

# INTRODUCTION TO EXCEL

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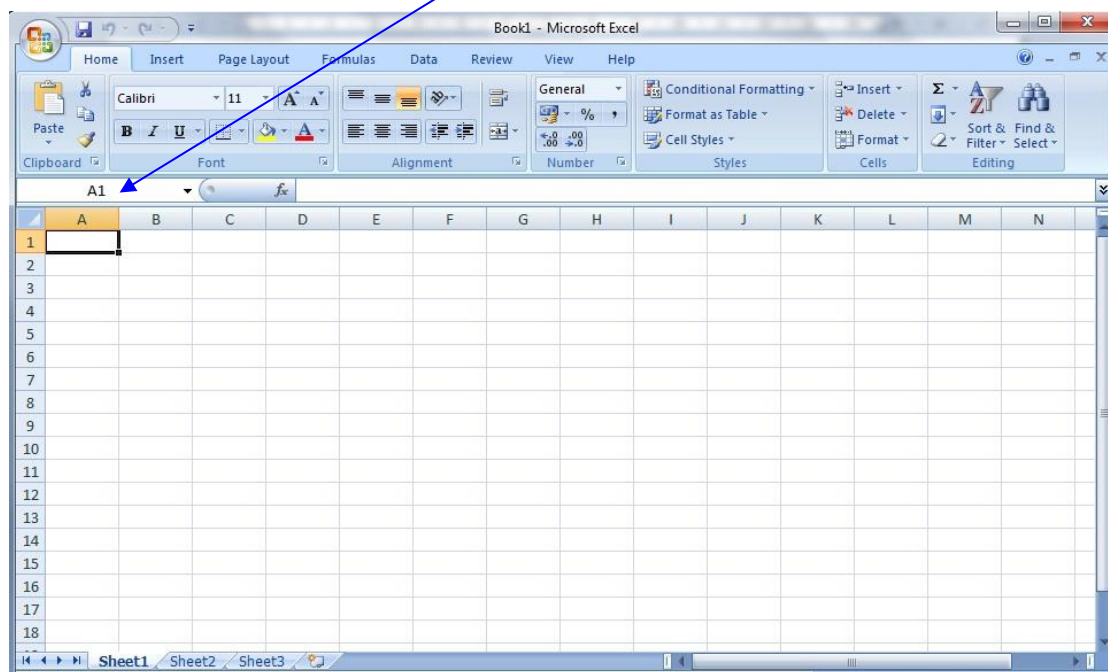
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## The Excel Workbook Window:

Spreadsheets are programs designed to allow handling of data with relative ease. Calculations ranging from simple addition to the most complex are automatically handled by the use of formulae.

Similar to the Word processing layout except that the editing area is divided into separate vertical columns (A, B, C, etc.) and horizontal rows (1, 2, 3, etc.) Where each separate column intersects with each individual row we are presented with an individual cell, which can be readily referenced individually. The cell highlighted in the picture is therefore: Cell A1.

The “Current Cell” is displayed in the name box at the top left of the screen.



### Navigation between cells:

You may select a cell by either

- Pointing to it and left clicking in it with the mouse.
- Using the cursor arrow keys (left of the numeric keypad).

**Entering Data:** Data to be entered may be of various types e.g.:

- Text or Numeric or as a formula.

Calculations can only be performed on Numeric data and if a cell included in a calculation contains text, the following error message **may** result: **#VALUE!**

**EXERCISE:**

Enter the following numbers in the cells shown.

	A
1	34
2	67
3	12
4	36
5	

AutoSum feature:

Highlight the cell "A5".

Select the "AutoSum" tool from the top right of screen

	A
1	34
2	67
3	12
4	36
5	



The following formula will automatically display **=SUM(A1:A4)** while cells "A1" to "A4" are surrounded by a highlighted border.

Press the "Return" key to accept this formula.

This highlights cell "A6" and displays the sum of the contents of cells "A1" to "A4" within cell "A5".

If the value of any of the included cells is subsequently changed, the value in cell "A5" will change automatically.

	A
1	34
2	67
3	12
4	36
5	149
6	

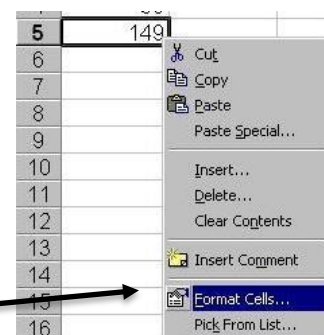
**EXERCISE:**

Formatting Cells:

If we require cells to display the € sign, we must format the cell to automatically insert such characters, or the calculations cannot be automatically processed.

Click into cell A5

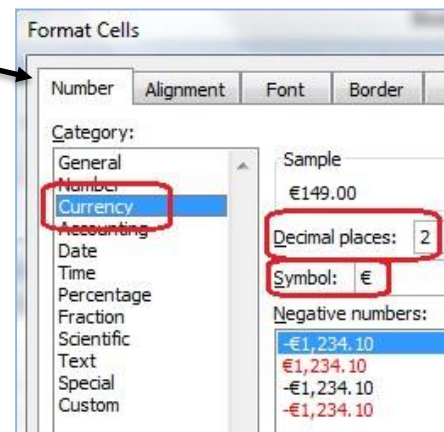
Right click on the highlighted cell to display the "Mouse dropdown" menu and select **"Format cells"**



From the “Number” tab,

select “Currency”, “two decimal places” and “€” symbol, then click “OK”

It will be found that the format of cell “A5” now changes to include the Euro sign and two decimal places.



	A5	=SUM(A1:A4)		
	A	B	C	
1	34			
2	67			
3	12			
4	36			
5	€149.00			

While the cell displays “€149.00”, it should be noted that the **formula bar** above the main editing screen displays the actual formula in use (in this case, the sum of the cell range A1 to A4)

**Fill in numbers in cells “B1” to “D4” inclusive.**

	A	B	C	D
1	34	46	53	64
2	67	85	25	53
3	12	34	56	79
4	36	78	97	66
5	€149.00			

**Copying Cell contents – copying formulae:**

Having filled in appropriate figures as outlined above it is possible to simply copy the formula from cell “A5” across a range of cells in the same row, as follows.

- ☐ Highlight cell “A5”.
- ☐ Move the cursor to the bottom right corner of cell “A5” until the cursor changes to a black cross.
- ☐ With the left mouse button held down, drag the mouse cursor across to include cells “B5, C5 and D5”.
- ☐ Release the mouse button to see the sum for each column displayed.

	A	B	C	D
1	34	46	53	64
2	67	85	25	53
3	12	34	56	79
4	36	78	97	66
5	€149.00			

Select cell **E1** and use “**AutoSum**” to add the contents of the cell range **A1:D1**. Format the cell to include the € sign and two decimal places. Press the **Return** key.

E
€197.00
€230.00
€181.00
€277.00

Highlight cell **E1** and move the cursor to the bottom right corner until it changes to a black cross.

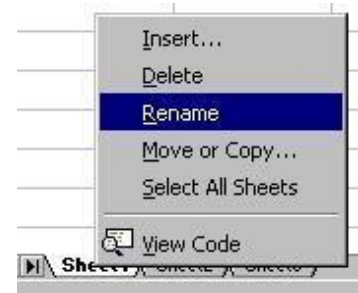
With the left mouse button held down, drag the mouse cursor down to include cells **E2, E3 and E4**

Release the mouse button to see the sum for each row displayed.

