KS3+ - Spreadsheets topic knowledge organiser,



What is a spreadsheet?

A type of **application software** where data is organised into rows and columns.

- Each column has a letter. E.g. B
- Each row has a number E.g. 4
- A <u>cell</u> is a single space on the spreadsheet identified by a column letter and row number **B4**

	A	В	С
1			
2			
3			
4			
5			



Spreadsheet cells

	A	В
1	First number	45
2	Second number	12
3	Numbers added	57

- <u>Labels</u> contain string data called text A2 holds "Second number"
- **Values** are numbers-B2 holds the value 12
- Calculated what is displayed is computed by a formula B3 is worked out by adding B1 and B2 together.

If a value in B1 or B2 changes the spreadsheet will change B3 using <u>automatic recalculation</u>.



6 Formulas with basic arithmetic operators

= at the start of a cell tells the spreadsheet to use a **formula** to display the result of a calculation.

Arithmetic operators are symbols like + - * and / used in a formula.

Examples of arithmetic operators in formulas.

+ to add cells, E11 will display 15.99 by computing 12.99 added to 3

	С	D	Е
10	Goods	Postage & Packing	Total
11	12.99	3	=C11+D11

- to <u>subtract</u> one cell value from another, *E14 will display 21 which is 23 minus 2*.

	С	D	Е
13	Price	Discount	Amount
14	23	2	=C14-D14

* to multiply two cells, III will display 47.88 which is 3.99 multiplied by 12.

	G	Н	I
10	Cost per item	Number of items	Total value
11	3.99	12	=G11*H11

/ to divide one cell by another 114 will display 17.50 which is 105 divided by 6.

	G	Н	I
13	Winnings	How many winners	Amount per person
14	105	6	=G14/H14



Spreadsheet ranges

The first cell is separated from the last cell in a range by a colon:

	A	В	С
1			
2		10	1
3	8	15	
4		1	12

• **A2:C2** 4, 10, 1.

- **A2:A4** 4, 8, 7.
- **A2:C4** 4, 10, 1, 8, 15, 6, 7, 1, 12.



The SUM function

If more than one number is to be added it is good practice to use the SUM() function. In the spreadsheet below:

- =SUM(B5:D5) is 14 i.e (7+4+3)
- =SUM(C5:C7) is 18 i.e (4+9+5)
- =SUM(B5:D7) is 45 *i.e.* (7+4+5+8+9+6+2+5+1)

	В	С	D
5	7	4	3
6	8	9	6
7	2	9	1



The AVERAGE function

Works out the mean average, all the numbers added divided by the number of numbers.

In the spreadsheet below:

- **=AVERAGE(B5:D3)** is 2 (2+1+3) divided by 3.
- =AVERAGE(C5:C7) is 4 (1+9+2) divided by 3.
- =AVERAGE(B5:D7) is 4.111(2+1+3+8+9+6+5+2+1) divided by 9.

	В	С	D
5	2	1	3
6	8	9	6
7	5	2	



Maximum value function

Will display the **largest** value in a spreadsheet range:

- Al will display 15 the largest value in 4. 10, 8 and 15.
- A2 will display 10 the largest value between 4 and 10.

	A	В
1	=MAX(A4:B5)	
2	=MAX(A4:B4)	
3		
4	4	10
5	8	15



Minimum value function

Displays the **lowest** value in a spreadsheet range:

- A1 will display -3 because it is the lowest value from 4. 10, -3 and 15.
- A2 will display 4 the lowest value from 4 and 10.

	A	В
1	=MIN(A4:B5)	
2	=MIN(A4:B4)	
3		
4	4	10
5	-3	15



@ Cell sizes

In these two examples cells A2 and B2 are not big enough to display the data,

		A	В
ı	2	Tot	##

	A	В				
2	Tot	6E+06				

First solution: widen the column width.

Ì		A	В
	2	Total earnings	6000000

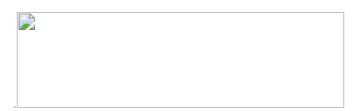
Second solution: increase the height of a row and use text wrapping.

	A	В
2	Total earnings	6000000



Using Microsoft Excel - cell sizes

Column height and row widths can be changed using the Home tab, in the Cells group, click Format



Set a cell wrap from the **Home** tab, in the Alignment group, click the cell(s) then Wrap Text



OPERATION Presenting information.

Information should be easy for the user to read by using colour, fills, merging cell, drawing cell borders, alignment, font sizes and styles.

	A	В	С	D	Е	F	G	Н	I
1	Handy Discount Calculator								
2		Number of items bought							
3			1	2	3	4	5	6+	
4	Amount spent	10	0	0	0	0	0	0.05	
5		50	0.1	0.15	0.2	0.25	0.3	0.35	
6		100	0.2	0.3	0.4	0.5	0.6	0.65	
7		200	0.3	0.45	0.6	0.75	0.9	0.95	
8									

Too many colours makes the information difficult to read.

White Lines

Select the cells that you want to change the colour of:

Click Home > the arrow next to Fill Color Button image or Font Color image



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