

## **Why Learn How to Use Excel?**

### **National Curriculum – Digital Technologies**

#### **Foundation to Year 2 / Digital Technologies Processes and Production Skills / ACTDIP003**

exploring, imagining and comparing the usefulness of different data displays, for example jointly creating simple column graphs and picture graphs to represent different types of items

exploring and creating graphs to represent classroom data, for example collecting data on the country of birth of each student and presenting the results as a picture graph

selecting appropriate formats or layout styles to present data as information depending on the type of data and the audience, for example lists, tables, graphs, animations, info graphics and presentations

#### **Years 3 and 4 / Digital Technologies Processes and Production Skills / ACTDIP009**

using different techniques to present data as information, for example creating a column chart in a spread sheet by colouring cells to represent different items

improving the appearance and usability of data, for example using colour, headings and labelling of images to organise and accurately identify data

using software to sort and calculate data when solving problems, for example sorting numerical and categorical data in ascending or descending order and automating simple arithmetic calculations using nearby cells and summing cell ranges in spreadsheet or database software

#### **Technologies / Digital Technologies / Years 5 and 6 / Digital Technologies Processes and Production Skills / ACTDIP016**

recognising the difference between numerical, text and date formats in spread sheets

using software to automate calculations to help with interpreting data, for example using functions to make arithmetic calculations using multiple cells and summing cell ranges

#### **Years 7 and 8 / Digital Technologies Processes and Production Skills / ACTDIP026**

applying a set of conditions to a spread sheet to organise and filter data, for example using conditional formatting to highlight the state of particular cells, and filtering and sorting categorical data using column filters

using features and functions of software to summarise data to create information, for example calculating a simple budget of income and payments and creating a summary table for analysis

#### **Benefits for Maths/Science**

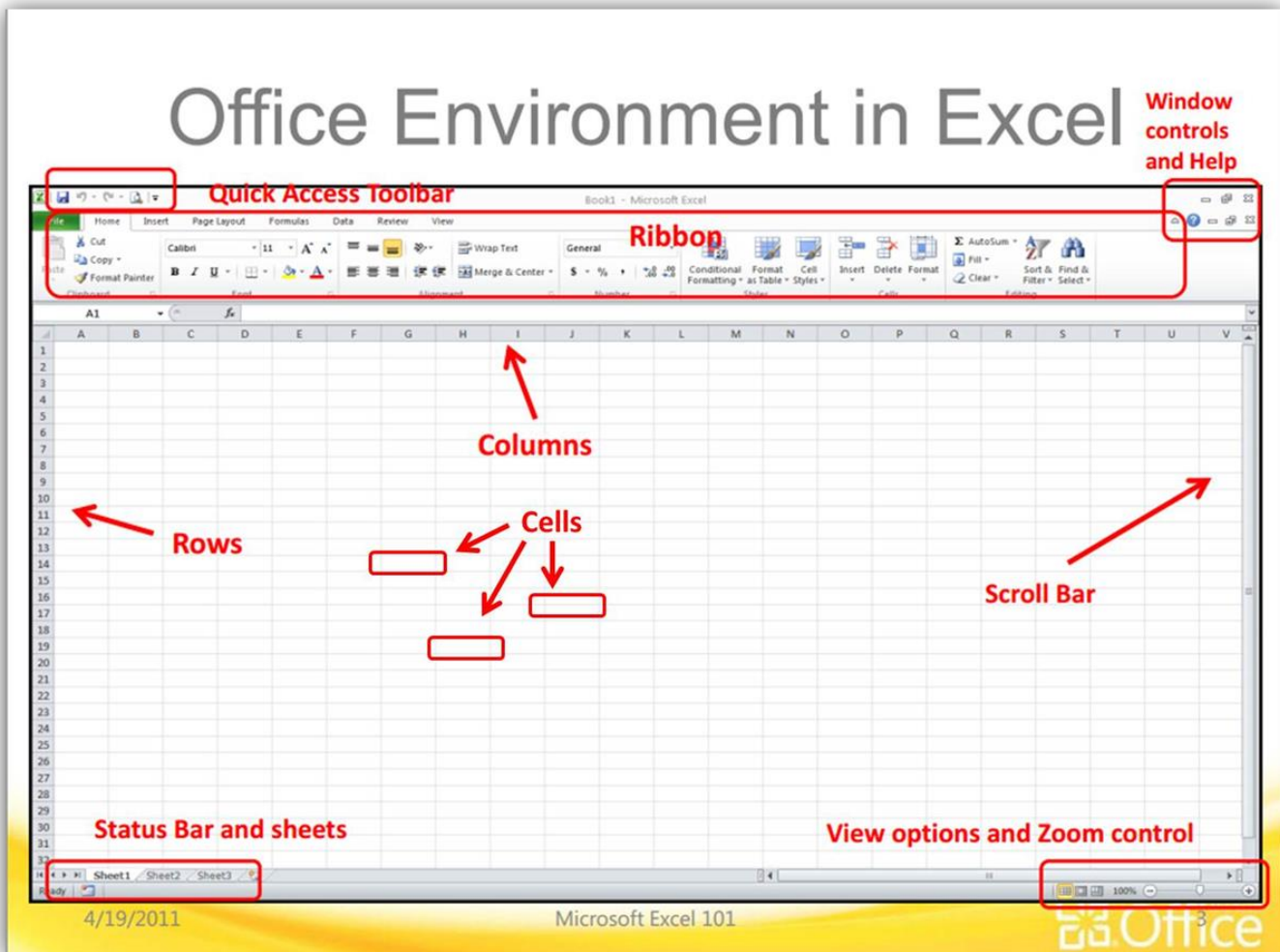
- Teaching students the difference between columns and rows
- Teaching students how to read grids
- Reinforcing how to draw up tables to store information
- Creating graphs from data collected
- Budgeting activities