### Renaming a worksheet

At the bottom left of the screen, a tab ‘Sheet1’ is displayed.

**Right click** on “**Sheet 1**” to display a pop-up menu. Click “**Rename**” and type in your course code.



### Inserting a new column

Highlight column “**A**” by right-clicking in its heading.

Select “**Insert**” from the drop-down menu. This inserts a column to the left.



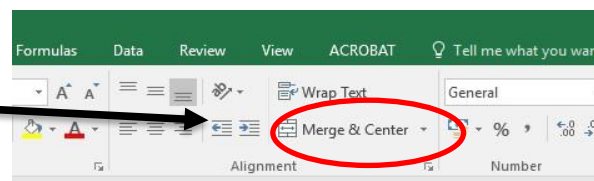
### Inserting a new Row

Highlight row “**1**” by right clicking on “**1**”. Select “**Insert**” from the drop-down menu. This inserts a row above.

### Merging Cells

When entering text such as a heading to span across a page, it is often helpful to “**Merge**” the cells together, across the top row. For this, the “**Merge and Centre**” tool is used.

Highlight cells “**A1**” to “**G1**” and select the “**Merge and Centre**” tool.



If it is necessary **to unmerge** cells then simply re-click the “**Merge and Centre**” tool

Enter the text “**Title**”, in the merged cells.

## Shading Cells

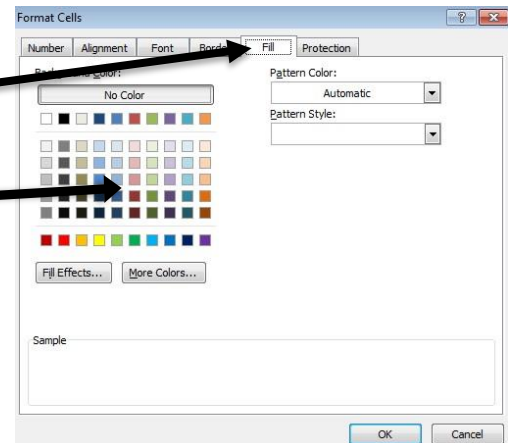
Highlight the cells previously merged by simply clicking into it.

Right click on the highlighted cells and select “**Format Cells**”.

Select the “**Fill**” tab.

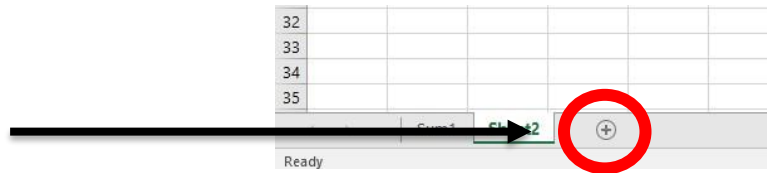
Choose a light colour and click OK.

If necessary, to deselect shading, with the cells highlighted as before, select “No colour”.



## Charts

Click the plus tab at the bottom of the page to open a new sheet.



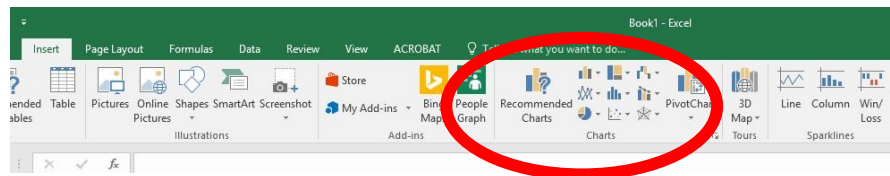
Rename the new sheet 'Bar Chart'

Enter the following data in the same cells as indicated:

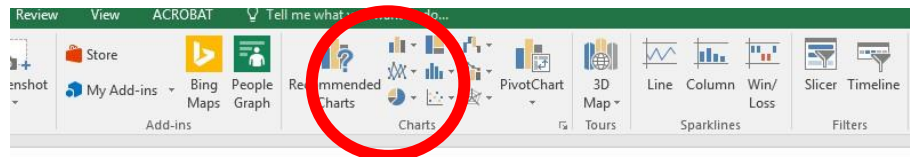
	A	B	C	D
1		Nails	Screws	Bolts
2	75mm	100	150	200
3	50mm	20	30	40

To generate a chart from tabular data, highlight all of the data cell range, including applicable Column and Row Headings.

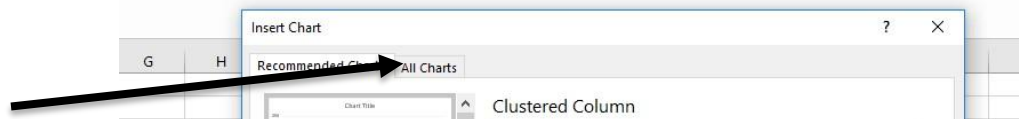
From the "Insert" tab, go to the Charts grouping,



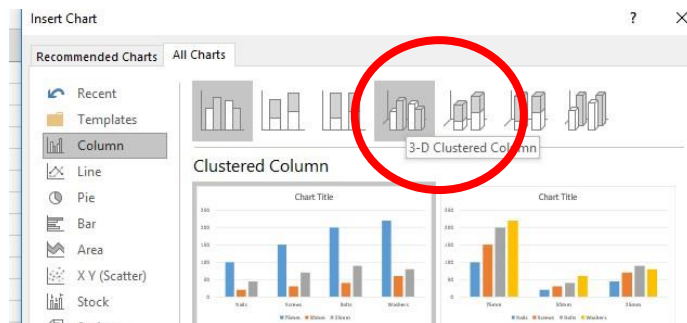
Click Recommended Charts.



Click 'All Charts'

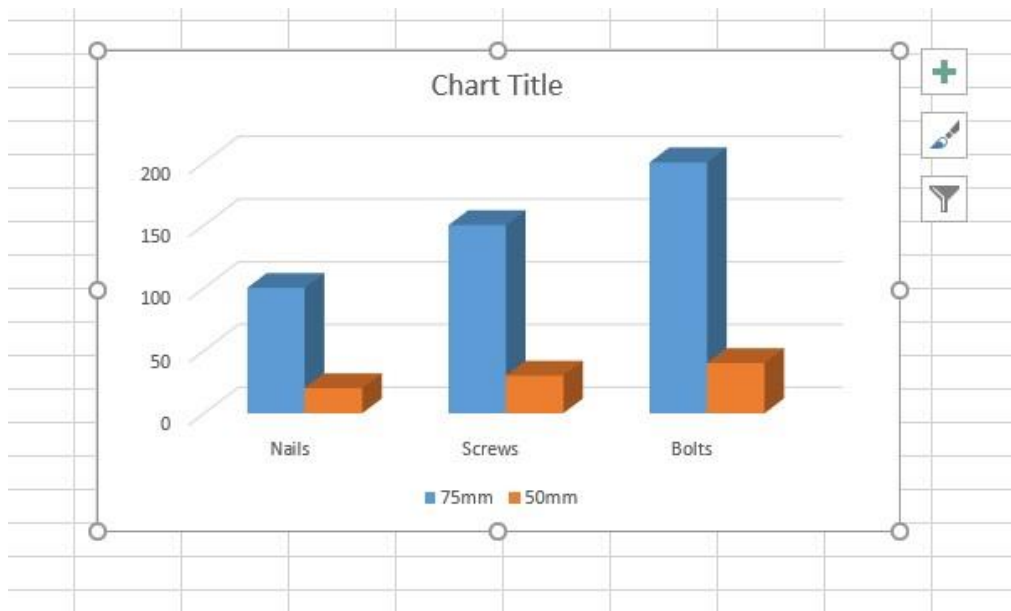


and select '3-D Cluster Column'



