What would you weigh on the moon?

Teacher guide

What this is about

This activity uses a spreadsheet to do a calculation and draw a graph. It shows you how to make a relatively easy spreadsheet 'model' - the IT skills required here are minimal - the interpretation of the graph is a bit harder. In curriculum speak: the children use this model to 'explore a real situation'.

The activity highlights that there is a different gravity pull on different planets. The children can look at the graph and say which planets have a lot or little gravity - in other words they draw a conclusion from their results.

Starting points

Ask the children what would happen if they tried to use bathroom scales in space. Would they weigh anything?

Watch some film of astronauts on the moon. Could they use scales on the moon? Would they weigh more, or less on the moon?

Look at a model of the solar system. Explain that the spreadsheet can work out how much they weigh in different places.

What to do

Start a new spreadsheet and follow the instructions in the diagram below.

Get each child to enter their weight in the box in the spreadsheet. They can then draw a graph.

Questions to ask

What do you weigh on earth?

What would you weigh on the moon?

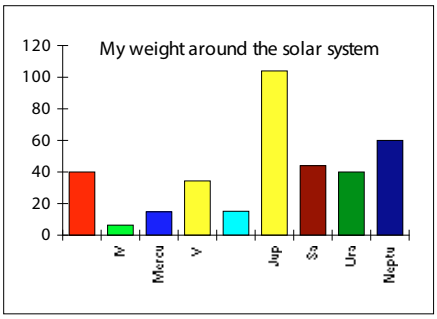
On which planet or moon would you weigh the most?

Sort them into: those where you weigh a lot, and those where you weigh a little.

* We can't just use the word planet here because the moon is not a planet.

Extra

Use a spreadsheet to help you work out how to build a scale model of the solar system. The program should help you scale the distances of the planets from the sun. See the Ideas section.



How to draw a graph with your spreadsheet
1. Highlight cells A3 to A11
2. Hold down CTRL other special key.
3. Highlight cells C3 to C11
4. Get the program to draw a bar graph.

	A	B	C	D
1	How much would you weigh on ...?			
2	Body	Gravity	Your weight	
3	Earth	1	40	
4	Moon	0.16	6	
5	Mercury	0.37	15	
6	Venus	0.86	34	
7	Mars	0.38	15	
8	Jupiter	2.6	104	
9	Saturn	1.1	44	
10	Uranus	1	40	
11	Neptune	1.5	60	

How to set up your spreadsheet
1. Copy rows 1 and 2 as shown here
2. Copy columns A and B as shown here.
3. Move to cell C3 and enter your weight.
4. Move to cell C4 and enter the formula =C3*B4
This works out your weight on the moon.
5. Copy cell C4.
Paste it into cells C5 to C11