### Activities for Teaching Excel

- See lesson plans Excel Basics 1 - 4
- **Create pictures** using the Fill Colour option in the Home Ribbon. If you change the column width to 2 each cell is close to a square shape. You can use any cross stitch pattern to determine what colour should be in each column and row. (See the Minion example).
- Set up a game to play **Battleships** on Excel (See Battleships instructions).
- Create **timelines** in Excel.
- Set up a **budget** for a class party or excursion. Use the data to create a graph.
- **Collect data** on students favourite colour, pet, sport etc. and record the information in a **table** in Excel. Use the data to create a **graph**.
- Have students **record their test results** for spelling or mental maths and graph their progress in Excel.
- **Planning a Dinner Party**
- With my Year 5 class, I often have the students plan, shop for and prepare a formal, sit down meal for our end of year Christmas party. The students need to plan a meal, find the recipes they need and determine how much of each ingredient we will need to feed the whole class. They make a list of ingredients needed on an Excel spreadsheet for each recipe. They then go on an online shopping website and determine how much it will cost to purchase the ingredients and supplies needed for the party. The cost per item is typed into the spreadsheet and the total cost for each ingredient and the meal in total is calculated. If the cost exceeds \$10 per student, they need to revise their expectations for the meal.
- I then take the students shopping for the ingredients. Each group is given a shopping list with a budgeted cost for each item. Students are not allowed to go above budget when purchasing their items. (The money comes from the parents as an excursion cost). We then take the shopping back to school and have a few hectic days of cooking and preparation followed by a Christmas party lunch. You could adapt this as an excursion to somewhere else or pretend the students are planning a birthday party with a limited budget.

## Excel Basics – Lesson 1

- 1) Open Microsoft Excel
- 2) Take a look at this picture to start learning the names of things in Excel:



Excel is used for making spreadsheets. A spreadsheet is used to organize information and numbers. You can make graphs and charts in excel. You can sort information. You can do math (even complicated math). You can make tables. You can do many things, but these are the basics that we will cover.