Note how all data is automatically inserted including "X-axis", "Y-Axis" and "Legend"



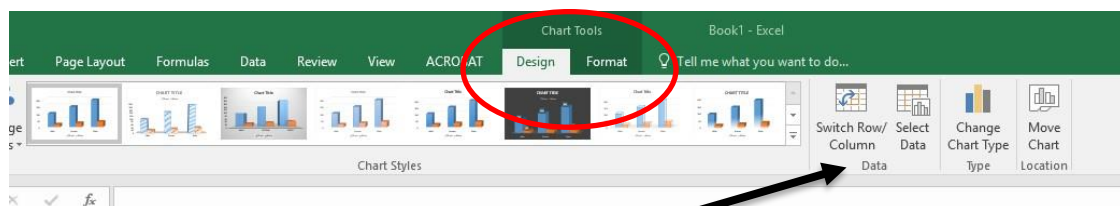


You can change the title of the graph, and adjust many aspects of the graph through the edit tools that appear on the graph

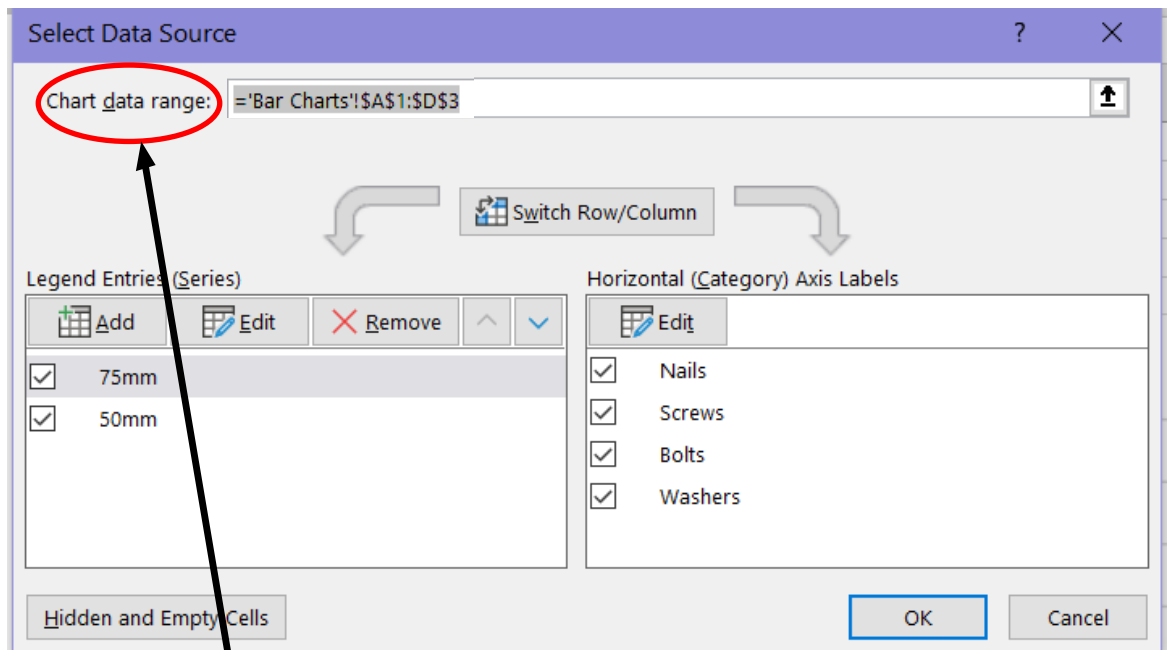
**Exercise:** add more data to the table as follows -

In cell E1 type in 'Washers; cell E2 type 220; cell E3 type 60.

Click onto the graph so the **CHART TOOLS** tab with subheadings **Design** and **Format** appears.



In the **Data** grouping, click **Select Data**



This information is the Chart data range =Bar Charts!\$A\$1:\$D\$3

If we change the Chart data range the software will pick up the additional cells. Change the capital letter D to E and click OK. You should see the new adjusted graph.

**Exercise:** add additional data to the graph as

follows -

- Cell A4: 25mm
- Cell B4: 45
- Cell C4: 70
- Cell D4:90
- Cell E4: 80

The information in the Chart data range is as follows - =Bar Charts!\$A\$1:\$E\$3

Change the number “3” at the end to the number “4” and your table should incorporate the new data.

**ACTION:** Save your work as your Surname Forename Excel 1

## Adding a Watermark to a Worksheet

A watermark is faded text or a logo in paper. It may be visible or only visible when the paper is held up to the light. A Watermarks on the pages of a file may indicate that the content of the file is confidential or that it is incomplete (i.e. a draft) and requires more work.

Excel does not include a true Watermark feature, but an image file can be inserted into a header or footer to approximate a visible watermark.

Since the information in headers and footers is normally displayed on every page of a workbook this method of inserting a watermark will ensure that it appears on all pages.

### Exercise:

#### Creating and Saving a Watermark

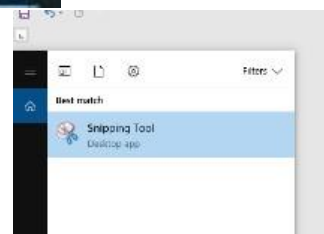
Open MS Word - From the **Design** tab select the down arrow on the **Watermark** button. Selecting one of the watermark options inserts it into the page.



Select any one of the watermark options and it will appear in your document.

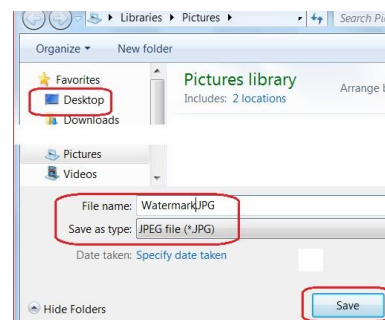
Go to the Search function

and type in 'Snip' and you will see the snipping tool app appear. Or press Shift, Windows and S to activate the snip tool.

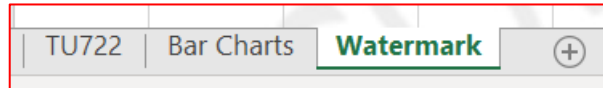


Snip the area around the watermark and when done save it as a jpeg file on your computer.

