# **Spreadsheets**

- 20.1 Create a Data Model
- 20.2 Test the Data Model
- 20.3 Manipulate Data
- 20.4 Present Data

#### **ICT IGCSE Practical – Revision Presentation Spreadsheets Cell References** Columns Α B D **Yellow Cell Reference** - **B2** Green Cell Reference -**D3** Column Rows Reference G This is a range of cells. More than one G12 cell has been selected. G6:G11 A range will be typically used when you are calculating values from a number of 35 From 53 Row 6 cells. To 52 35 10 11 31

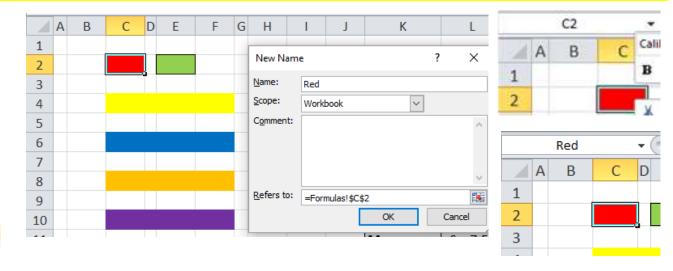
12 Total

209

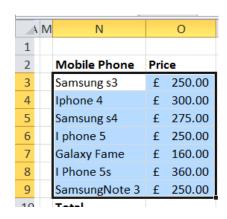
# **Spreadsheets**

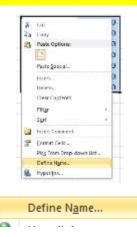
Named cells >> Right Click on the Cell >> Select Define Name >> Enter New Name for Cell

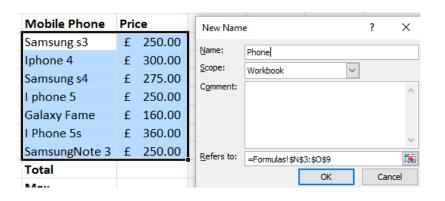




Named ranges >> Right Click on the Cell >> Select Define Name >> Enter New Name for Range

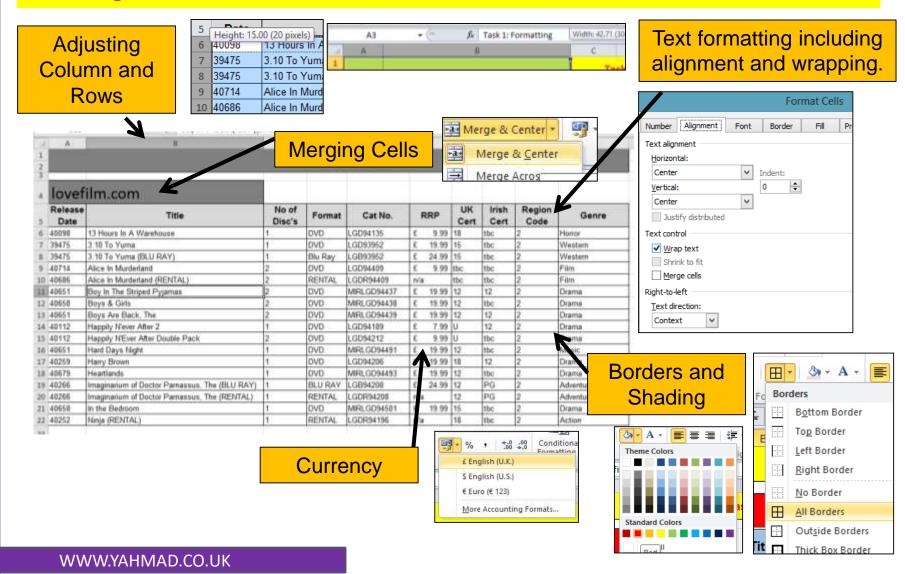






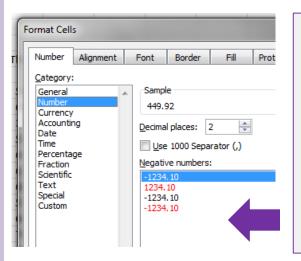
## **Spreadsheets**

#### **Formatting**



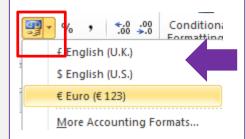
## **Spreadsheets**

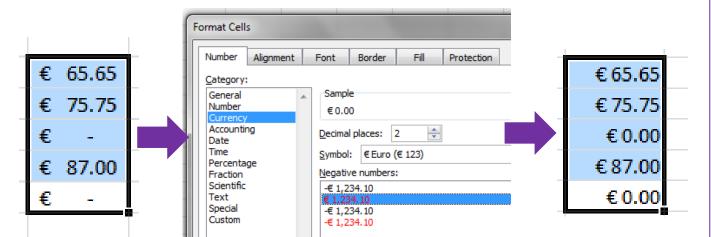
#### **Number Formatting**



## **Tip: Formatting**

You can format a number in numerous ways including using the methods shown on the left.





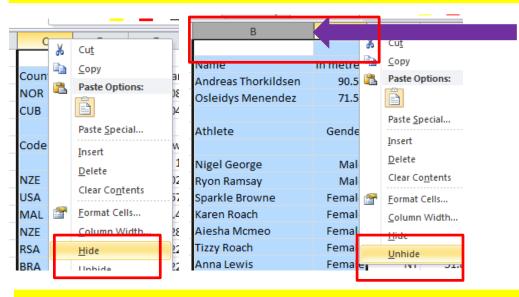
#### **Tip: Currency**

Sometimes a 0 will be displayed as a dash when the numbers have been formatted as a Currency using the method shown on the left.

You need to ensure the formatting of the cell is set to Currency and not Accounting.

## **Spreadsheets**

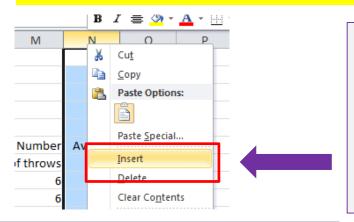
#### **Hide and Show Columns/Rows:**



To hide/show Rows or Columns to you need to right click on either the column letter or row number. You then need to select hide/show.

If you have hidden the C Column then you would have to select the B & D columns to unhide the C column.

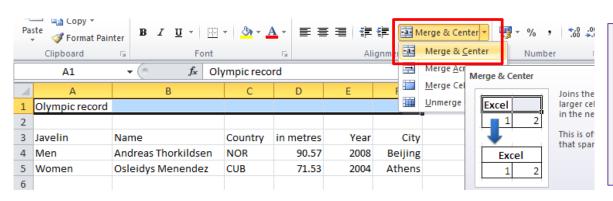
#### **Insert and Delete Columns/Rows:**



- 1) First select either the column letter or row
- 2) Right click your mouse >> select insert
- 3) This will insert a row before the selected column or row.
- 4) If you would like to delete a row or column you simply highlight the row number or column letter >> right click >> Select Delete.