Now, answer the questions on the next pages using the picture and Excel on your computer.

- 3) On your Ribbon, what are 5 things you see under the Home tab?
- 4) On your Ribbon, what are 5 things you see under the Insert tab?
- 5) On your Ribbon, what are 5 things you see under the Page Layout tab?
- 6) On your Ribbon, what are 5 things you see under the Formulas tab?

- 7) On your Ribbon, what are 5 things you see under the Data tab?
- 8) On your Ribbon, what are 5 things you see under the Review tab?
- 9) On your Ribbon, what are 5 things you see under the View tab?
- 10) Under what tab can you find Column Charts?
- 11) Under what tab can you add up numbers (Autosum)?
- 12) Do Columns go up and down or side to side? (look at the picture on the first page)
- 13) Do Rows go up and down or side to side? (look at the picture on the first page)
- 14) What is a Cell?
- 15) Hold your mouse over the picture of the blue disk in the quick access toolbar. What does that button do?



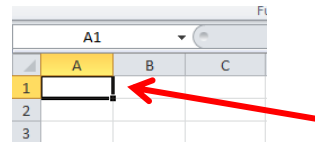
- 16) You can also press "Control" and "s" at the same time to save. Try it! Then hit Cancel.
- 17) Type something in one of the cells. As you are typing, where do the letters show up? (There are 2 places...)
- 18) After you finishing typing, press "Enter" – Where do the letters show up now?
- 19) How do you change the font and size of what you typed?
- 20) In your own words, what is a spreadsheet?

## Excel Lesson Day 2

1) Open **Microsoft Excel**

2) Save your assignment as **Excel Basics Day 2**

3) In **Cell A-1** type a number between 1 and 10

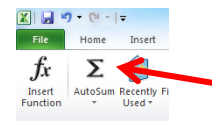


4) In **Cell A-2** (Below your first number) type a number between 1 and 10

5) In **Cell A-3** (Below your second number) type a number between 1 and 10

6) In **Cell A-4** click on the **formulas** tab.

7) Click on the big E that says “**Auto sum**” and the press “**Enter**”



8) What happens in Cell A-4? It adds up all the numbers, right?

9) Use the calculator on the computer (or your brain) and see if it added it up right! Math!

10) **Save** your assignment (Press **Control** and **S** at the same time).

11) Now, in cell **B-1** type a number between 1 and 10.

12) Do the same thing in **B-2**, and **B-3**.

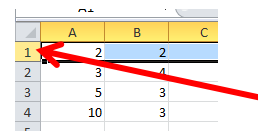
13) In cell **B-4** click on the **formulas** tab again.

14) Click the **small triangle** under Auto Sum and pick **Average**. Then press **Enter**.

15) What happens in cell B-4? It takes an average of the numbers!

16) **Save** your assignment (Press **Control** and **S** at the same time).

17) Hold your mouse over the **1** on the right side for row 1.



18) **Right click** your mouse and pick **insert**.

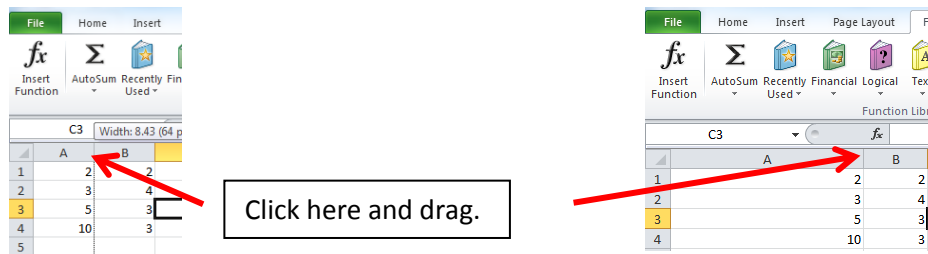
19) A new row should have been added!