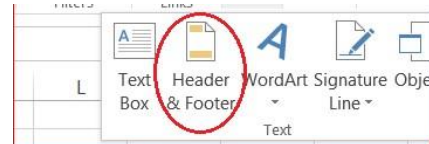
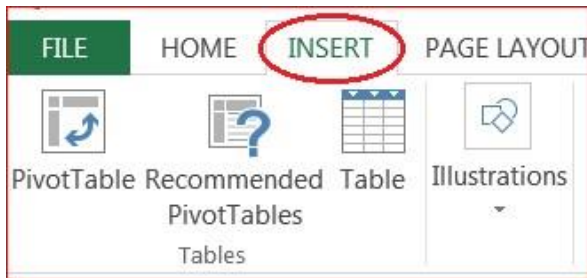
How to save your snip as an image: paste your snip into your word document, then left click to select the image, resize the image to fill the full A4 page, right click and choose "save as picture". Name the file, choose the location and save type before you click save.



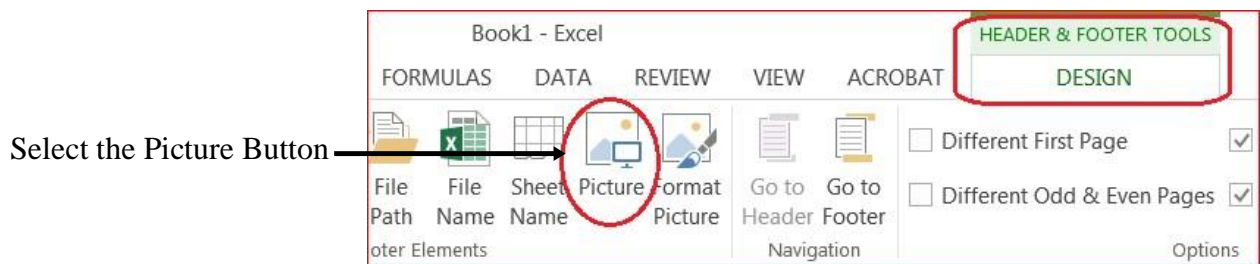
Now go back and open up your Excel 1 file, click plus to insert a new spreadsheet and name it Watermark.



In Excel from the "Insert" tab go to the Text grouping and select "Header & Footer"

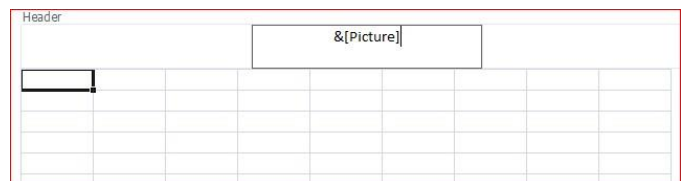


Selecting the "Header & Footer" Button displays the "Design" tab



Locate and Insert the jpeg file (watermark) created earlier.

The watermark is not immediately visible but a code - **&[Picture]** - appears in the header box of the worksheet.

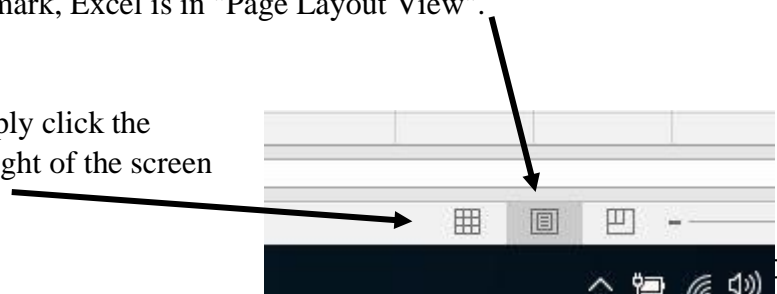


Click on any cell to leave the header area and the watermark appears on the worksheet

**Note:**

When you have added the watermark, Excel is in "Page Layout View".

To return to "Normal View" simply click the "Normal" Button at the bottom right of the screen

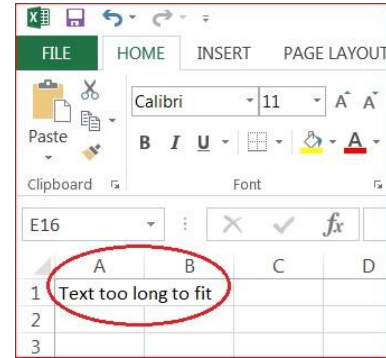


## Wrap Text

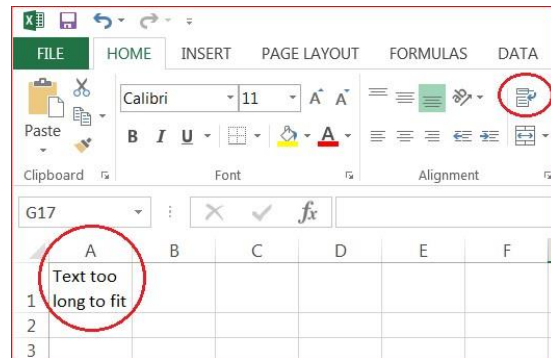
When you type text that is too long to fit in the cell, the text overlaps the next cell. If you do not want it to overlap the next cell, you can wrap the text.

Move to cell A1.

1. Type **Text too long to fit.**
2. Press Enter.
3. Return to cell A1.



4. Select the **Home** tab / **Alignment** group
5. Click the **Wrap Text** button.




Excel wraps the text in the cell.

**Exercise:**

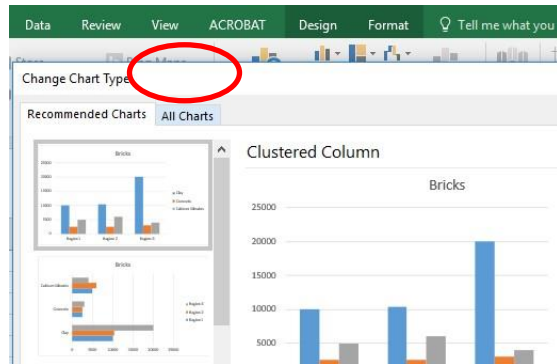
**Recap on Charts – do this as a revision/reminder exercise!**

Open a new spreadsheet through the tabs at the bottom of your workbook Excel 1 and fill in the cell data shown here. Rename the spreadsheet tab “**Bricks**”.

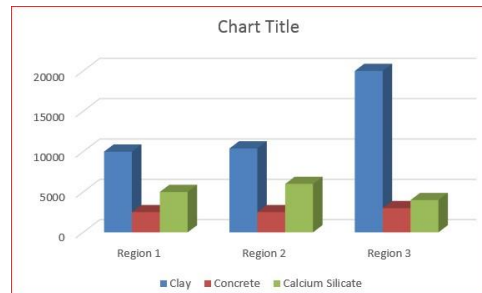


Bricks	Region1	Region2	Region3
Clay	10000	10400	20000
Concrete	2500	2500	3000
Calcium Silicate	5000	6000	4000

1. Select all of the cell data, click the “Insert” tab
2. From the “Charts” grouping click “Recommended Charts” then select “All charts” then select “3-D Clustered Column”

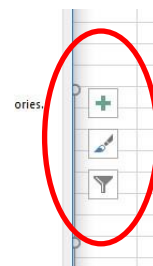


This automatically inserts the chart



**Format the chart**

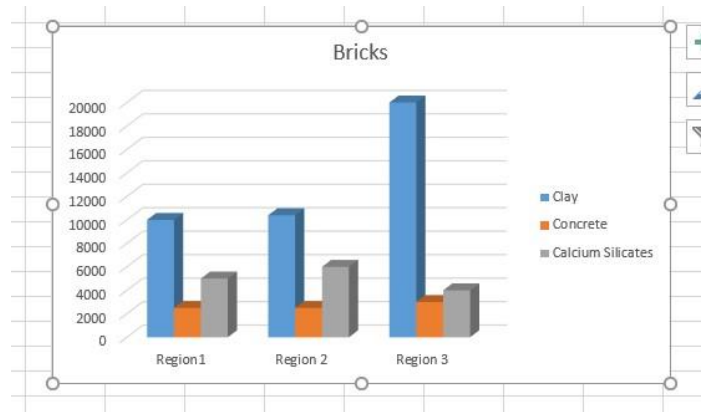
There are shortcut buttons to the side of your chart that can be used for editing.