## **Spreadsheets**

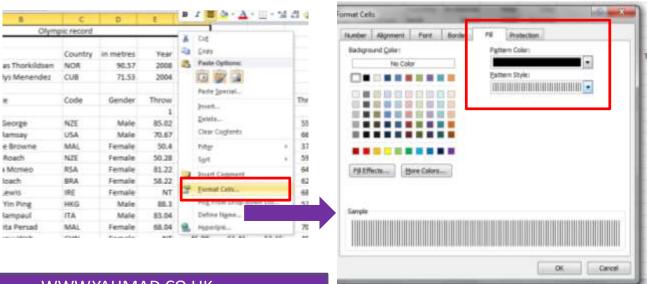
#### **Merging Cells:**



#### **Tip: Merging Cells**

- Highlight the cells you want to merge
- 2. Click on the Merge & Center Icon

#### **Shading and Patterns:**



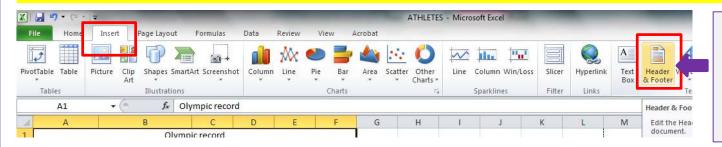
# **Tip: Shading Cells**

You may be asked to put a specific pattern into a cell. You can do this by right clicking your mouse and selecting the Fill Option. You can then select the pattern and colour

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# **Spreadsheets**

#### **Headers & Footers**

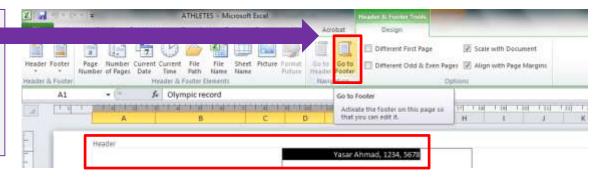


# Header & Footer

Click on **Insert** for header and footer.

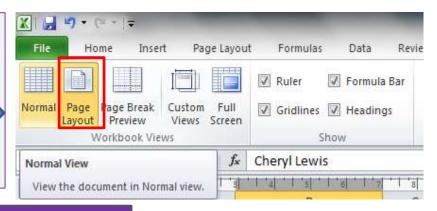
#### **Footer**

You can switch from header and footer. You can also add file names, paths etc.



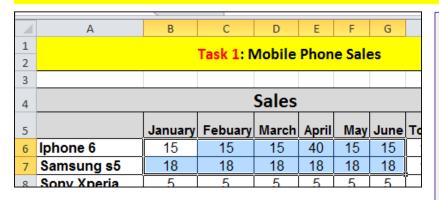
# Back to Normal View

You can go back to the normal view if you select any cell and then click on Normal.

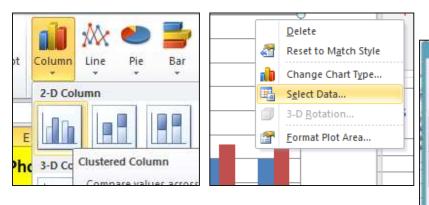


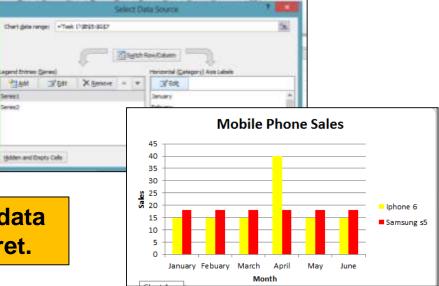
# **Spreadsheets**

#### **Creating Graphs**



- Highlight the cells that will be required to create the chart.
- Select the correct chart (Bar, Pie, line etc.)
- You add labels to your axis by using the select data option.

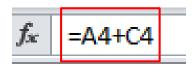




A graph is used to visual display data which is easy to read and interpret.

# **Spreadsheets**

#### **Formulas**



	D4		$f_x$ =A4+C4			
4	Α	В	С	D	Е	
1						
2						
3						
4	6	+	54	60		
5					ΪΙ	
6	4	-	65	-61		
7						
8	3	X	45	135		
9		·				
10	29	-	23	6		

- <u>Formulas</u> can be typed into the formula to bar to work out simple calculations.
- A formula will begin with a = (equal sign).
- Refer to the **cell reference (A4)** before you write your formula.
- You can either type the cell reference or click on the cell.
- You can create simple formulas to:
  - ADD (+)
  - Multiply (\*)
  - Subtract (-)
  - Divide (/)
- Even if you update the numbers in the cell the formula will automatically work out the new value.

January Febuary Marc

## **Spreadsheets**

**Simple Functions** 

Cell Range for Total, Max & Min (Jan Sales).

<u>Cell Range</u> for Total & Average (Monthly Sales).

	Average (Monthly Sales).										
ch	April	Mav	June	otal	Average						
	40	15	15	115	19.167						
	18	18	18	108	18						
	ı	-	-		_						

Iphone 6 15 15 Samsung s5 18 18 18 Sony Xperia 30 2 30 Other 6 10 53 8.8333 40 Total: 44 18 Max: 18 Min 5 2

f<sub>x</sub> =MAX(B6:B9)

The **=Max Function** will find the **highest** number in the **range**.

f<sub>x</sub> =MIN(B6:B9)

The **=Min Function** will find the **lowest** number in the **range**.

=SUM(B6:G6)

The =Sum Function will calculate the total (Sum) of the numbers in the range.

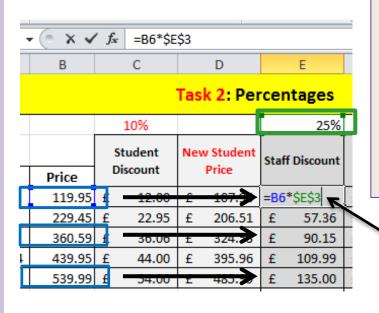
=AVERAGE(B6:G6)

The =Average Function
will calculate the average of
the numbers within the
range.

Functions are predefined formulas and are already available in Excel.

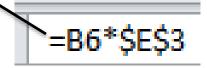
# **Spreadsheets**

#### **Absolute Reference & Relative Reference**



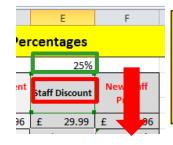
When you use **AutoFill** to **duplicate a formula** into the cells **below** then you must use **absolute cell referencing** if you want the cells to be **referencing** to **one particular cell**.

Absolute cell referencing will **lock** in a particular cell. To absolute cell reference you must insert a **dollar sign before Letter and number of the cell.** 



All the prices will be multiplied by the % in E3.

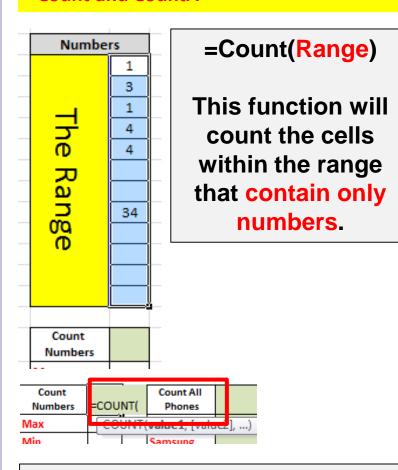
The Price is relative referencing. When the formula is dragged down the formula references to the next price.

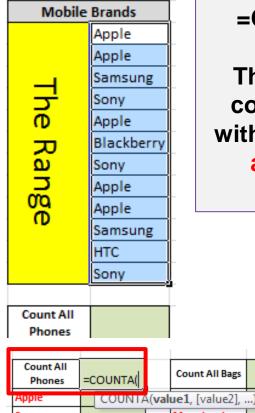


In the example to the left if you do not use absolute cell referencing on the 25% then the Price will be multiplied against the content in E4.

## **Spreadsheets**

#### =Count and CountA





=CountA(Range)

This function will count all the cells within the range that are not empty.

The count function will only Count the cells.

Do not get confused with Sum.

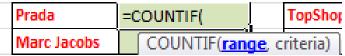
## **Spreadsheets**

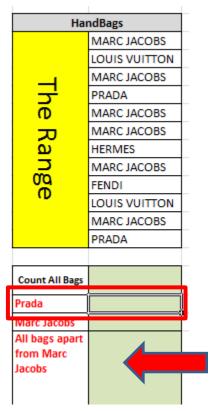
#### **Count IF**

# =Countif(Range,Criteria)

This function will count the cells which contains a specific criteria from the range

Example: We need to count the Prada bags from the range.