20) Now, in **A-1** type “**Adding Numbers**”

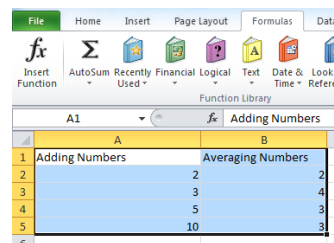
21) In **B-1** type “**Averaging Numbers**”

22) **Save** your assignment (Press **Control** and **S** at the same time).

23) To make your rows or columns bigger, you can hold your mouse over the **line between** them, click, and drag. Try it.



24) Now, select everything you have typed so far.



25) Click on the **Insert** tab.

26) Click on **Column** and choose the first 2-D chart – **Clustered Column**.

27) What happens? You should see a chart!

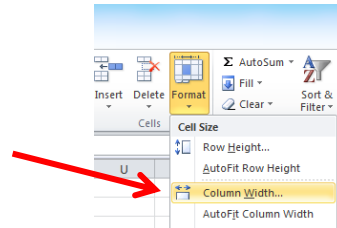
28) Now, do the same thing, but try out all the different graphs (line, pie, area, etc.)

29) When you finish, have at least **10 charts** in your file.

30) **Save** your assignment (Press **Control** and **S** at the same time).

## Excel Lesson Day 3

- 1) Open **Microsoft Excel**
- 2) Save your assignment as **Excel Basics Day 3**
- 3) On the **Home** tab, click **Format**, go down to **Column Width**, type **12** and press **Enter**.



- 4) You can do this to change ALL the columns in your spreadsheet.
- 5) Now, set up a table that looks like this (Pick any 3 cities in the world):

	A	B	C	D	E	F
1	Weather	Monday	Tuesday	Wednesday	Thursday	Friday
2	Barranquilla					
3	Paris					
4	Los Angeles					

- 6) Next, use google or yahoo! to find the weather forecast for next week in each city.
  - a. (You might have different days on yours than in my example, just have 5 days)
- 7) Enter all the numbers into your table in **Celsius** (NOT in F or Fahrenheit)
- 8) Do not add the degree symbol or the letter C. Only enter the **numbers**.
- 9) Now, **select all** the information in your table.

	A	B	C	D	E	F
1	Weather	Monday	Tuesday	Wednesday	Thursday	Friday
2	Barranquilla		12	13	14	34
3	Paris		12	13	16	51
4	Los Angeles		16	26	26	36

10)

Click the **Insert** tab, choose **Column** and insert the first chart – **Clustered Column**

11) You should see a Chart!

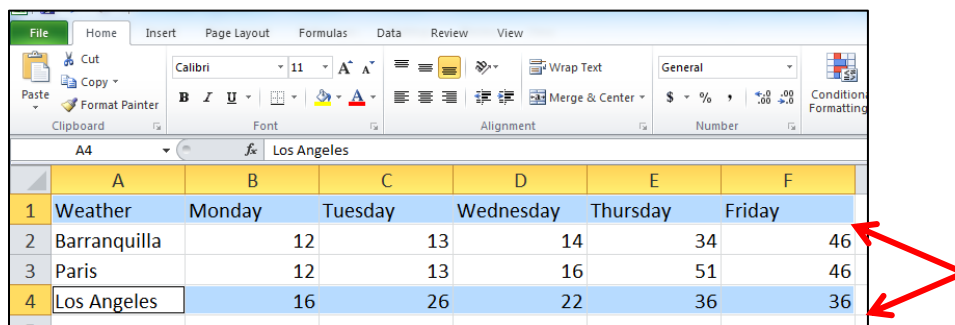
12) Try changing a few numbers in your Data. You should see the chart changes too!

13) Now, move your chart out of the way for now.

14) What if you want to only see the weather for one of your cities?

15) Select **the top row** (The row with the **Days** listed)

16) Now, hold down the **Control** key and select the **weather for your last city**.