Use these buttons to move the legend to the right-hand side of your chart.

Change the title of the chart to “Bricks”

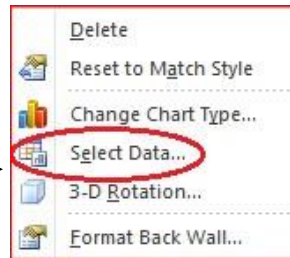
Your chart should look like this now



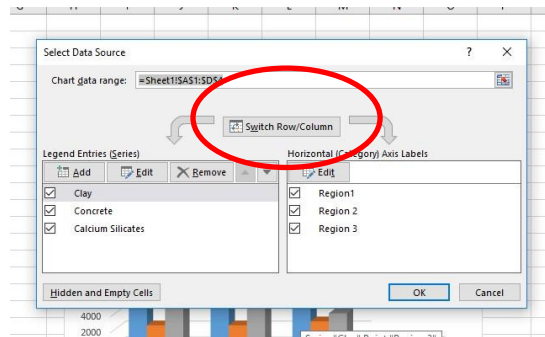
### Switch Row/Column

Right click on the Chart

Click "Select Data"

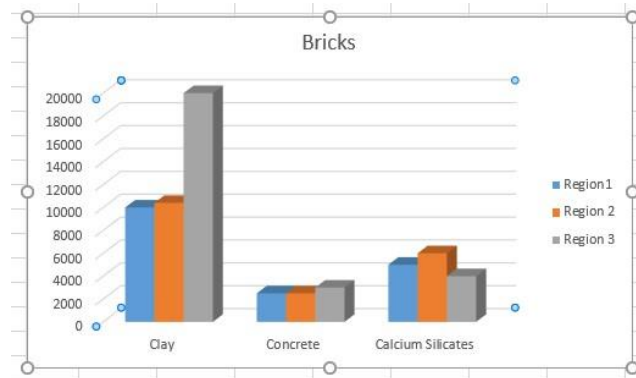


Select "Switch Row/Column" Button



The Rows and Columns are reversed displaying the information differently

**ACTION:** Save your work as your Surname Forename Excel 1



**Exercise:**

**Embedding a chart and/or table from MS Excel into MS Word dynamically**

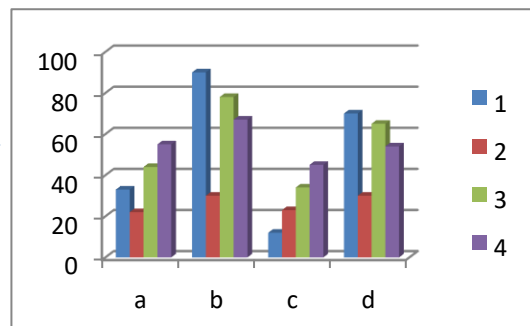
While MS Word has built-in functionality for generating both Tables and Charts, often it is more appropriate to handle large amounts of data from within a spreadsheet package and subsequently generate a chart within a word-processor document to link dynamically to the spreadsheet data.

1. **Open a new workbook and populate it with the following information: Rename the spreadsheet tab “Embedded Chart”.**

	Mon	Tue	Wed	Thur
Week 1	33	90	12	98
Week 2	22	30	23	76
Week 3	44	78	34	65
Week 4	55	67	45	54

- Column headings
- Row headings
- Numeric data

2. **Within the spreadsheet, generate a 3-D Clustered column Chart by normal means**



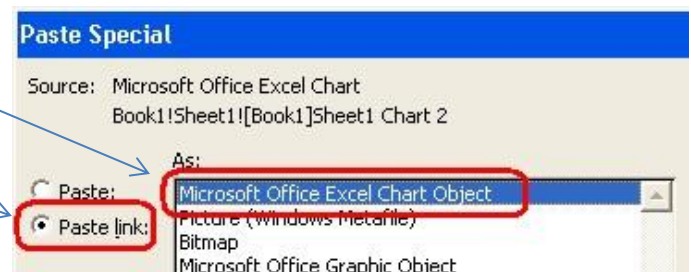
3. **Right click on the chart border and select “Copy”**

4. **Open a new MS-Word document, name it “charts 1” and save it.**

5. From the **Home tab** select the **down-arrow under Paste** then select **“Paste Special”**



6. Select **“Microsoft Office Excel Chart Object”** and **“Paste Link”**



**This inserts a dynamically linked copy of the chart from MS-Excel into MS-Word. Any changes made to the original data within MS-Excel will be automatically updated within MS-Word!**



Now go back to the Excel workbook and change the numbers in cells D2, D3 and D4 to 98

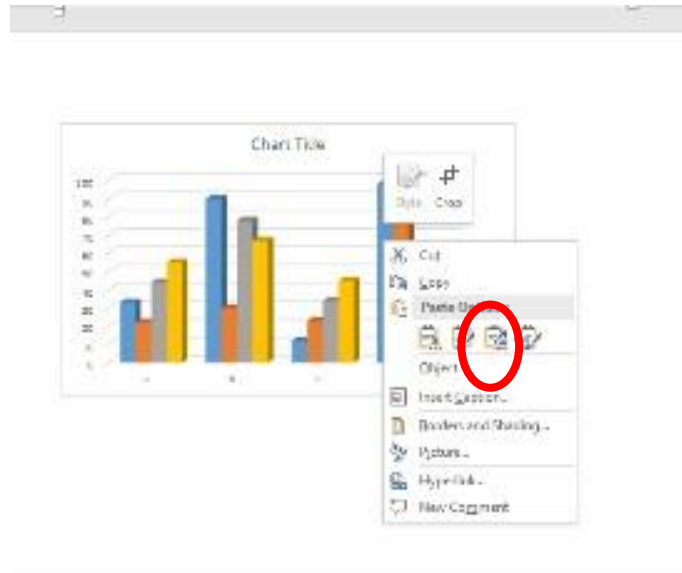
Check if the WORD document has updated, if the data doesn't update in MS Word, just click the graph as if you were selecting it (in older versions of WORD you can right click on the embedded chart and select "Update Link")

If that does not work, then do the following:

In MS WORD right click on your table to see the options in the picture to the right.