Some times you may have to count all cells apart from a certain criteria.

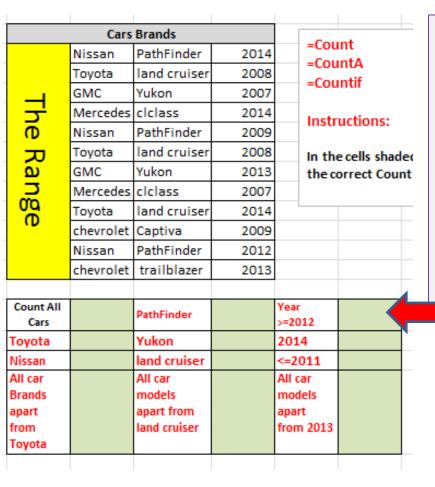
In this example you we want to count all the brands apart from Marc Jacobs

=countif(Range,
"<>Marc Jacobs")

=Countif(Range,"Prada") or =Countif(Range,"I19")
Not: =Countif(Range,"<>criteria")

# **Spreadsheets**

#### **Count Functions with Criteria's**



Some times you may have to use the following to find a specific criteria:

- < less than
- > more than
- = equal to

=countif(range,">=2012")

## **Spreadsheets**

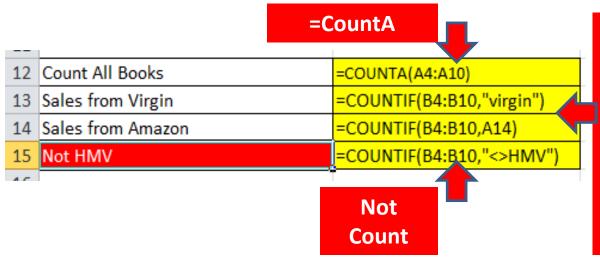
#### **Count Functions**

**=Count(Range)** - This will count a range of cells which only includes numbers.

**=CountA(Range, Criteria)** - This will count all the cells which are not empty.

**=Countif(Range, Criteria)** - This will count a range of cells which includes a specific criteria.

**Not =Countif(Range,"<>Criteria")** – This will count everything apart from the specific criteria.



# =CountIF(Range,Criteria)

When you reference to a criteria you can either write the criteria in speech marks or reference to a cell that contains the criteria.

## **Spreadsheets**

#### **Count Function Exam Examples**

Use a COUNTIF function in cell C7 to count the number of products made by the Supplier with a Ccode that matches the contents of cell B7. This function must include both absolute and relative referencing and must not use a named range. Do not count any entries in rows 1 to 23.

Replicate this function into cells C8 to C21 to count the number of products in stock made by each Supplier.

In cell C2 use a function to count the number of trips to the destination where the value in the *Dcode* column matches the contents of cell B2. This function must use the correct named range.

Replicate this function into cells C3 to C8 to calculate the number of trips booked to each of the other destinations.

In cell B11 use a function to count the number of item codes in this invoice.

# **Spreadsheets**

#### Sum IF

_											
3	Books		Shop		Price	Student Discount	Studer Discount \			1	nal Price inc discount
4	Diary of a Wimpy Kid:		Virgin		5.50	Yes	£	0.5		£	4.95
5	Harry Potter and the Sorcerer's Stor	2	Amazon		6.00	no	£	-		£	6.00
6	The Heroes of Olympus		Virgin		4.50	Yes	£	0.4		£	4.05
7	The Hunger Games		Amazon		5.50	No	£	-		£	5.50
8	The Maze Runner		HMV		6.50	Yes	£	0.6		£	5.85
9	The Book with No Pictures		Virgin		3.50	Yes	£	0.3		£	3.15
10	Mockingjay		Amazon		5.00	No	£	-		£	5.00
11									F		
12	Count All Books		7				Total				
13	Sales from Virgin		3				Highest				
14	Sales from Amazon		0				Lowest				
15	Not HMV		6				Average				
16											
17	Sumif (Final Price	)									
18	Sumup total Virgin Sales		=SUMIF(B4:B10	<mark>,</mark> "\	virgin"	,F4:F10)					
10	Sumun total Amazon Salas			ľ							

Range: The criteria is "virgin". Look at the table and highlight the range of cells which includes "Virgin".

Criteria: You can either reference to a cell or write the criteria in quotation marks.

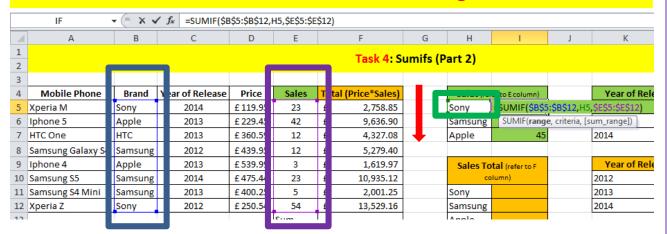
SumRange: This will sum up only the criteria values from the sum range.



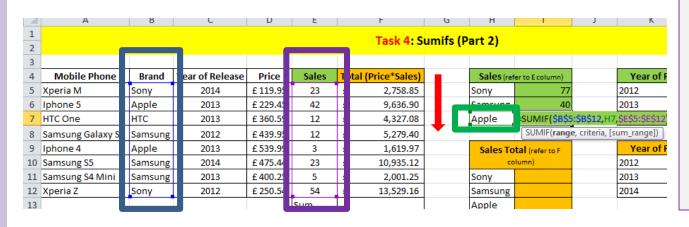
A sumif will only sum (add) up from a specific criteria (condition) from the sum\_range.

# **Spreadsheets**

#### **Sum IF with Absolute and Relative Cell Referencing**



=SUMIF(\$B\$5:\$B\$12,H5,\$E\$5:\$E\$12)



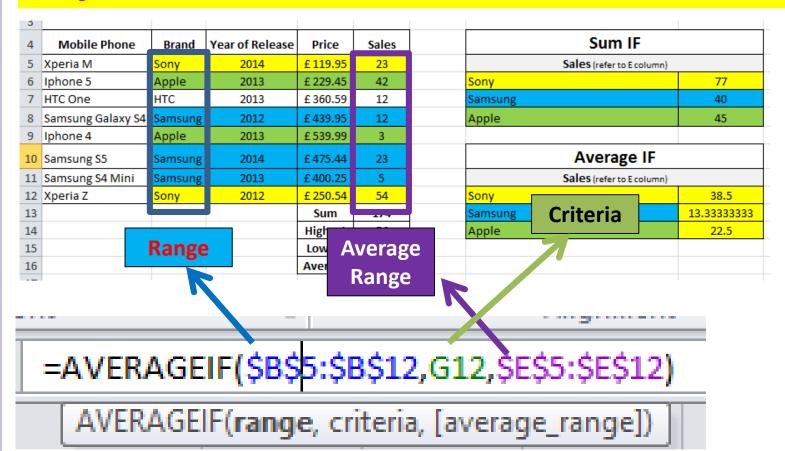
The Range and the Sum Range have absolute cell referencing.

When the formula is replicated the absolute cell referenced cells will stay the same and will not move position.

H5 is relative cell referencing. It will move down when the formula is replicated.

## **Spreadsheets**

#### **Average IF**



A averageif will work out the average from a specific criteria (condition) from the average\_range.

# **Spreadsheets**

#### **SumIF Function Exam Examples**

In cell C2 use a function that includes both absolute and relative referencing to calculate the sum of the *Minutes* column if the *SCode* column contains **GBA**. Do not include rows 1 to 10.

Replicate this function into cells C3 to C8 to sum the total Minutes for each SCode.

In cell D2 use a function to add the total number of days (using the *Duration* column) booked for this destination. This function must use the correct named ranges.

Replicate this function into cells D3 to D8 to calculate the total number of days booked for the other destinations.