	A	B	C	D	E	F
1	Weather	Monday	Tuesday	Wednesday	Thursday	Friday
2	Barranquilla	12	13	14	34	46
3	Paris	12	13	16	51	46
4	Los Angeles	16	26	22	36	36

17) You should see that **only 2 rows** are selected.

18) Now, make another **Clustered Column** Chart and it should only be for **1 city**.

19) **Save** your assignment (Press **Control + S**)

20) Move your second chart out of the way for now.

21) Select **all** your information again.

22) Try making a **line chart** this time. (Click the **Insert** tab, **line**, then choose one)

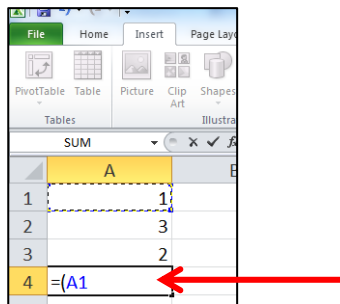
23) **Right click** on your charts and choose **Format Chart Area** at the bottom.

24) Try changing the **Fill**, **Border Color**, **Border Styles**, **Shadow**, **Glow**, and **3-D** of the chart. Find the settings you like the most! Then **Save**.



## Excel Lesson Day 4

- 1) Open **Microsoft Excel**
- 2) Save your assignment as **Excel Basics Day 4**
- 3) In cell **A-1** type a number between 1 and 10
- 4) Do the same things in cells **A-2** and **A-3**
- 5) Now, we will learn how to type **formulas** to make Excel do math.
- 6) In cell **A-4** Type the = key (The key with the  $\epsilon$ )
- 7) Then type an open parenthesis ( (Hold **shift** and press **9**)
- 8) Then **click** on cell **A-1** You should see **=(A1** in your cell



- 9) Now type + (**Shift** and the key with the +)
- 10) Now **click** on cell **A-2**
- 11) Now type + again
- 12) Now **click** on cell **A-3**
- 13) Finally, type a close parenthesis ) (Hold **shift** and press **0**)
- 14) Press **Enter**. You should see all your numbers added up in cell **A-4**.
- 15) Save your assignment (Press **Control** and **S**).

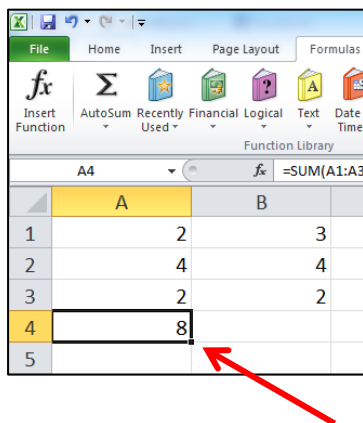
16) Always use that same format for formulas. Type = and then inside (...parenthesis...) you type what math you want Excel to do.

17) Now, in cell **B-1** type number between 1 and 10

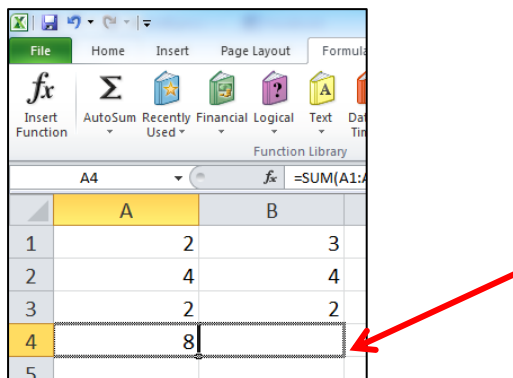
18) Do the same thing in **B-2** and **B-3**

19) If we want to have the same formula in B-4, there is an easy way to do it.

20) Click on cell **A-4** and you should see a **small black box** in the corner of the cell:



21) Click on that **black box**, and **drag it over into cell B-4**, then let go of the mouse.



22) Now, column B should be added up also!

23) This is how you can copy formulas down a row (Don't use copy and paste for formulas!)

24) Save your assignment (Press **Control** and **S**).

25) Now, what if you wanted different types of numbers (percentages, money, fractions, etc.)

