

Spreadsheets

Lesson 3 – Conversions of measurements

The aim of this lesson is to use formulae within a spreadsheet to convert measurements of length and distance.

Watch the video and use the instructions below and by the end you should be able to:

- Convert measurements in two different ways: (1) by using the numbers and mathematical symbols; and (2) using the formula wizard.
- Apply what you have learned to convert miles to kilometres.

REMEMBER: Always save your work as you go along using a meaningful name.

USEFUL REMINDERS:

- There are 100 cms in a metre
- There are 1.6 km in a mile

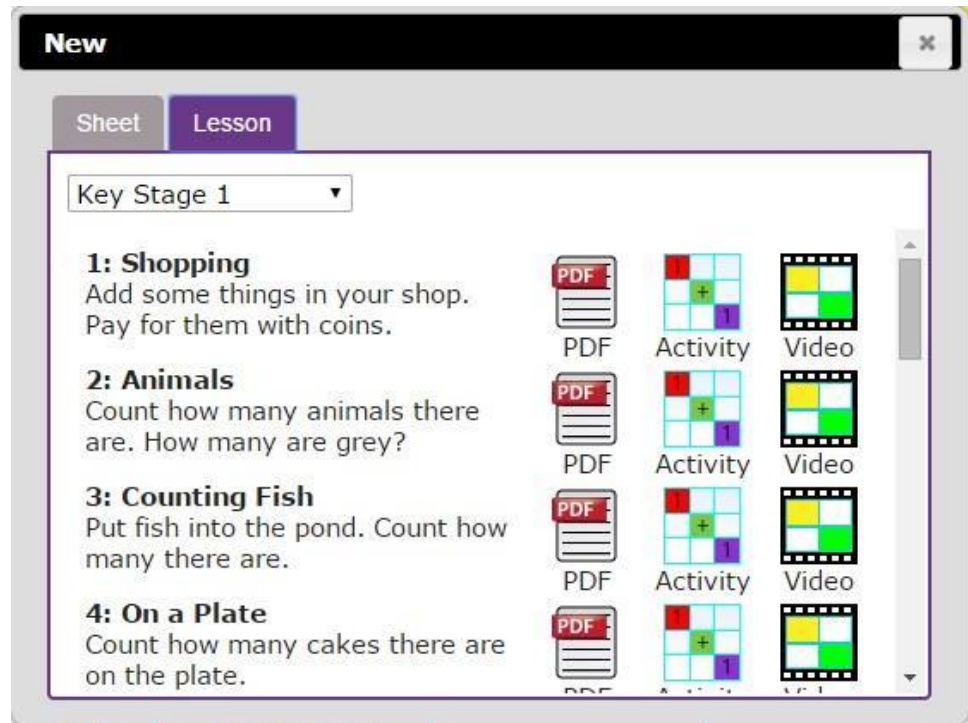
1. You are going to use a spreadsheet to convert measures of length. We are going to practise by converting metres to centimetres. This, for some of you, is a straightforward calculation and you would not bother to use a spreadsheet. However, converting other units of measurement is not always so simple. For example, converting miles to kilometres is not a calculation everyone can do in their head. Why would you ever want to do this? If you have friends visiting from France telling them that it is approximately 290 miles from the Channel Tunnel to Cornwall may not be very meaningful to them. Converting that distance to kilometres will be much more useful.

The next five steps are a reminder on how to open a Spreadsheet in 2Calculate in advanced mode. You can always go back to Lesson 1 if you need a reminder about 2Calculate.

