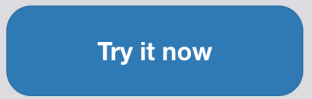

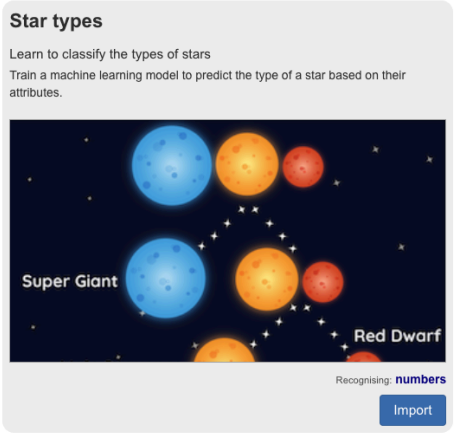
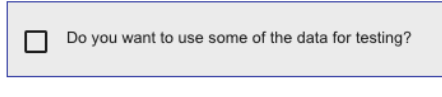


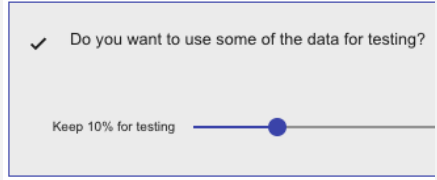


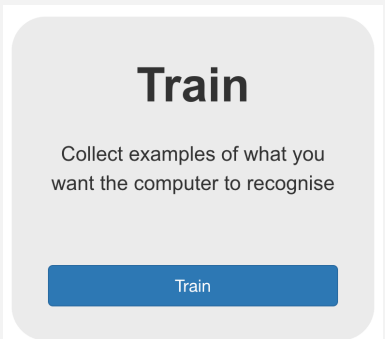
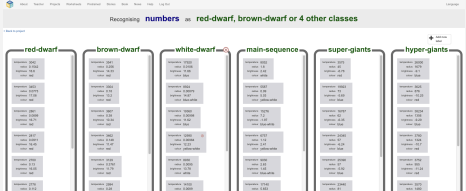

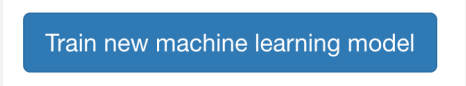


## Star types – Training a decision tree

Rather than creating a decision tree by hand, you can use machine learning to create one. You are going to create a decision tree with all 241 stars in the data set.

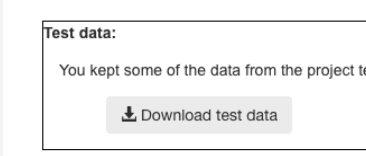
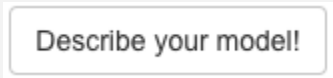
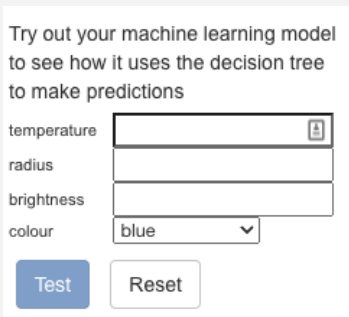
Your first task is to set up and train your model by completing the following steps:

1	Open the website <a href="https://machinelearningforkids.co.uk">Machine Learning for Kids</a> (machinelearningforkids.co.uk).	
2	Select <b>Get started</b> , then <b>Try it now</b> .	
3	Select <b>Copy template</b> .	
4	Scroll to the <b>Star types</b> template and click on <b>Import</b> .	
5	Tick the box that says <b>“Do you want to use some of the data for testing?”</b>	

6	<p>Use the slider to select the <b>percentage</b> of data you want to keep back for testing.</p> <p>This is up to you but anything between 10% and 30% will work well.</p>	
7	Click on <b>IMPORT</b> .	
8	Open the new <b>Star types</b> project that has just been created.	
9	Select <b>Train</b> .	
10	Look through the <b>training data and the classes</b> that have been created for you.	
11	<p>Select <b>Back to project</b>.</p> <p>Next, select <b>Learn &amp; Test</b>.</p>	
12	<p>Your model is ready to be trained.</p> <p>Select <b>Train new machine learning model</b>.</p>	

## Testing your model

Now that you have trained your model, it is time to test it to see how successful it is.

1	Click on <b>Download test data</b> .  This will download a spreadsheet of test data, which you should open.	
2	Select <b>Describe your model!</b> to see your decision tree.	
3	Choose <b>three sets</b> of star data to use for testing.  You can copy the data into the table below.	
4	Input your test data into the form provided to see what your decision tree would label the data.	

### Test data

Here is a space to copy the data for three stars from your spreadsheet:

Star number	Temperature	Radius	Brightness	Colour	Type
1					
2					
3					



This resource is licensed by the [Raspberry Pi Foundation](https://www.raspberrypi.org/) under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International Public License (CC BY-NC-ND 4.0). For more information on this licence, see [creativecommons.org/licenses/by-nc-nd/4.0](https://creativecommons.org/licenses/by-nc-nd/4.0).