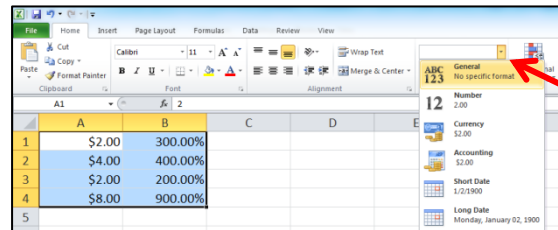
26) Select all of column A, **right click**, and choose **format cells**.

27) On the left side choose **currency** (money). And click **OK**.

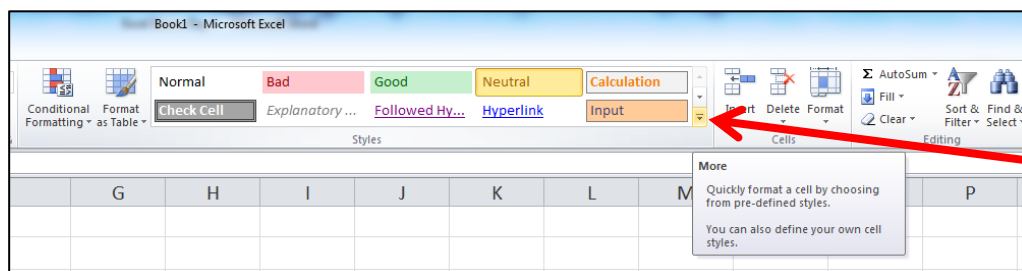
28) Next, select all of column B, **right click**, and choose **format cells**.

29) On the left side choose **percentage**. And click **OK**.

30) You can also change number types in the **Home** tab, in the middle where it says **General**



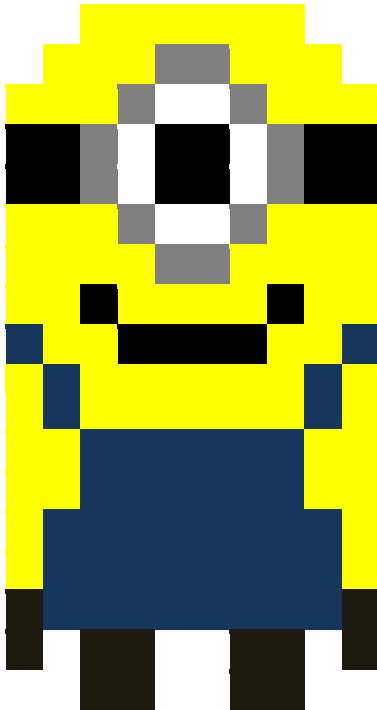
31) Finally, **select all your data**, under the **home** tab, click the small triangle next to the box with all the different coloured boxes:



32) Try out **5 different options**, and choose the one you like.

33) Save your assignment (Press **Control** and **S**).

## How to Draw a Minion in Excel



Highlight Cells C1 - H1 and fill with yellow

Highlight cells B2 - I2 and fill with yellow

Highlight cells A3 - J3 and fill with yellow

Highlight cells A6 - J14 and fill with yellow

While holding the control key, highlight cells A4 - B5, E4 - F5, I4 - J5 and fill with black.

While holding the control key, highlight cells E2 - F2, D3, G3, C4 - C5, H4 - H5, D6, G6 and E7 - F7 and fill with grey.

Hold down the control key, highlight cells E2 - F2, D4 - D5, G4 - G5, E6 - F6 and fill with white

While holding the control key, highlight cells C8, H8, D9 - G9 and fill with black.

While holding the control key, highlight cells A9, J9, B10, I10, C11 - H12, B13 - I15 and fill with dark blue.

Hold down the control key, highlight cells A15 - A16, J15 - J16, C16 - D17, G16 - H17, B18 - D18, G18 - I18 and fill with black.

