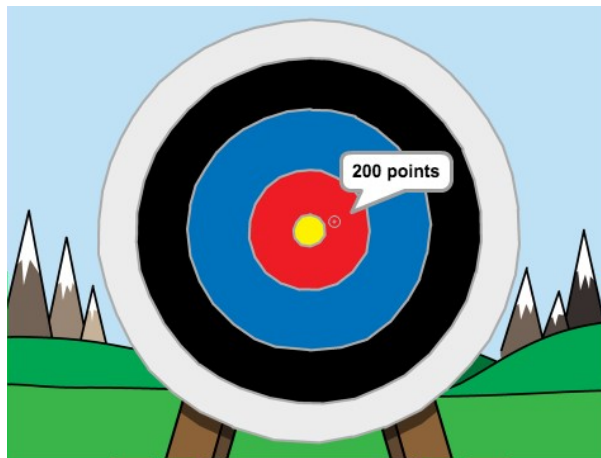
Scratch



### Step 1 Introduction

You are going to learn how to create an archery game, in which you have to shoot arrows as close to the bullseye as you can.

#### What you will make



#### What you will need

##### Hardware

- A computer capable of running Scratch

##### Software

- Scratch 3 (either **online** (<http://rpf.io/scratchon>) or **offline** (<http://rpf.io/scratchoff>))

##### Downloads

The starter project can be found **here** (<http://rpf.io/p/en/archery-go>).

### What you will learn

- Use animations
- Use broadcasts
- Use random numbers

### Additional information for educators

You can find the **completed project** here (<http://rpf.io/p/en/archery-get>).

## Step 2 Aiming arrows

Let's start by creating an arrow that moves around the screen.

Open the Scratch starter project.

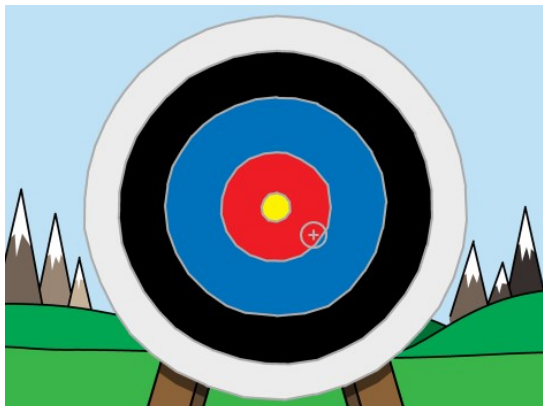
**Online:** open the starter project at **rpf.io/archeryon** (<http://rpf.io/archeryon>).

If you have a Scratch account you can make a copy by clicking **Remix**.

**Offline:** open the **starter project** (<http://rpf.io/p/en/archery-go>) in the offline editor.

If you need to download and install the Scratch offline editor, you can find it at **rpf.io/scratchoff** (<http://rpf.io/scratchoff>).

In the starter project, you should see a target backdrop and a cross hair sprite.



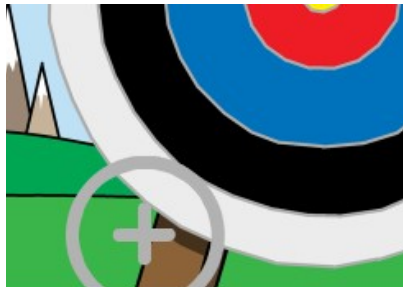
When your game starts, broadcast a message to shoot a new arrow.



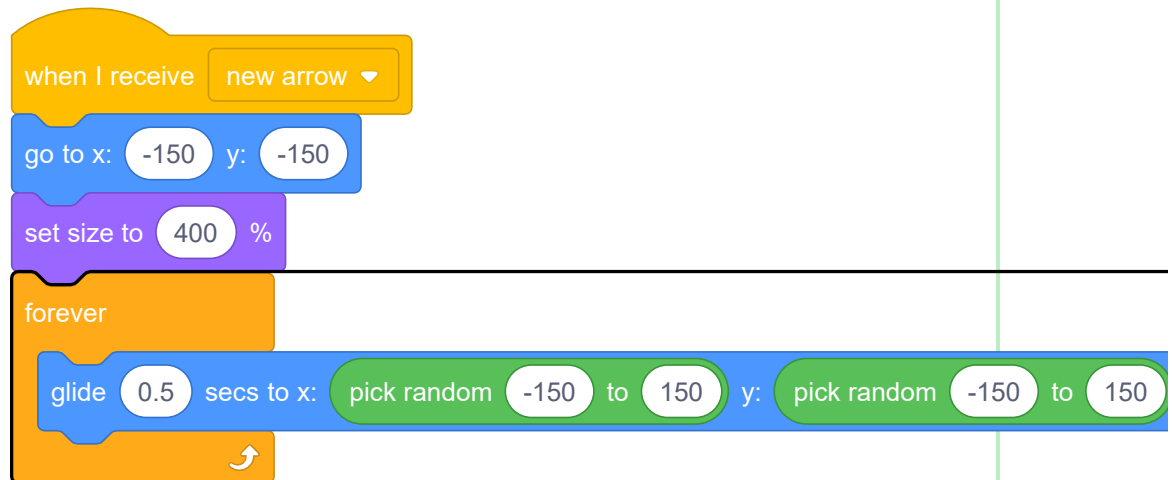
Once this message has been received, set the arrow's position and size.