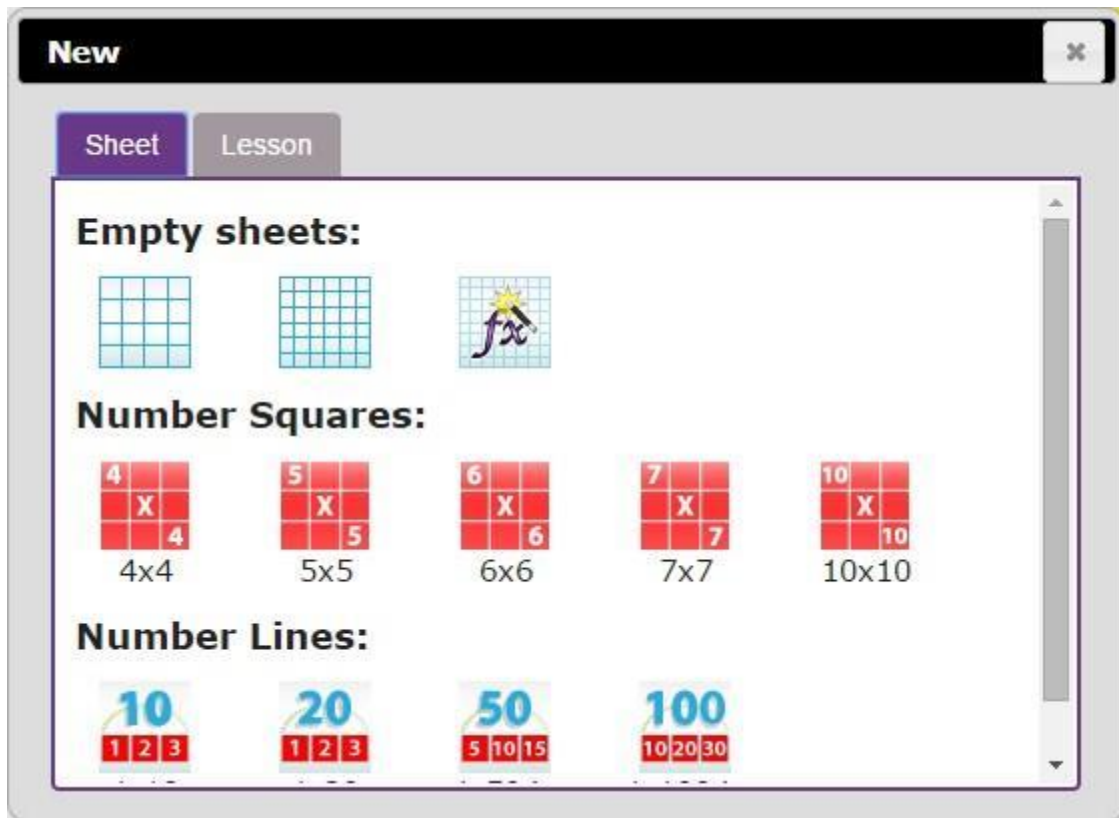
2. Open a new spreadsheet by going to Tools, Maths and Data Handling and selecting 2Calculate



- When 2Calculate starts, there is a smaller screen in the middle with different choices. The labels at the top ('Sheet' and 'Lesson') are called tabs. Click on the 'Sheet' tab.

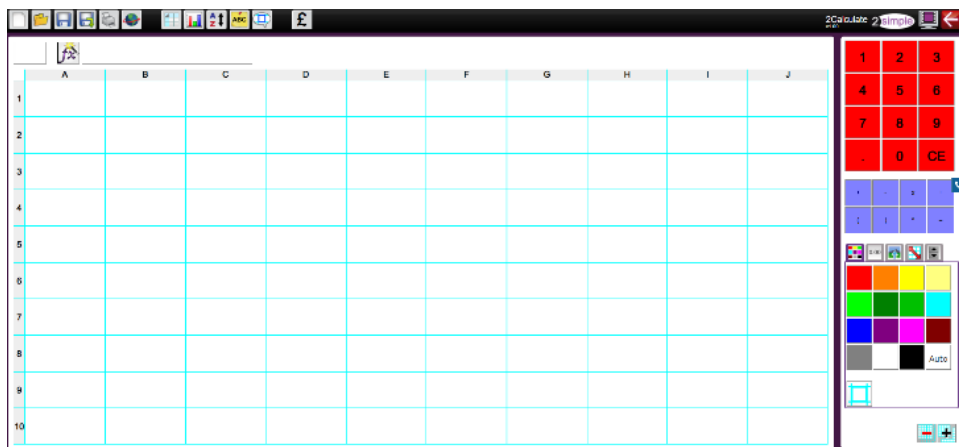


- The Sheet tab also gives a number of choices.