Highlight letters A - J and change column width to 2


## Battleships in Excel

## Setting up your Battleship Grid

- Open Microsoft Excel by clicking on the green Excel icon  
Microsoft Office ➔ Excel.



or Start → All Programs →

- Highlight cells from A1 to I9 and select the border icon 
- Highlight the numbers 1 – 9 and let go of the mouse. Change the row height to 42 by dragging down the line underneath the number 9. (Or right click, change row height, 42, enter. )
- Using Wingdings font, choose four different symbols to represent your battleships. Create a key so that you know how many of each symbol you need to represent the various sizes of the battleships – e.g.

☠	☠	☠	☠		💣	💣	💣		
								💣	💣
				☠					
💣				☠	💣	💣	💣		
💣				☠					
				☠					💧
💧			💣		☠	☠	☠	☠	
	💧			💣					
						💣	💣	💣	

**Key**

💧	1 square
💣	2 squares
💣	3 squares
☠	4 squares

- To insert a symbol, click on **Insert, Symbol**, change the font to **Wingdings, Insert, Close**.
- Copy each symbol into the cells on the grid according to your key. Mark 3 of each type in your grid.
- On the status and sheet bar, right click on Sheet 1, Rename, change it to My Game.
- On the status and sheet bar, right click on Sheet 2, Rename, change it to Opponent.
- Highlight cells A1 – I9 in sheet 2 and insert a grid with borders, changing the row height to 42.

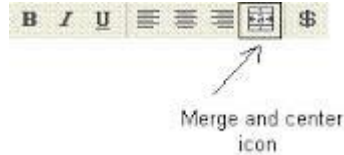
## Playing the Game

- Give your partner a copy of your key.
- Player 1 tries to locate battleships on the grid – e.g. call out A3. Player 1 will colour fill the cell they call out on their Opponent sheet so that they know which cells they have already guessed. If Player 1 has made a hit, they need to type number 1,2,3 or 4 in the square, depending on the size of the ship they have hit.
- Player 2 must let Player 1 know which symbol it is or if it is a blank space.
- Player 2 must also fill that space in using colour fill – click on the square Player 1 has called out, fill it with a colour of your choice (paint pot symbol).
- Now Player 2 gets to have a guess at Player 1's battleships.
- The first player to find all 12 battleships is the winner.

## Creating a timeline in Excel – Roman Emperors

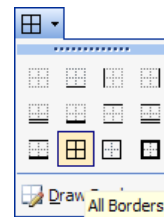
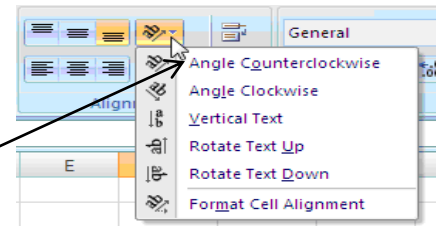
### Part 1 – Title for Timeline

1. Move your mouse to row A, column 1.
2. Highlight across the row until you have highlighted 5 columns (This is the number of emperors in your timeline).
3. Click on the merge and centre button
4. Type in Roman Emperors



### Part 2 – Name of Emperors

1. Go to row 3 and highlight the row by clicking on the number 3.
2. Click on the orientation icon and click on angle counter clockwise.
3. Type in the names of the emperors in each of the cells A3 to E3. Make sure they are in date order.
4. Highlight the cells which have names of emperors in them, click on the border icon then click on the button shown here.



### Part 3 – Year of Rule

1. Type in the dates of each emperor's reign in cells A4 to E4 in row 4. Make sure it matches the name of the emperor above it.
2. Highlight all the cells with dates in them and use the border icon (see step 4, part 2) to create a border around each date.

### Part 4 – Other Information

1. Go to row 5 and highlight the row by clicking on the number 5.
2. Click on the orientation icon and click on rotate text up.
3. Click on the wrap text button.
4. Type in any other interesting information about your emperor.
5. Put in borders around the information.