In cell C11 use a function to add the total number of days (using the *Duration* column) for holidays starting in the month of January. This function must include both absolute and relative referencing and must not use a named range.

Replicate this function into cells C12 to C22 to calculate the total number of days booked for the other months in 2010.

# **Spreadsheets**

#### **IF Statement**

If the units sold is more than or equal to the targets sales than the target has been met.

										1) Apply Fc
4	Tv Shows	Season	Units Sold	Target Sales	Price	VAT	Final Price	Total Sum	on target	2) Work ou
5	Once Upon A Time	2	23	15	£12.50	£ 2.19	£ 14.69	£ 337.81	=IF(C5>=D	5,"on target","off target")
6	The Walking Dead	2	45	20	£13.50	£ 236	f 15.86	£ 713.81	γ	4) Work ou

#### 1. Logical Test

Is units sold more than or equal to the target sales.

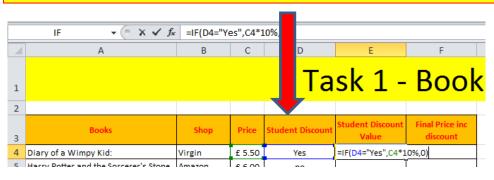
- 2. If the statement is true then the "true statement" will be printed in the cell.
- 3. If the statement is false then the "false statement" will be printed in the cell.



# **Spreadsheets**

#### IF Statement with a Calculation

If student discount has been given ("Yes") then for the true statement you have to calculate 10% of Price. This will be the value for the student discount. If the student discount does not contain "Yes" than the false value (0) will be shown.





1. Logical Test



Z. True



3. False

#### 1. Logical Test

Does the Cell in D4 equal "Yes"

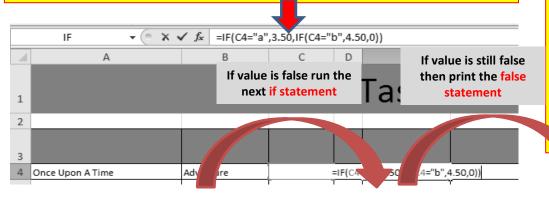
- 2. If the Logical Test is true then the calculation (10% of the price) will be shown.
- 3. If the statement is false then the false value (0) will be shown.

# **Spreadsheets**

#### **Nested IF**

A nested if will contain more than one true statement. In this example the delivery type will be either A, B or Free.

The Nested if will check the first logical Test. If the first test is false then it will check the next logical test. If both tests are false then the false value will be shown.



1. Logical Test 1

Does the Cell in C4 equal "A"

2. If the Logical Test 1 is true then 3.50 will be printed.

3. Logical Test 2

Does the Cell in C4 equal "B"

2. If the Logical Test 2 is true then 4.50 will be printed.

If both logical tests are false the false value (0) will be printed.











1. Logical Test

2. True

1. Logical Test

2.

True

3.

**False** 

# **Spreadsheets**

**Exam Question Example: Nested IF** 

In cell F27 use a formula to calculate the discount using the Sub total, Number of units and the three discount rates A, B and C.

False

#### Multiply the Sub total by:

- Discount A if less than 5 units are sold True
- Discount B if between 5 and 19 (inclusive) units are sold True
- Discount C if 20 or more units are sold.

Invoice created by: 9 Yasar Ahmad 1234 5678 11 Number of items **B12**: 12 Number of units **Logical Test** 14 Discount percentage rates 15 Discount A 0.05 (Number of Units) 16 Discount B 0.15 17 Discount C 19 Item Item Code Type Unit Cost Units -Item Total 20 Trail Special M0027 Mountain 1369 6845 21 Roadster 3 R0021 Road 487 2435 22 Diamond Mountain M0018 Mountain 224 10 2240 23 Trekkerz H0044 500 10 Hybrid 5000 24 Trekkerz Topper H0046 Hybrid -25 26 Sub total 0 27 Discount amount

Step 1: Identify the cells which cells will be used for the formula. Cells are shaded in Yellow for now. (B12, B15, B16, B17 & F26)

**Step 2:** Identify the cell which will be used for the **logical Test (B12)**.

Step 3: Identify the <u>Logical Tests</u> and <u>True</u> <u>Conditions</u>.

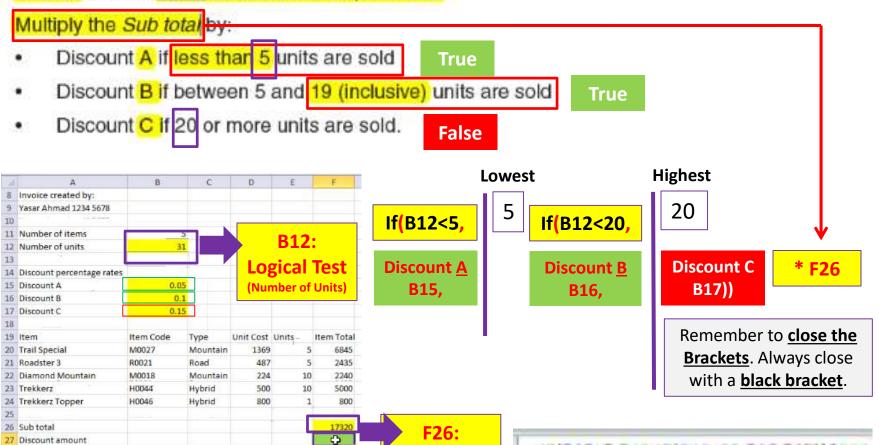
**Step 4:** Identify the **False Condition**.

28 Invoice total

## **Spreadsheets**

**Exam Question Example: Nested IF (Working out the True and False Conditions)** 

In cell F27 use a formula to calculate the discount using the Sub total Number of units and the three discount rates A, B and C.



**Sub Total** 

=IF(B12<5,B15,IF(B12<20,B16,B17))\*F26

28 Invoice total

# **Spreadsheets**

#### **If Statement Exam Example**

In cell D11 use a formula to return N if the value in the Minutes late column is less than or equal to zero or to return Y if the value in the Minutes late column is greater than zero.

#### **Nested IF Exam Examples**

In cell H4 enter a formula to display the word Yes if the hours worked are greater than the contract hours, display the word No if the hours worked are the same as the contract hours or display the word Incomplete if the hours worked are less than the contract hours.

```
=if(Hours Worked > Contract Hours, "Yes",

If(Hours Worked = Contract Hours, "No", "Incomplete"))
```

In cell E3 enter a formula to display the viewing cost if a local taxi is used. If the distance to the property is:

- less than 5 kilometres, the cost will be 2 dollars
- 5 kilometres or more and less than 15 kilometres, the cost will be 5 dollars
- 15 kilometres or more, the cost will be 10 dollars.

## **Spreadsheets**

#### **Nested IF Exam Examples**

In the *Unit Retail* column (Cell F24) use an IF function to calculate the retail price of each unit.

If the Code is D then multiply the named cell Discount by the Unit Purchase price.

If the Code is N then multiply the named cell Normal by the Unit Purchase price.

If the Code is P then multiply the named cell Premium by the Unit Purchase price.

If the Code is not D, N or P then return the Unit Purchase price.

Replicate this function so that the *Unit Retail* price for each item is shown.

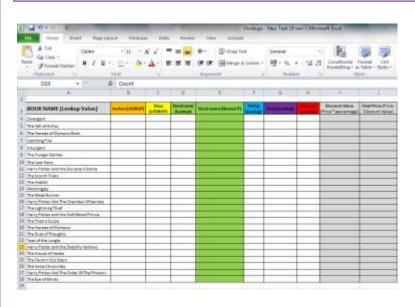
In cell J2 use a formula to calculate the sales commission on this property. The sales commission is \$10,000 plus:

- If the property has an Area (sq ft) of less than or equal to 500 square feet (sq ft),
   5% of the Price
- If the property has an Area (sq ft) greater than 500 square feet (sq ft) and less than 4000 square feet (sq ft), 7.5% of the Price
- If the property has an Area (sq ft) greater than or equal to 4000 square feet (sq ft),
   10% of the Price

# **Spreadsheets**

#### **Vlookup**

Using VLOOKUP is similar to looking up a person's name in a telephone book to get a telephone number. VLOOKUP looks at a value in one column, and finds its corresponding value on the same row in another column.