Select the option which reads "Keep Source Formatting and Link Data (F)"

*If this is not available, you can always delete the image and reinsert it!*



### Dynamic Table insertion

The same process may be used to dynamically insert a Table of Data from Excel into Word:

- Within MS-Excel, highlight the table of data
- Right click on the highlighted table and select **Copy**
- Open the MS-Word document
- From the Home tab select the down arrow under Paste then select **Paste Special**
- Select Microsoft Office Excel Worksheet Object and Paste Link

	Mon	Tue	Wed	Thur
Week 1	33	90	12	98
Week 2	22	30	23	76
Week 3	44	78	34	65
Week 4	55	67	45	54

Double-clicking on the embedded table in MS-Word will automatically reopen the associated spreadsheet

## Exercise:

### Display or hide zero cell values

Open a new spreadsheet, rename the tab Hide 0

Fill in the cell data opposite using the correct Sum function to calculate Net Value all the way down to row 20.

When we place a formula in a cell the value displayed is the result of the formula calculation. When the cells referenced by the formula contain no data, the result can display as either a zero value or a blank cell.

	A	B	C	D
12				
13	Quantity	Item	Unit Value	Net Value
14	20	Widgets	20.35	407.00
15	1	Manageries	30.56	30.56
16	5	Things	11.12	55.60
17	20	Yokes	5.56	111.20
18				0.00
19				0.00
20				0.00

By default, zero values are displayed as 0's (zeros). In the example, cell "D18" contains the formula, " $=A18*C18$ " and consequently displays "0.00" as its default value. Since this is a template for an invoice, it is preferable that these cells simply display blank until a value is calculated by means of appropriate data entry.

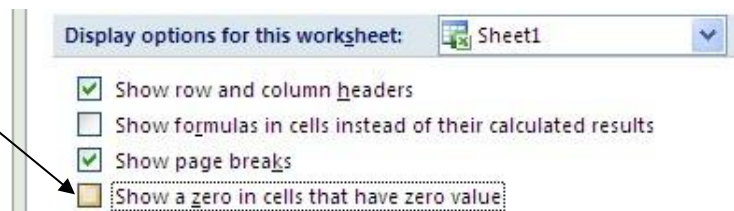
It is possible to change options to indicate all zero values on a worksheet as blank cells.

Display or hide zero values on an entire worksheet

1. Click the file button
2. Select "Options" or "More" + "Options"
3. Select "Advanced" category



4. Under **Display options for this worksheet**, deselect the checkbox beside **"Show a zero in cells that have zero value"**



The zero value cells are now blank, but they still contain formulae.

## Autofill

You can use the AutoFill option to enter a recognized sequence, such as January to December or Monday to Friday. To use the AutoFill option, enter the first element of the sequence, and then drag the fill handle, which is located at the lower-right corner of the cell, to fill all the selected cells with that sequence.

You can use a similar tool called Fill Series to enter a data series. You need to enter the first two values in two cells and then use the fill handle to extend the series in the required cells.

To enter a series starting at 2 and increasing by 2, type 2 in one cell and 4 in the next cell. Then, select both cells and use the fill handle to extend the series to the required number of cells.

## Insert a static date or time

A static value in a worksheet is one that doesn't change when the worksheet is recalculated or opened.

When you press a key combination such as CTRL+; to insert the current date in a cell,

Note: CTRL + ; means only press CTRL and semi-colon. Do not press the + key.

Excel "takes a snapshot" of the current date and then inserts the date in the cell. That cell's value doesn't change, so it's considered static.

### Exercise:

On a new worksheet tab (rename Time & Date), select the cell into which you want to insert the current date or time. Do one of the following:

To insert the current date, press CTRL+; (semi-colon).

To insert the current time, press CTRL+SHIFT ; (semi-colon).

	A	B	C
1	Static	Date	09/11/2020
2	Static	Time	17:22
3	Static	Date & Time	09/11/2020 17:23

To insert the current date and time, press CTRL+; (semi-colon),

Then press the SPACE bar, and then press CTRL+SHIFT+; (semi-colon).

Insert a date or time whose value is updated:

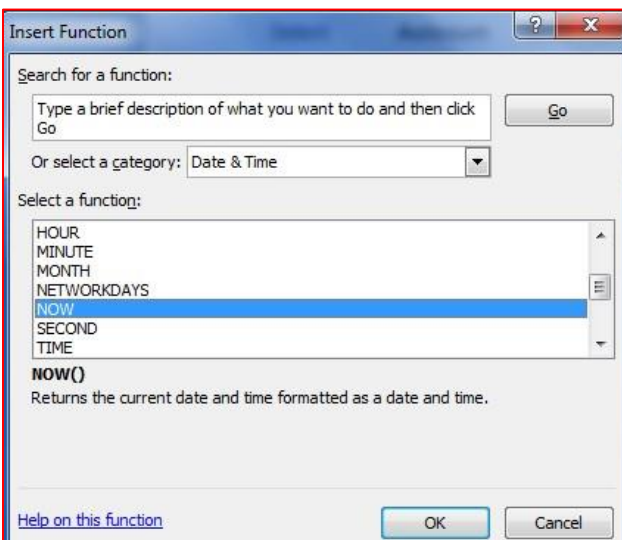
A date or time that updates when the worksheet is recalculated, or the workbook is opened is considered “dynamic” instead of static.

In a worksheet, the most common way to return a dynamic date or time in a cell is by using a worksheet function.

To insert the current date or time so that it is updatable, use the TODAY and NOW functions, as shown in the following example.

Select the cell where the date and time is to be shown C6

Select:        **Autosum**    **More Functions**    **Date and Time**    **NOW**        **OK**



4	Dynamic	Date	=TODAY()
5	Dynamic	Time	=NOW()
6	Dynamic	Date & Time	09/11/2020 18:05

Note: Cell must be formatted to Time h:mm:ss

## Perform Mathematical Calculations

In Microsoft Excel, you can enter numbers and mathematical formulas into cells. Whether you enter a number or a formula, you can reference the cell when you perform mathematical calculations such as addition, subtraction, multiplication, or division. When entering a mathematical formula, precede the formula with an equal “=” sign. Use the following to indicate the type of calculation you wish to perform:

- + Addition
- Subtraction
- \* Multiplication
- / Division

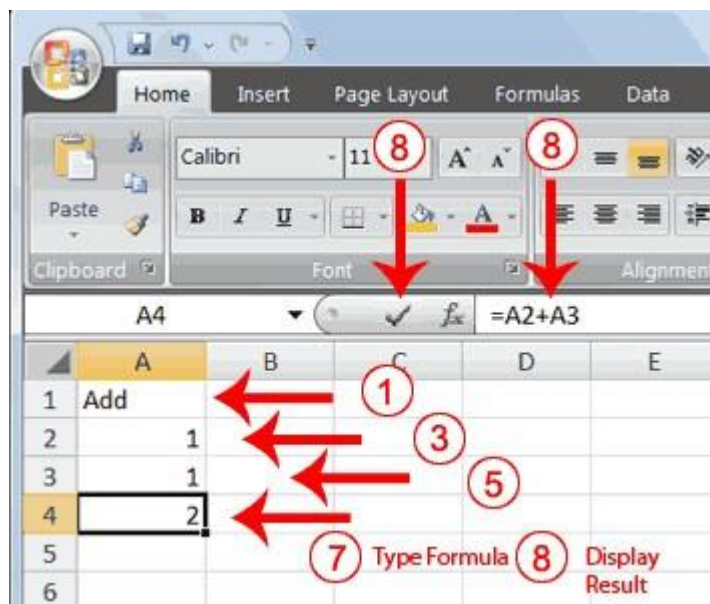
In the following exercises, you practice some of the methods you can use to move around a worksheet, and you learn how to perform mathematical calculations. Refer to Lesson 1 to learn more about moving around a worksheet.