## Part 5 – Images






1. Place an image of each of the emperors in Row 6.
2. Double click on the line below the number 6 in the margin to change the row height.

**Type your name somewhere underneath the information!!!!!!**

**You can change the font size, style or colour of writing for any of the above as you would do in Word. You can also change the colour of the cells by highlighting them and clicking on the paint pot.**

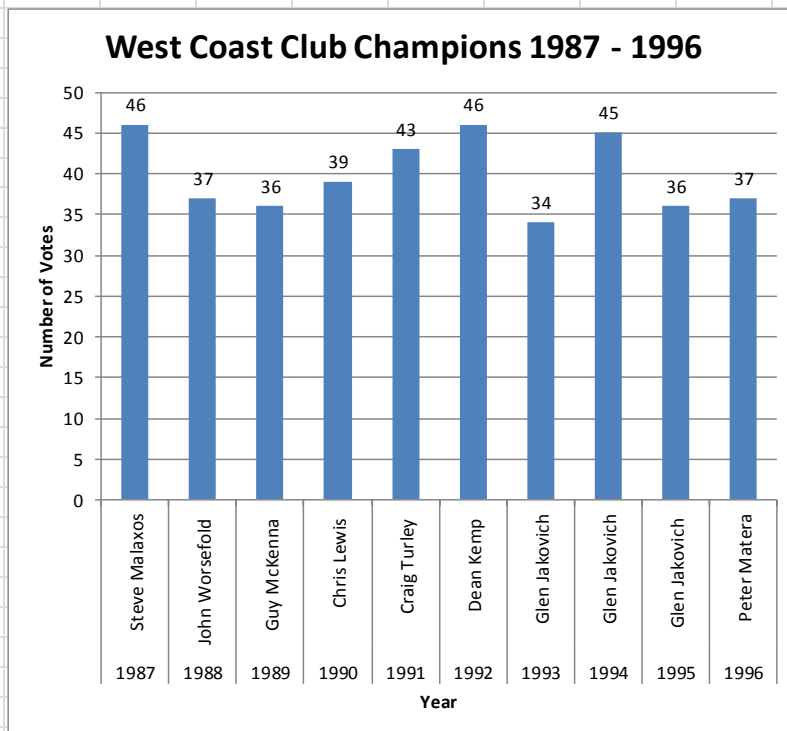
### Printing in Excel

1. Highlight all the columns with information in them by highlighting the cells with the letters in them at the top. Right click and change the column width to 8.
2. Click on File, Print, and change the orientation to landscape.
3. If your timeline goes over two pages, click on Margins and then click on Narrow.
4. Click on Print for printer Library BizHub. The teacher will put in a password to allow it to print.

Roman Emperors					
Augustus	Tiberius	Caligula	Claudius	Nero	
16/1/27BC - 19/8/14 AD	18/9/14AD - 16/3/37AD	18/3/37AD - 24/1/41AD	26/1/41AD - 13/10/54AD	13/10/54AD - 9/6/68AD	
Poisoned by his wife.	Assassinated by Caligula	Assassinated by Praetorian Guards and Senators	Poisoned by Agrippina the Younger - mother of Nero	Committed suicide after being declared a public enemy of the state.	
					

## Data Tables and Graphs

West Coast Club Champions		
Year	Player	Votes
1987	Steve Malaxos	46
1988	John Worsefold	37
1989	Guy McKenna	36
1990	Chris Lewis	39
1991	Craig Turley	43
1992	Dean Kemp	46
1993	Glen Jakovich	34
1994	Glen Jakovich	45
1995	Glen Jakovich	36
1996	Peter Matera	37



## Lesson Plans and Ideas for Excel for Students – Websites

<http://oakdome.com/k5/>

<http://www.edtechroundup.org/elementary.html>

[http://www.educationworld.com/a\\_tech/techlp/techlp004.shtml](http://www.educationworld.com/a_tech/techlp/techlp004.shtml)

<http://www.primaryresources.co.uk/ict/ict2.htm>