	A CONTRACTOR OF THE PARTY OF TH	BOOK TORS	0	D.		1	- 6
W.	BOOK NAME (Lookup Value)	Rether	Stop	Louis	Pethe	-	
20	CatchingFire	Suparma Collina	America:	-	40.	€ 4.00	10
50	The Fall of Advan	J.F. B. Tolkieri	Franci's Books	4	-87	6.000	- 5
4	Humy Potest And The Sobtet Of Fire	J.R. Roving	Virgin	. p .	47	€ 4.00	- 2
5	haugen	Veconica Roth	Povefit Books	15	r	45.00	5
80	The Hunger Gener	Stanaresa Colley	Amazon	. 0	45	€ 4.00	- 8
+	The Hannes of Olongua	Rick Ricedah	Powel's Books	12	\$7.	6'4.00	10
E.	Hazy Potter and the Scocurer's Storie	J.K. Rooling	Books A.Millon	. 6	41.	6 6 00	7
9	Allegant	Verorsca Roth	Amazon	4	47	€ 6.00	- 60
11	The Fesh in Our State	Antin Green	Answer:	- D	7	6 6.00	50
n	Mookingyey	Statema Colley	abaloccita .		87	€ 4.00	7
tit.	The Scooth Topic	James Clacking	abebooks	- 0	57	€ 6.00	80
H.	Hamp Primer ford The Chardon Of Secreta	J.K. Bowley	Virgini	D-	d'	€6.00	- 9
10	The Lightness Thief	Rick Rodan	Amazon		17	€ 4.00	10
12	The Place Flumner	James Dischore	akekooks	.11.	4"	6600	73
46	Looking for Allertie	John Green	Amazon:	. 6	T.	€ 8.00	- 8
17	Tire Last Olongian	Rick Rickdon	Vision		57:	65.00	- 5
10	The Fode of Thomaster	January Dasheur	Power's Bush	- 0	87	€6.00	7
to .	The Than's Core	Flink Ricedam	ababooks	3	41	6.400	92
20	Havy Potter and the Deathly Hallows	J.K. Royling	Anaion		57	€ 4.00	7
21	Grego The Dyerlander	Suppline Collins	Amazon	. 5.	5"	6.400	10
	Disregera	Veronica Rotic	skehooks	- 15	57	€6.00	7
D.	They Lost Herp	Flick Florden	America		40	€4.00	8
24	The Bright Dige	Januar Darbow	Amuson	4	57	6.5.00	- 5
100	Harry Potter and the Hall-Eleval Potton	J.K. Rovbyg	designer		4	€ 6.00	100
3	Year of the Aungle	Disparrie Colline	Amazon:	- 3	67	c 6.00	7
11	The Hubbar	A.R. R. Politico	Poped's Books	- 14	T	64.00	- 6
88	The Horosa of Olampus Book	Ret Rodan	Virgin	1	81	€ 4.00	- 50
in.	Hats Potes And The Dride: Dr The Phoese	J. H. Roving	Amazon:	2	57	64.00	- 52
30	The East of Minds	James Daybour	America	7	67	E8.00	10
	Hamp Power and the Principle of Actuation.	J. Mr. Phys. Rev.	Amazon	. 0	4"	£4.00	55

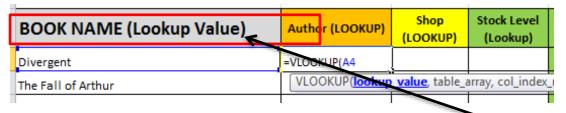
Table\_Array or lookup table

We need to use a lookup function to find the corresponding data from the lookup table for each book title.

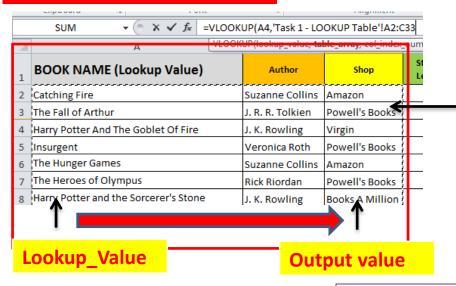
### **Spreadsheets**

#### Vlookup

#### 1. Lookup\_Value



#### 2. Table\_Array



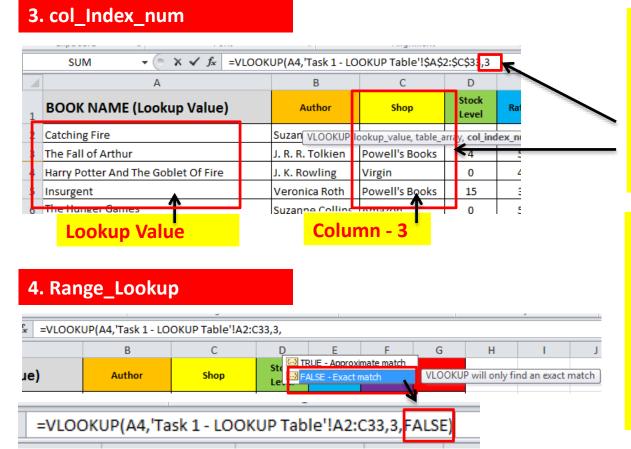
- 1) Select the lookup value. The lookup value will appear also in the lookup table (table\_array).
- 2) Select the lookup table (table\_array). This may be in the same sheet, next tab or another excel file. Select the lookup value and then the output value.

Make sure you absolute cell reference the table\_arrray.

Tip: If the table array is on an external sheet then it will automatically Absolute Cell Reference the table.

## **Spreadsheets**

#### **Vlookup**



3) Select the column in the table for the output value.

In this example the shop is in the third column of the selected table so therefore you would write 3.

4) You need to select false which is an exact match. This means the Vlookup will only find an exact match for the output value.

Remember to close the brackets.

# **Spreadsheets**

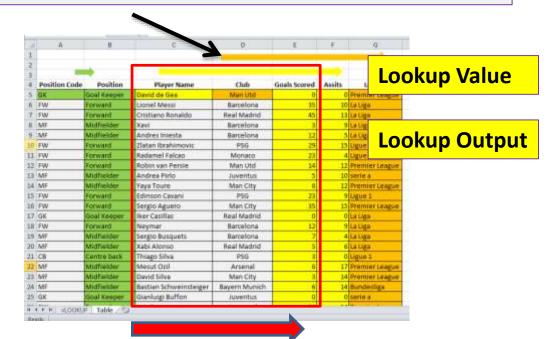
**Look up a Output Value from a Table Arrray** 

Tip: When you are looking at the table array you must start from the cell you are looking up. In this Example:

Lookup Value – Player Name (C5) Lookup Output – Goals Scored (E5)

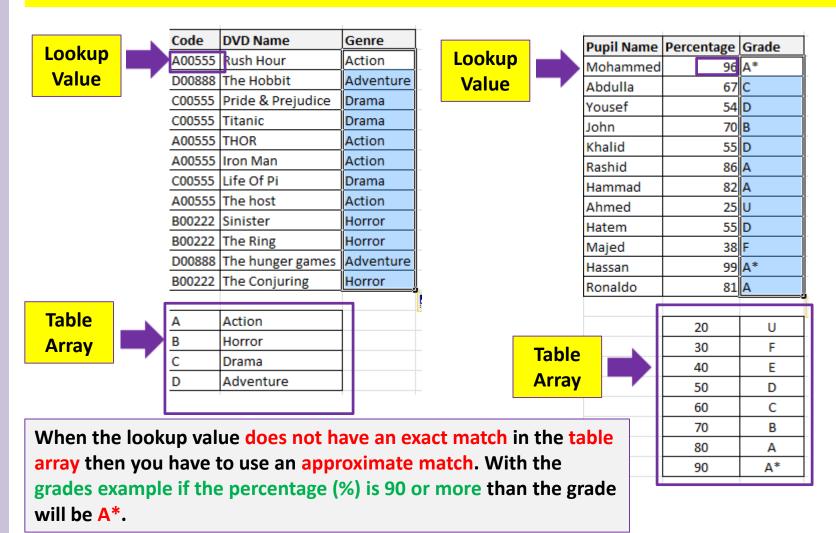
The output value will always be right of the lookup value.