5. Click on the third icon under Empty Sheets . This opens 2Calculate in advanced mode.

6. You will now see a simple spreadsheet:



7. Here is an example of a layout for converting metres to centimetres:

m				cm
1	x	100	=	100
7	x	100	=	700
567	x	100	=	56700

8. Use the numbers and the mathematical symbols on the right of the spreadsheet to enter the calculations.



9. Now try your own table but this time convert the centimetres to metres.

10. Save this spreadsheet (a meaningful name might be measurements1).

11. Next, we will do the same calculations, but this time we will use the

formula wizard button 

12. Open a new spreadsheet in advanced mode.

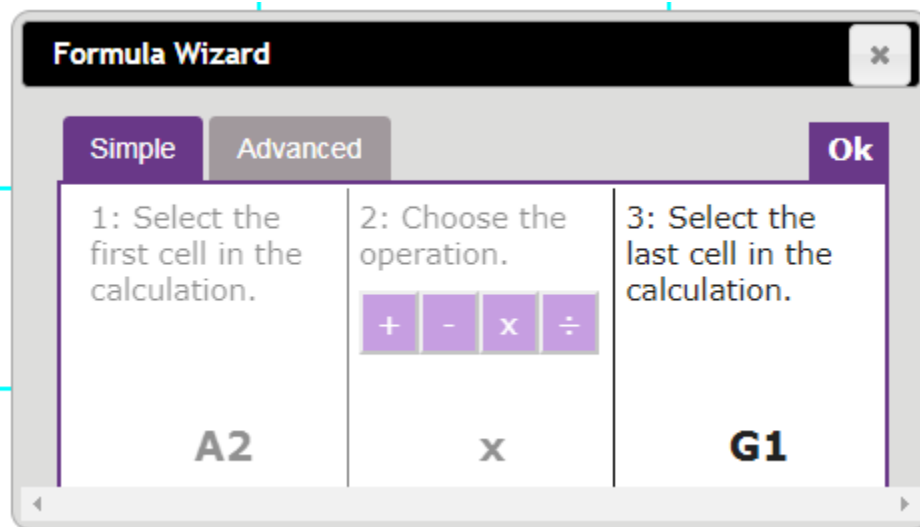
13. Enter the headings as shown below:

A	B	C	D	E	F	G
m	cm		cm	m		100

14. Click on cell B2. We want the number in this cell to equal the number in cell A2 x 100.
15. Click on the formula wizard button. This will open the formula wizard in simple mode:

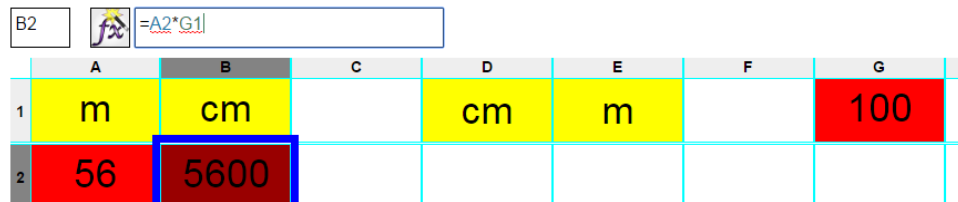


16. Click on cell A2 then choose x as the operator then click on cell G1 (this contains the number 100). Your formula wizard should now look like this:



17. Click OK and then try entering a number in cell A2, the calculation of the conversion to cm should occur automatically.
18. Now create a similar formula for the other cells in column B and test it out by entering different values in column A.

