

كل ما يحتاجه الطالب في جميع الصفوف من أوراق عمل واختبارات ومذكرات، يجده هنا في الروابط التالية لأفضل مواقع تعليمي إماراتي 100 %

<u>تطبيق المناهج الإماراتية</u>	<u>الاجتماعيات</u>	<u>الرياضيات</u>
<u>الصفحة الرسمية على التلغرام</u>	<u>الاسلامية</u>	<u>العلوم</u>
<u>الصفحة الرسمية على الفيسبوك</u>	<u>الانجليزية</u>	
<u>التربية الاخلاقية لجميع الصفوف</u>	<u>اللغة العربية</u>	
<u>التربية الرياضية</u>		
مجموعات التلغرام.	مجموعات الفيسبوك	قنوات تلغرام
<u>الصف الأول</u>	<u>الصف الأول</u>	<u>الصف الأول</u>
<u>الصف الثاني</u>	<u>الصف الثاني</u>	<u>الصف الثاني</u>
<u>الصف الثالث</u>	<u>الصف الثالث</u>	<u>الصف الثالث</u>
<u>الصف الرابع</u>	<u>الصف الرابع</u>	<u>الصف الرابع</u>
<u>الصف الخامس</u>	<u>الصف الخامس</u>	<u>الصف الخامس</u>
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مدرسة منارة الشارقة الخاصة
مادة التصميم والتكنولوجيا
الصف 5
الفصل الدراسي 3

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UNITED ARAB EMIRATES
MINISTRY OF EDUCATION



YEAR OF
ZAYED

DESIGN AND TECHNOLOGY

Grade
5

TERM 3

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GRADE 5

TERM 3

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Unit 1

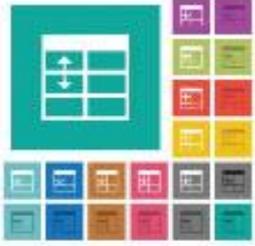
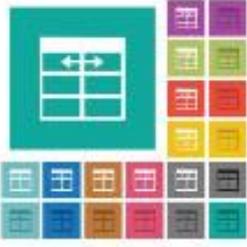
Introduction to Data Handling

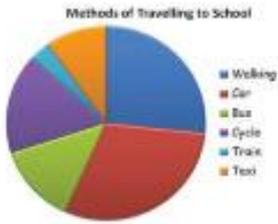
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Overview

Students will learn about **Data Types**, **Data Collection** and **Data Handling**. Students will become familiar with Microsoft Excel (Spreadsheet Software) features including Cells, Rows and Columns and learn how to input data and create a simple chart.

Keywords

Word	Image	Meaning
Microsoft Excel	 The image shows the Microsoft Excel logo, which is a green 'X' on a white background, surrounded by various colorful icons representing different software applications like Word, PowerPoint, and Outlook.	A software used to record data and create spreadsheets, graphs, charts
Columns	 The image shows a grid representing a spreadsheet. A large teal square contains a white grid with two vertical arrows pointing up and down, indicating columns. To the right of this square is a vertical column of smaller, colorful grid icons.	Columns are the vertical segments of a spreadsheet (labelled A, B, C.... etc)
Rows	 The image shows a grid representing a spreadsheet. A large teal square contains a white grid with two horizontal arrows pointing left and right, indicating rows. To the right of this square is a vertical column of smaller, colorful grid icons.	Columns are the horizontal segments of a spreadsheet (labelled 1, 2, 3.... etc)

<p>Cell</p>		<p>A cell is one container for information in a spreadsheet. Each cell can be identified by a column and row number eg. Cell A1 or Cell B3 etc....</p>
<p>Data Collection</p>		<p>Any method used to collect data. Can be done manually or with a computer. Examples; Manually taking the names of everyone in your class using paper and a pencil. Using a computer system to take the temperature every hour.</p>
<p>Data handling</p>		<p>how research data is stored or shown (displayed)</p>
<p>Bar Charts</p>		<p>Bar charts are a way of showing information graphically making it easier to understand.</p>
<p>Pie Charts</p>		<p>Pie charts are a way of showing information graphically. Normally they are used to show proportion of a total.</p>

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Learning outcomes:

- 1.1. Understand the purpose of Microsoft Excel
- 1.2. Understand data types and methods for data collection
- 1.3. Understand visual data specifically Bar Charts
- 1.4. Develop skills to handle data using Microsoft Excel
- 1.5. Demonstrate skills above to input data and create a Bar Chart

Introduction

This term will learn about data collection and handling. We will identify different types of data and some methods of collection. We will manually collect and handle data. We will also learn how to use Microsoft Excel to handle and create graphical data (Bar Charts).

About: Data Types

There are many different types of data that we can use and store manually or electronically. The list below are some data types that are used often:

Data Type	Data Examples
Text	Gibran Iffat or Ministry of Education, Dubai,
Number (integer)	23 or 1,000
Date	02/12/17 or 02/12/2017
Time	3.30pm or 15:30
True/False (boolean)	True or False
Graphical	 or  or 

During this term we will mainly be using text and number data types.