Player Name	Club	Goals Scored
David de Gea	Man Utd	
Sergio Busquets	Barcelona	
Manuel Neuer	Bayern Munich	
David Silva	Man City	
Zlatan Ibrahimovic	PSG	
Xabi Alonso	Real Madrid	
Yaya Toure	Man City	
Mesut Ozil	Arsenal	
Gerard Pique	Barcelona	
Radamel Falcao	Monaco	
Franck Ribery	Bayern Munich	
Sergio Ramos	Real Madrid	



## **Spreadsheets**

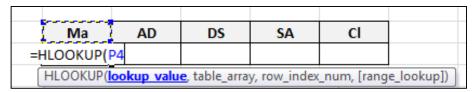
#### **Approximate Lookup**



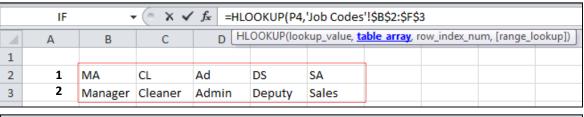
# **Spreadsheets**

HLOOKUP works horizontally. You will be required to select the row rather than a column for a VLOOKUP.

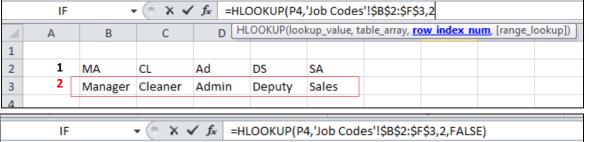
Ma	AD	DS	SA	Cl
Manager	Admin	Deputy	Sales	Cleaner



1) Select the lookup value.



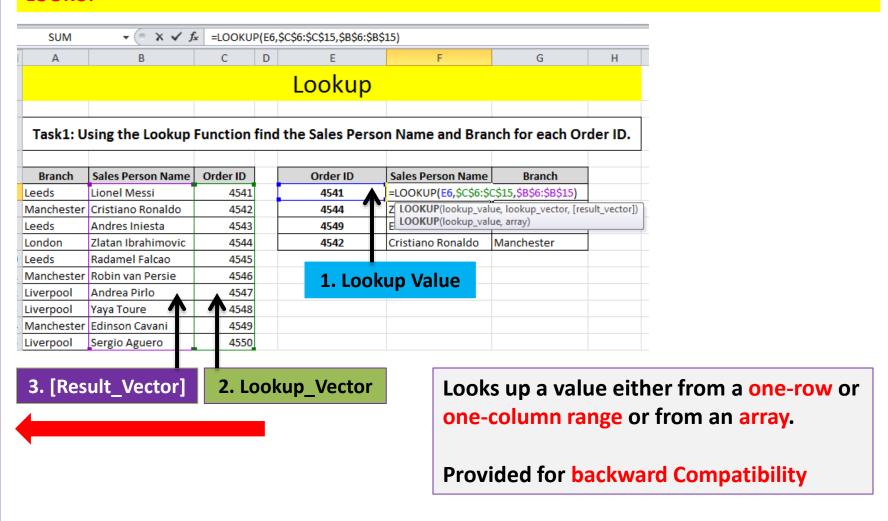
2) Select the Table Array and absolute cell reference if required.



- 3) Select the Row to find the output data. In this case the data is in Row 2.
- HLOOKUP(lookup\_value, table\_array, row\_index\_num, [range lookup] Α В C 1 2 MA CL Αd DS SA 3 Manager Cleaner Admin Deputy Sales
- 4) You need to select Approximate or exact match.

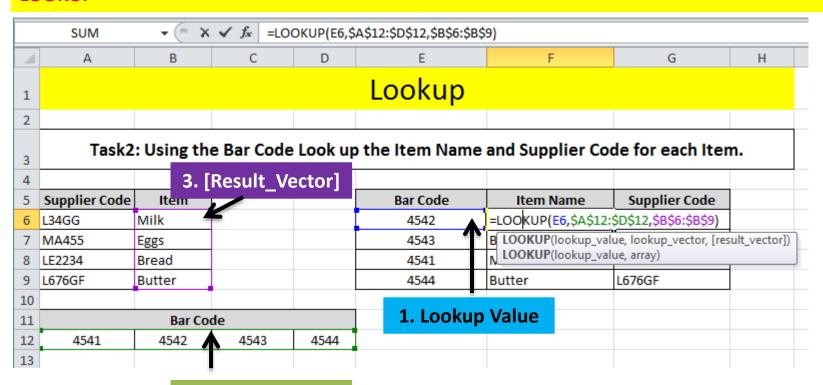
# **Spreadsheets**

#### **LOOKUP**



## **Spreadsheets**

#### **LOOKUP**

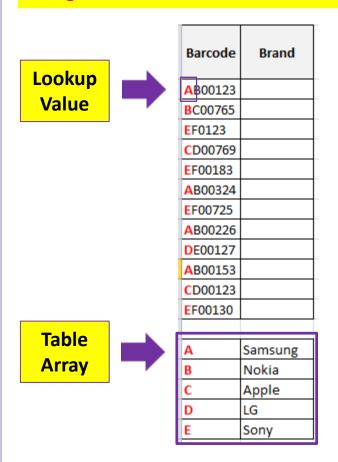


2. Lookup\_Vector

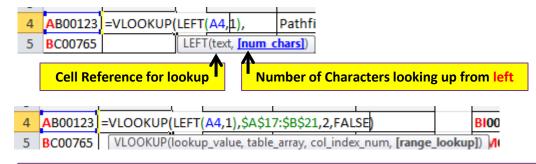
The Lookup\_Vector and the Result Vector needs to be the same length (number of cells).

# **Spreadsheets**

#### **Using Extract with LOOKUP Functions**



In this example the first character of the Barcode needs to be used a single lookup value in the Table array shown below the table. The match will be an exact Match.



#### **Extract Functions:**

**Left:** Returns the specified number of characters from the start of a text string.

Right: Returns the specified number of characters from the end of a text string.

Mid: Returns the character from the middle of a text string, given a starting position and length.

In cell C20 use a formula to look up the type of cycle. Use the first character of the *Item Code* as the single lookup value and the named range *Type* for the array.

# **Spreadsheets**

#### **Lookup Exam Examples**

In cell D22 use a lookup function to show the Job Description. Use the <u>Code column</u> for the lookup value and the <u>Job codes</u> table for the array. This function must include both absolute and relative referencing and must not use a named range.

Replicate this function so that the job description is shown for each of the other employees.

In cell G22 use a formula to calculate the pay for this employee. This will look up the rate of pay from the named range RATE and multiply it by the number of hours worked. Choose an appropriate format for this cell. This function must not include absolute cell referencing.

Replicate this formula so that the amount of pay is shown for each of the other employees.

In cell D22 use a lookup function to show the job description. Use the Job code column for the lookup value and the range code for the array.