### Exercise:

#### Open a new spreadsheet and rename the tab “Basic Calculations”

#### Addition

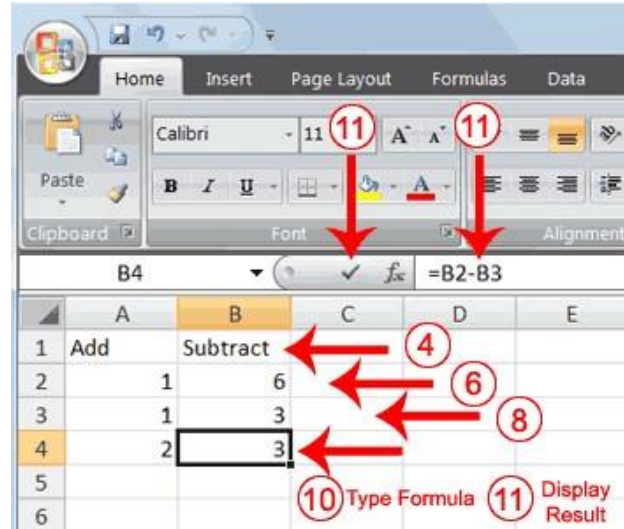
1. Type **Add** in cell A1.
2. Press Enter. Excel moves down one cell.
3. Type **1** in cell A2.
4. Press Enter. Excel moves down one cell.
5. Type **1** in cell A3.
6. Press Enter. Excel moves down one cell.
7. Type **=A2+A3** in cell A4.
8. Click the check mark on the Formula bar. Excel adds cell A1 to cell A2 and displays the result in cell A4. The formula displays on the Formula bar.



**Note:** Clicking the check mark on the Formula bar is similar to pressing Enter. Excel records your entry but does not move to the next cell.

## Subtraction

1. Type **Subtract** in cell B1.
2. Press Enter. Excel moves down one cell.
3. Type **6** in cell B2.
4. Press Enter. Excel moves down one cell.
5. Type **3** in cell B3.
6. Press Enter. Excel moves down one cell.
7. Type **=B2-B3** in cell B4.
8. Click the check mark on the Formula bar. Excel subtracts cell B3 from cell B2 and the result displays in cell B4. The formula displays on the Formula bar.



## Multiplication

1. Hold down the Ctrl key while you press "g" (Ctrl+g). The Go To dialog box appears.
2. Type **C1** in the Reference field.
3. Press Enter. Excel moves to cell C1
4. Type **Multiply**.
5. Press Enter. Excel moves down one cell.
6. Type **2** in cell C2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell C3.
9. Press Enter. Excel moves down one cell.
10. Type **=C2\*C3** in cell C4.
11. Click the check mark on the Formula bar. Excel multiplies C1 by cell C2 and displays the result in cell C3. The formula displays on the Formula bar.

## Division

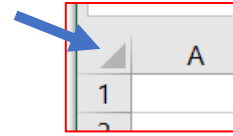
1. Press F5.
2. Type **D1** in the Reference field.
3. Press Enter. Excel moves to cell D1.
4. Type **Divide**.
5. Press Enter. Excel moves down one cell.
6. Type **6** in cell D2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell D3.
9. Press Enter. Excel moves down one cell.
10. Type **=D2/D3** in cell D4.
11. Click the check mark on the Formula bar. Excel divides cell D2 by cell D3 and displays the result in cell D4. The formula displays on the Formula bar.

**ACTION:** Save your work as your Surname Forename Excel 2

## Excel - Workshop Inventory **Exercise:**

### Open Excel

1. File - Save As – 'Surname First name Excel 3'.
2. Highlight **All** cells (button at top left)
3. Select '**12**' for font point size and '**Times New Roman**' as font type
4. Using mouse, highlight cell '**F1**'
5. Set font size to '**18**'
6. Select '**Bold**'
7. Type '**Workshop Inventory**'
8. Note how the text overwrites the adjoining cells '**G1**' & '**H1**'
9. Click on '**G1**' and note how no content shows for this cell
10. Click the **File Tab**, select '**Print**' this shows you  
**'Print Preview'**. Now click the back arrow to Close Print Preview. Note how the page margins appear as dotted lines in the spreadsheet
11. Change the orientation of the page to '**Landscape**' on the '**Page Layout**' tab.
12. Drag the cursor over cells '**F1, G1, H1** and **i1**' to highlight them. '**Right-click**' on the highlighted cells to display a '**drop-down**' menu
13. '**Click**' on '**Format Cells**'
14. '**Click**' the '**Border**' tab
15. Select '**top**', '**bottom**', '**left**' and '**right**' or '**Outline**'
16. '**Click**' the '**Fill**' tab.
17. Select '**pale green**' from colour chart
18. '**Click**' '**OK**' button
19. Highlight cell '**A4**'
20. Type '**Room No.**'
21. Use down arrow to highlight next cell beneath
22. Type **1,2,3,4 & 5** in each cell range from '**A5**' to '**A9**' and '**Centre**' the numbers
23. Highlight '**C4**', select '**Bold**' and type '**Saws**'
24. Highlight '**D4**', select '**Bold**' and type '**Hammers**'
25. Highlight '**E4**' select '**Bold**' and type '**Chisels**'



26. Highlight the three cells 'C4', 'D4' & 'E4'

27. Select '**Centre**' to centre the text

28. In cell '**G4**' type '**Unit Cost**'

29. To widen a column simply double click on the border at the top

30. In cell '**H4**' type '**Vat @ 21%**'

31. In cell '**i4**' type '**Unit cost inc.**' (This is the Unit cost including the VAT rate.

32. In cell '**J4**' type '**Total value**'

33. Fill in the numbers in cells '**C5**' to '**E9**' to represent inventory for each of the listed items.



---

3					
4	Room No.		Saws	Hammers	Chisels
5	1		10	13	40
6	2		15	14	28
7	3		13	16	27
8	4		16	17	35
9	5		17	16	28
10					

### **Formulas:**

Highlight cell '**C11**' & Type: **=Sum(C5:C9)** Then press '**Enter**'

Highlight cell '**D12**' & Type: **=Sum(D5:D9)** Then press '**Enter**'

Highlight cell '**E13**' & type: **=Sum(E5:E9)** Then press '**Enter**'

The totals for the cells listed will be automatically calculated and placed in the cells containing the formulas.

Fill in the unit cost for each item as follows – **Saws** Cell '**G11**' is 42 , **Hammers** '**G12**' is 16 and **Chisels** '**G13**' is 18

In cell '**H11**' type: '**=G11\*0.21**'. This formula will calculate the VAT @ 21%

Highlight cell '**H11**', '**right click**' and select '**copy**'

Highlight cell '**H12**', '**right click**' and select '**paste**'

Highlight cell '**H13**', '**right click**' and select '**paste**'



In 'i11' type  $=G11 + H11$ . Copy this formula to cells i12 and i13. Decide on a formula for 'J11', 'J12' & 'J13' to show total value for each item.