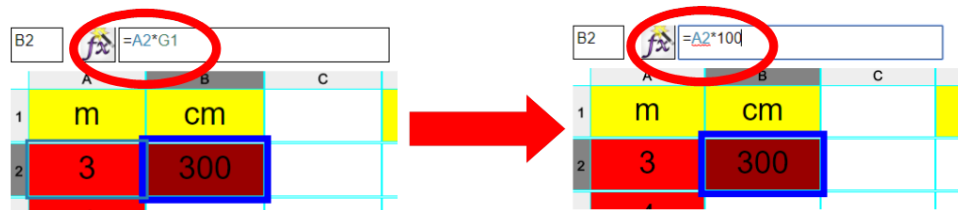
19. To enter formulae, you can also type directly into this bar as in the example below:



	A	B	C	D	E	F	G
1	m	cm		cm	m		100
2	56	5600					

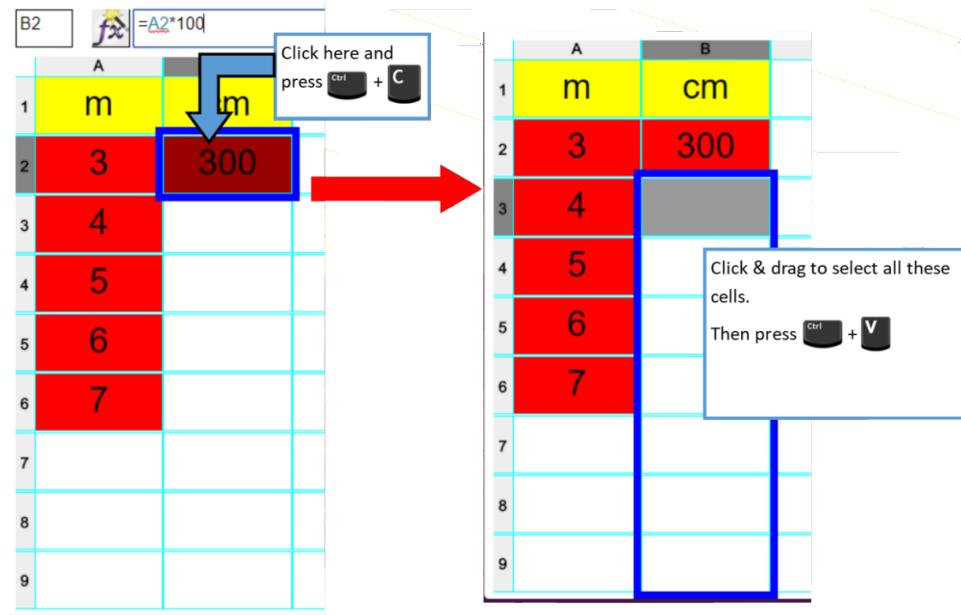
20. The formula in this example says that the cell **B2** = whatever is in cell **A2** x whatever value is in cell **G1** (in this case 100).

21. Click in the formula bar and change the text 'G1' to the number '100'.



	A	B	C
1	m	cm	
2	3	300	

22. Press enter and the resulting number of cm (in cell B2) should not change. The advantage of 'hardcoding' the number 100 in the formula bar is that now the formula can be copied and pasted instead of having to enter it into each cell individually.
23. Enter more values in column A and then copy and paste the formula into column B as shown in the image below:



24. Now create a formula that takes the any numbers you enter in the cells in **column D** and divides by 100 to convert from cm to m in **Column E**.

25. Save your spreadsheet (a meaningful name might be Measurements2).

Challenge

1.6	Km	~	1	mile
0.63	Miles	~	1	kilometre

Using this information can you now create a spreadsheet to convert miles to kilometres and kilometres to miles. You could find the distance from your house to school and convert this.