Replicate this function for each employee.

# **Spreadsheets**

#### **Lookup Exam Examples**

In the <u>Destination</u> column use a lookup function to show the destination name. Use the <u>Code</u> column for the lookup value and the file **JXDEST.CSV** for the array. This function must include both absolute and relative referencing and must not use a named range.

Replicate this function so that the destination name is shown for each of the codes.

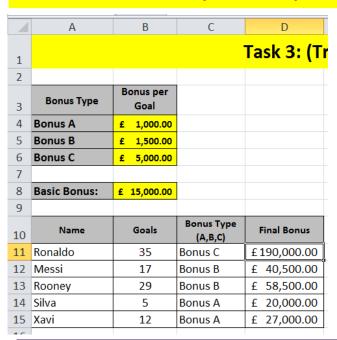
In the Name column use a lookup function to show the staff name. Use the SCode column for the lookup value and the external file N8CODE.CSV for the array.

Make sure that you use both absolute and relative referencing within your function.

Replicate this function so that the names for each of the 7 members of staff are shown.

# **Spreadsheets**

#### **Test the Data Model (Test Table)**



Use a nested if statement to work out the <u>Bonus Type</u> (A,B,C) & <u>Final Bonus</u>

#### Add <u>Basic Bonus</u> to (Goals\* Bonus Type):

- If goals scored is less than is <u>less than 16</u> than goal bonus is type <u>A</u>.
- More than or equal to 16 and less than 30 than goal bonus is type B.
- More than or equal to 30 than goal bonus is type <u>C</u>.

	Input		Output				
Cell reference	Data chosen	Test Data Type	Cell reference	Expected	Actual		
B11	1	Extreme	C11	Bonus A	Bonus A		
B12	25	Normal	C12	Bonus B	Bonus B		

# **Spreadsheets**

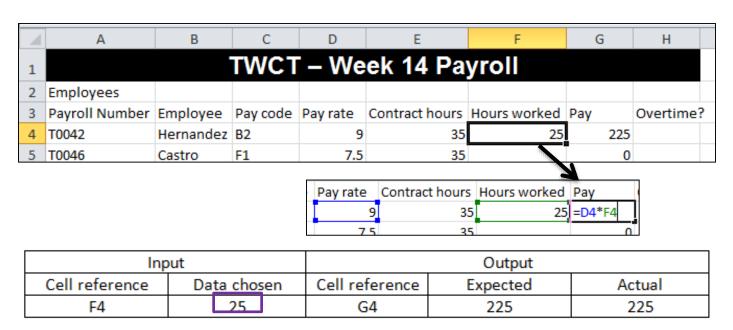
#### **Test the Data Model (2015 Nov Example)**

11 In cell G4 enter a formula to calculate the pay for this employee using their pay rate and hours worked.

Select appropriate data that you can enter into cell F4 to test this formula. Enter this data in the *Data chosen* column of the test table in your Evidence Document.

Record in the Expected column of your test table the value you expect to see in cell G4.

Enter your test data into cell F4 and record the result in the Actual column of your test table.



Tip: You should always expect to see the actual outcome before you complete the formula.

# **Spreadsheets**

#### **Test the Data Model**

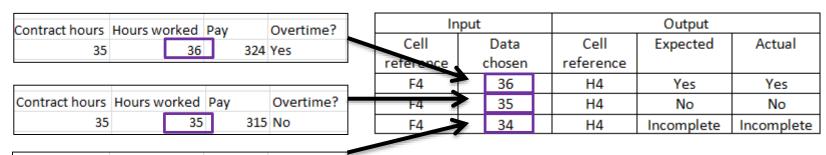
12 In cell H4 enter a formula to display the word Yes if the hours worked are greater than the contract hours, display the word No if the hours worked are the same as the contract hours or display the word Incomplete if the hours worked are less than the contract hours.



Select **three** items of appropriate data that you can enter into cell F4 to test this formula. Enter this data in the *Data chosen* column of the test table in your Evidence Document.

Record in the Expected column of your test table the output you expect to see in cell H4.

Enter each item of test data into cell F4 and record each result in the *Actual* column of your test table for each item of test data.



# **Spreadsheets**

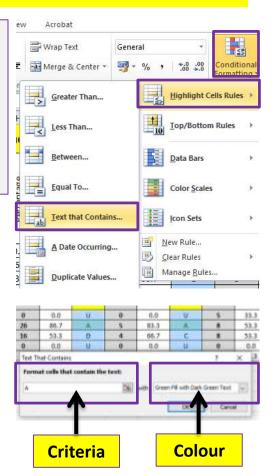
#### **Conditional Formatting**

Highlights (Colour scales) cells based on criteria.

- 1) Highlight the cell range in which you wish to apply Conditional Formatting.
- 2) Click On Home >> Conditional Formatting.
- 3) Click on Highlight Cell Rules
- 4) Select the Criteria type (Less Than, Between, Equal To, Contains etc)
- 5) Enter the criteria.



	-1	Class Tracking Sheet												
	Class A	Exam Attendance	Word Processing	Percentage	Grade	Database (Access)	Percentage	Grade	Mail Merge & Housestyle	Percentage	Grade	Powerpoint Slide Master	Percentage	Grade
1	James.	1	0	0.0	U	0	0.0	U	0	0.0	U	4	33.3	F
2	Abdulla	1	17	63.0	0	26	86.7	A	5	83.3	A		53.3	D
3	Mohammed	T.	13	48.1	10	16	53.3	0	4	66.7	10	-8	53.3	D
4	Aluned	Α	0	0.0	0	0	0.0	U	0	0.0	U	0	0.0	U
5	Bob	1	22	81.5	A	13	43.3	-		#3.3	A	14	93.3	A.

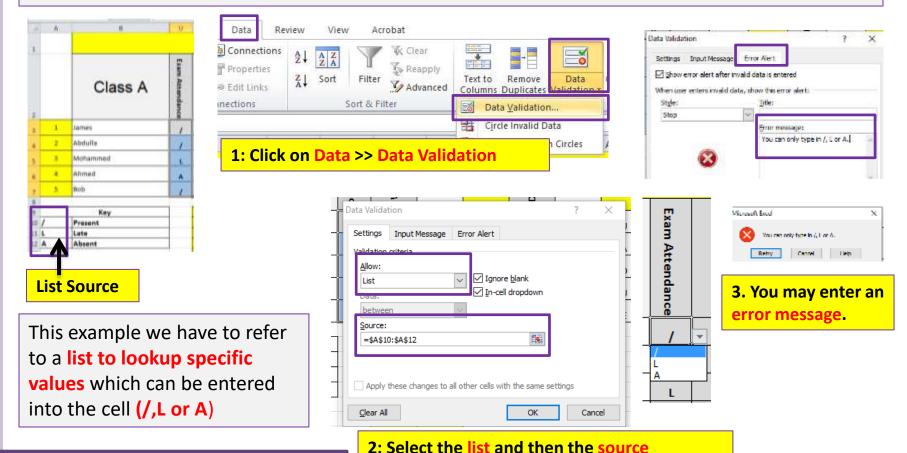


A\*C – Green
D – Amber
Less than D - Red

# **Spreadsheets**

#### **Validation**

- Data Validation prevents invalid data from being entered into a cell.
- For example, you could reject invalid dates or numbers greater than a given value.
- You can also force input to be chosen from a dropdown list of values you specify.