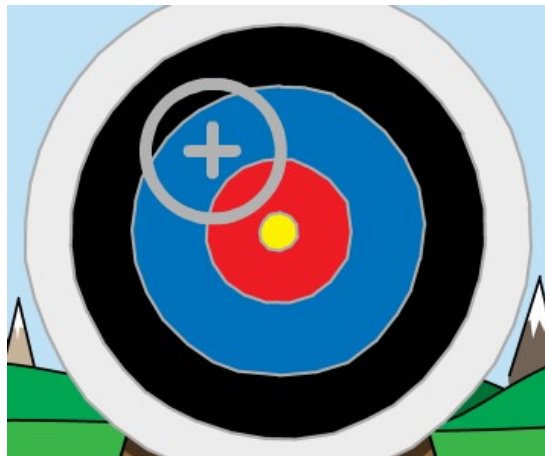
Click the green flag to test your game. You should see your arrow get bigger and move to the bottom-left of the stage.



Add code to your arrow so that it glides randomly around the stage forever.



Test your game again, and you should see your arrow move randomly around the stage.



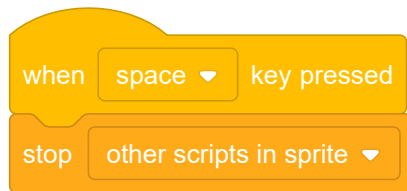
### Step 3

### Shooting arrows

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Let's code your arrow to shoot when the space bar is pressed.

Stop the other script (the one moving the arrow) when the space bar is pressed.



Test your project again. This time, your arrow should stop moving **when the space bar is pressed**.

Animate your arrow, so that it looks like it's moving towards the target.

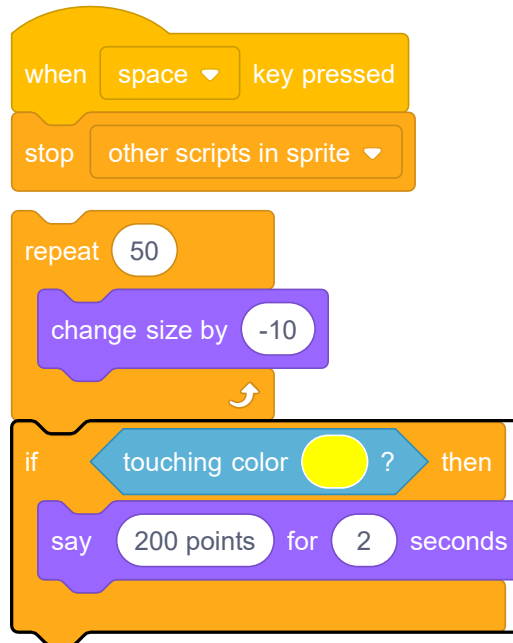


Test your game again. This time, when you press the space bar you should

see your arrow get smaller, as if it's moving towards the target.

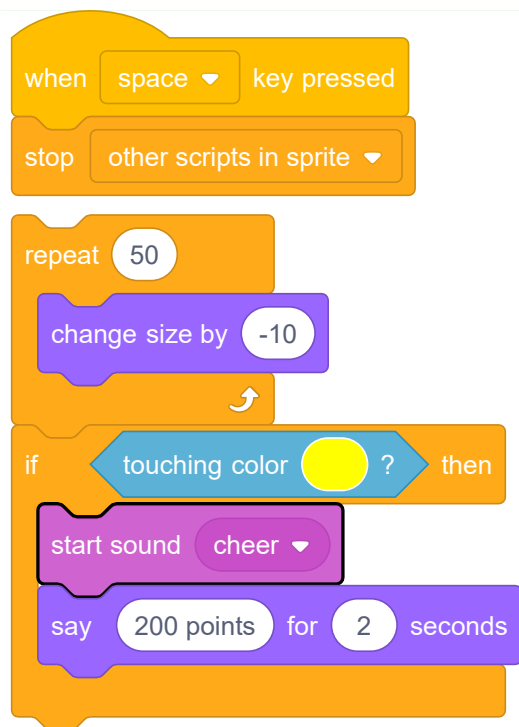


Once your arrow is at the target, you can tell the player how many points they have scored. For example, they could score 200 points for hitting the yellow.



You can also play a sound if they hit the yellow.





Finally, you need to broadcast the new arrow message again to get a new arrow.

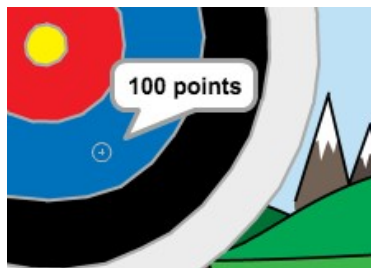




### Challenge!

#### Challenge: Different scores

Can you add code to your game, so that you get a different score for hitting different parts of the target?



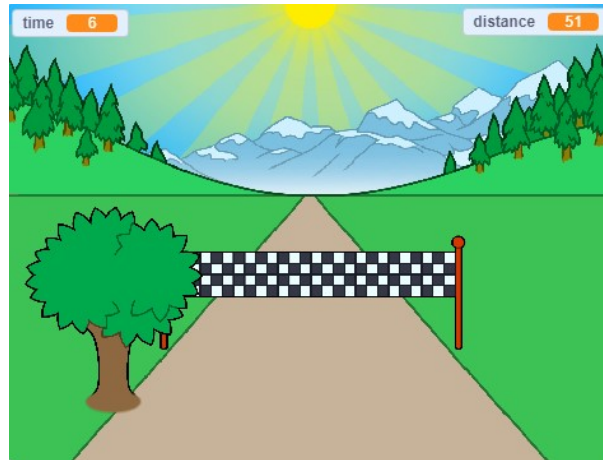
## Step 4

### What next?

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Take a look at the **Sprint** (<https://projects.raspberrypi.org/en/projects/sprint>) Scratch project.

You are going to learn how to create your own sprint game, in which you have to use the left and right arrow keys to get to the finish line as quickly as you can.



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**View project & license on GitHub** (<https://github.com/RaspberryPiLearning/archery>)