In 'J15' type a formula to represent the '**Grand Total**'

Highlight cells 'A4' to 'J15',

'Right-click' and select 'Format Cells',

'Border'

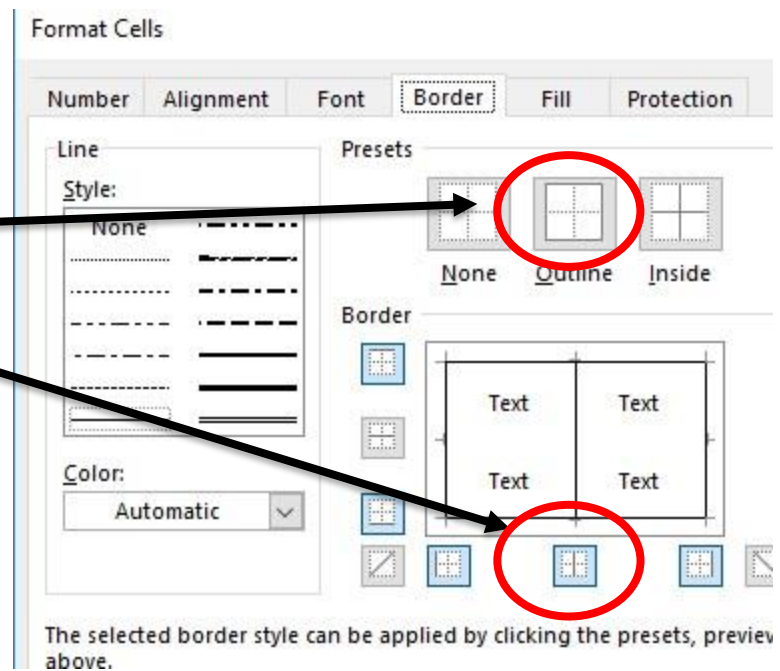
Select 'Outline'

and select this

for internal

column lines

Click 'OK'



Highlight cells 'A4' to 'J4' and place a line beneath using '**Border**' option.

If you have not already worked it out you will now fill out the formula required to populate column J. **Tip:** The Total Value is the total number of each item (e.g. saws = 71) multiplied by the Unit cost Inc

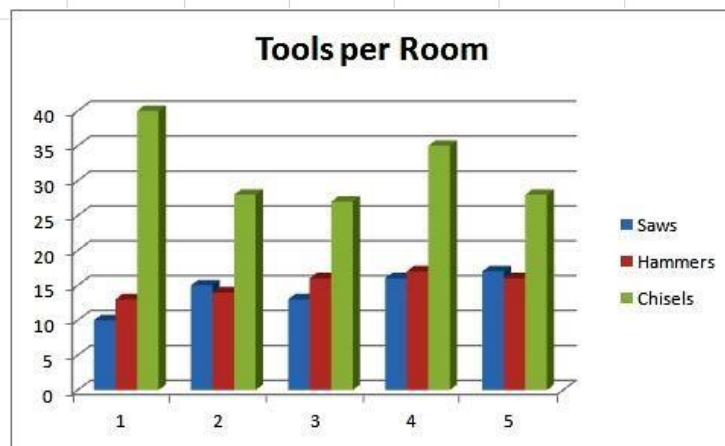
## Charts:

Generate a chart to represent the number of tools per room:

- Highlight cells 'C4 to E9'
- **On the Insert Tab in the Charts Group click Column and choose "3-D Clustered Column"**
- A column chart will be generated to reflect the number of saws, hammers and chisels in the respective rooms.
- Edit the table title to read '**Tools per Room**'

Chart can be resized and placed as required on sheet.

	A	B	C	D	E	F	G	H	I	J
1						<b>Workshop Inventory</b>				
2										
3										
4	Room No.		Saws	Hammers	Chisels		Unit Cost	Vat @21%	Unit cost inc.	Total Value
5	1		10	13	40					
6	2		15	14	28					
7	3		13	16	27					
8	4		16	17	35					
9	5		17	16	28					
10										
11			71				42	8.82	50.82	3608.22
12				76			16	3.36	19.36	1471.36
13					158		18	3.78	21.78	3441.24
14										
15										8520.82
16										



**ACTION:** Save your work as your Surname Forename Excel 3

## Laying out an invoice **Exercise:**

You are required to lay out a sales invoice (see next page). Open a new Excel file and name the spreadsheet tab "Invoice exercise 4". The invoice must contain:

- Your company's name, address, telephone number, Email address and/or Fax number.
  - The Title "Invoice"
  - The clients name and address
  - Invoice Number
  - Date and Time (insert using "Now" option in "Function" command).
  - Account number.
  - Column headings to include "Quantity", "Item", "Unit Value", "Net Value", "20% VAT" and "Gross".
1. The invoice is to accept twenty lines of items. **Note:** Where formulae are copied down along columns and there are no entries in rows upon which calculations are to be performed the software **may** display Zeros. The cells in affected columns must be formatted to display nothing rather than zero values (page 16)
  2. The Quantity column, below its title, is to be formatted to centre alignment and integer numbering only (no fractions and zero decimal places).
  3. The "Item" column should be wide enough to accept reasonable descriptive detail.
  4. The "Unit Value" column, below its heading, should be set to accept Numeric data only and set to **Two** places of decimal.
  5. The "Net Value" column should calculate the product of the "Quantity" column multiplied by the "Unit Value" column for each entry.
  6. The "20% VAT" column should contain a formula to calculate 20% of that contained in the "Net Value" column for each entry.
  7. The "Gross" column should automatically calculate the total value of VAT and NET Value.
  8. Totals for "Net Value", "Vat" and "Gross" columns should automatically update as data is changed in the relevant cells. These Column total cells should be set to display the "€" sign.

The bottom of the invoice should have space given to two entries:

- 📄 Issued By:
- 📄 Received By:

	A	B	C	D	E	F	G
1	Fred's Hardware Ltd. 23 High St. Athlone						
2	Telephone: 1234567 email: fredshardware@hotmail.com						
3							
4	Invoice		Invoice No.			1	
5							
6	Mr Joseph Bloggs			Date/Time		27/11/2017 21:18	
7	Main St						
8	Nowhere			Account		JB001	
9	Ireland						
10							
11	Quantity	Item	Unit Value	Net Value	20% VAT	Gross	
12	20	Widgets	20.35	407.00	81.40	488.40	
13	1	Manageries	30.56	30.56	6.11	36.67	
14	5	Things	11.12	55.60	11.12	66.72	
15	20	Yokes	5.56	111.20	22.24	133.44	
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32				Total Net	Total VAT	Total inc VAT	
33				€604.36	€120.87	€725.23	
34							
35							
36							
37	Issued by	_____		Received by	_____		
38							
39							

**ACTION:** Save your work as your Surname Forename Excel 4  
Now email a copy of all files to me [Robert.hickey@tudublin.ie](mailto:Robert.hickey@tudublin.ie)