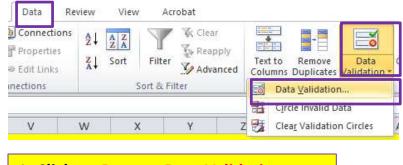
WWW.YAHMAD.CO.UK

# **Spreadsheets**

#### **Validation**



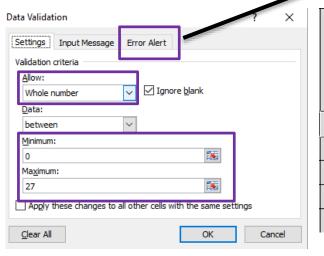
This example we have to only allow marks to be entered from 0 to 27 for the Word Processing Exam. If a mark outside of the range is entered than an error message will be shown.



1: Click on Data >> Data Validation

3. You may enter an error message.

Grade



stabase (Access) Word Processing Percentage Percentage Microsoft Excel × 28 You can only enter a mark from 0 to 27. 17 Retry Cancel <u>H</u>elp 13 0 0.0 0 0.0 U 22 81.5 43.3

Grade

2: Select the Whole Number and then enter the Min and Max numbers in the range.

# **Spreadsheets**

# **Rounding**

	Round to 1DP	Round Up	Round Down	INT
<mark>65.69</mark>	=ROUND(C3,1)	=ROUNDUP(C3,0)	=ROUNDDOWN(C3,0)	=INT(C3)
<mark>75.75</mark>	=ROUND(C4,1)	=ROUNDUP(C4,0)	=ROUNDDOWN(C4,0)	=INT(C4)
64.23	=ROUND(C5,1)	=ROUNDUP(C5,0)	=ROUNDDOWN(C5,0)	=INT(C5)
<mark>87.87</mark>	=ROUND(C6,1)	=ROUNDUP(C6,0)	=ROUNDDOWN(C6,0)	=INT(C6)
34.23	=ROUND(C7,1)	=ROUNDUP(C7,0)	=ROUNDDOWN(C7,0)	=INT(C7)
Total	=ROUND(SUM(D3:D7),0)	=ROUNDUP(SUM(E3:E7),0)	=ROUNDDOWN(SUM(F3:F7),0)	=INT(SUM(G3:G7))









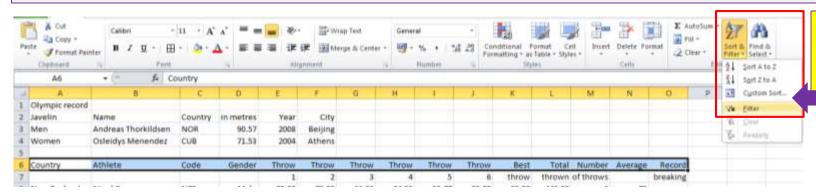
	Round to 1DP	Round Up	Round Down	INT
£65.69	£65.70	£66.00	£65.00	£65.00
£75.75	£75.80	£76.00	£75.00	£75.00
£64.23	£64.20	£65.00	£64.00	£64.00
£87.87	£87.90	£88.00	£87.00	£87.00
£34.23	£34.20	£35.00	£34.00	£34.00
Total	£328.00	£330.00	£325.00	£325.00

=ROUND	Rounds a number to a specified number of digits.	
=ROUNDDOWN Rounds a number down, towards zero		
=ROUNDUP	Rounds a number up, away from zero	
=INT	Rounds the number down to the nearest integer	

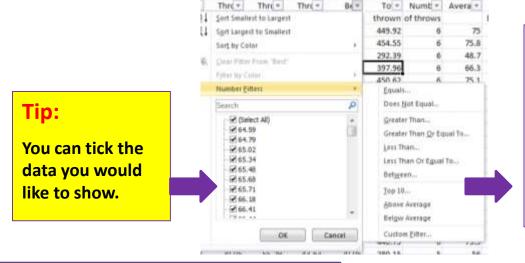
# **Spreadsheets**

#### **Filtering**

Tip: Filtering is used to interrogate the data very similar to how a query works in Access. Highlight the cells you want to filter and then select the filter icon from the tool bar.



Data can be sorted



Tip: You can also do additional filters:

Equals ---- =
Greater Than --- >
Greater Than Or Equal To --- >=
Less Than ---- <

Between ---- Data And Data

# **Spreadsheets**

#### **Filtering**

Interrogate the data to find all the calls where the Length is Long and where the SCode is VCR or RSP

Print this data.

Make sure that your name, Centre number and candidate number are printed in the header of the page.

Interrogate the data to find all the calls where the Length is Long

Print this data.

Make sure that your name, Centre number and candidate number are printed in the header of the page.

Interrogate the data, to find all the **Red** items with a *Unit Purchase* price between **0.51** and **0.58** Euros.

Interrogate the data to find all the items where the <u>Dcode is CUB or USA</u> and the discount is Y.

# **Spreadsheets**

#### **Show Formulas**



Number	Average	Record
of throws		breaking
=COUNTIF(E8:J8,"<>NT")	=ROUND(L8/M8,1)	=IF(D8="Male",IF(K8>\$D\$3,"yes","no"),IF(K8>\$D\$4,"Yes","no"))
=COUNTIF(E9:J9,"<>NT")	=ROUND(L9/M9,1)	=IF(D9="Male",IF(K9>\$D\$3,"yes","no"),IF(K9>\$D\$4,"Yes","no"))
=COUNTIF(E10:J10,"<>NT")	=ROUND(L10/M10,1)	=IF(D10="Male",IF(K10>\$D\$3,"yes","no"),IF(K10>\$D\$4,"Yes","no"))
=COUNTIF(E11:J11,"<>NT")	=ROUND(L11/M11,1)	=IF(D11="Male",IF(K11>\$D\$3,"yes","no"),IF(K11>\$D\$4,"Yes","no"))
=COUNTIF(E12:J12,"<>NT")	=ROUND(L12/M12,1)	=IF(D12="Male",IF(K12>\$D\$3,"yes","no"),IF(K12>\$D\$4,"Yes","no"))
	of throws =COUNTIF(E8:J8,"◇NT") =COUNTIF(E9:J9,"◇NT") =COUNTIF(E10:J10,"◇NT") =COUNTIF(E11:J11,"◇NT")	of throws  =COUNTIF(E8:J8,"<>NT") =ROUND(L8/M8,1)  =COUNTIF(E9:J9,"<>NT") =ROUND(L9/M9,1)  =COUNTIF(E10:J10,"<>NT") =ROUND(L10/M10,1)  =COUNTIF(E11:J11,"<>NT") =ROUND(L11/M11,1)

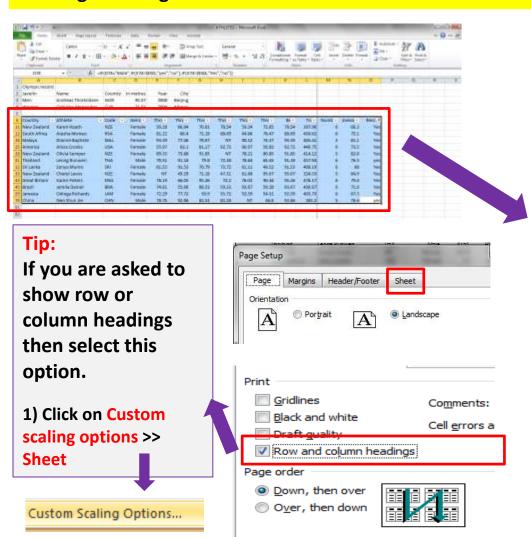
Tip: Make you can see the full formula – you may have to adjust the column widths before you print.

To show formulas click on the formula tab and click on show formulas. To Return to normal view you have to click the Show Formulas Icon.

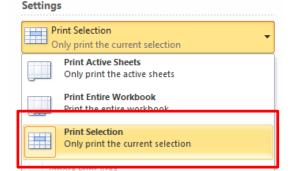
You will definitely be asked to print your formulas.

# **Spreadsheets**

#### **Printing & Saving**



Tip: Make sure you select the appropriate print settings.



Tip: Make sure all the columns fit to one page if requested.