Activity 1

Thinking about your personal data can you identify;

1. An example of **text** data

2. An example of **number** data

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3. An example of **date** data

About: Data Collection

Data collection is the method used to gather data before it can be displayed in a way that is easy to understand. Data collection can be done manually or electronically. There are many data collection methods some are listed below;

Some **Manual** methods;

- Counting (eg. Number of pupils in the class)
- Measuring (eg. Height of each pupil in the class)
- Asking questions

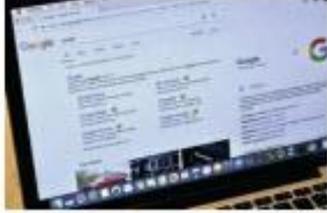
Manual methods usually need to be used with paper and a pencil to record data collected.

Some **Electronic** methods;

- Online forms (eg. Registration form for an email account)
- Sensors (eg. electronically collect and store temperature over time)
- Research (eg. Gathering information available online)

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4. Explain the data collection methods below and when they could be useful. Also identify if they are Manual or Electronic;

Data Collection Method	Explanation	Type (Manual/Electronic)
		
		
		
		

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About: Data Handling

Data handling is any way of storing, using and showing data in a way that is easy for other people to understand. Data handling is used in lots of subjects like Science and Math. This helps with a STEAM (Science, Technology, Engineering, the Arts and Mathematics) education.

There is lots of ways data can be shown using charts. Here are some examples:



Some of the charts can be hard to understand. This term you will only use some of the charts to show your work.

Some data has lots of numbers and information. The charts will make it easier to record data. The charts will use colors and shapes that are good to look at and easy to study.

With the help of the sample pictures above, do the following activity in groups. Use colors if you can:



Activity 2

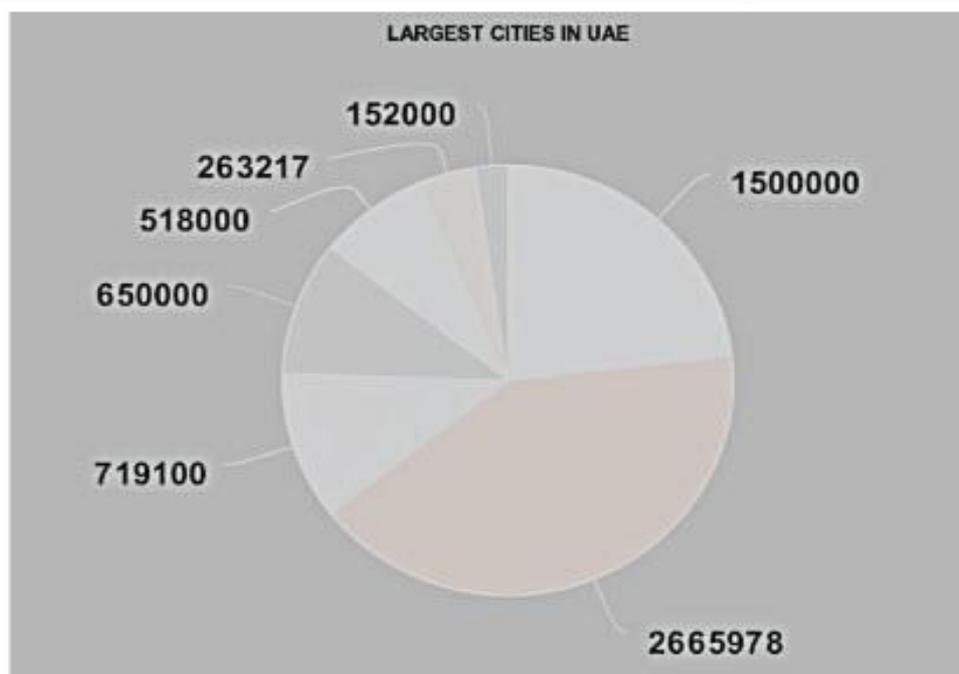
Complete the graphs/charts using the information given:

1. Create a bar chart using the birthday of each student in your class



2. Pick a colour for each City in the table below, then use your chosen colours for the segments in the pie chart. Your pie chart will then clearly show the population of the largest cities in the UAE as a percentage of the total population.

N°	City	Population	Emirate	Pie Chart Colour
1	Dubai	2,665,978	Dubai	
2	Abu Dhabi	1,500,000	Abu Dhabi	
3	Sharjah	719,100	Sharjah	
4	Al Ain	650,000	Abu Dhabi	
5	Ajman	518,000	Ajman	
6	Ras Al Khaimah	263,217	Ras Al Khaimah	
7	Fujairah	152,000	Fujairah	



About: Microsoft Excel

Microsoft Excel is a type of spreadsheet software. Spreadsheet software is used to handle information (using and show information in a way that is easy for people to understand). Microsoft excel mainly uses text and number data that can also be shown graphically (using graphs and charts).



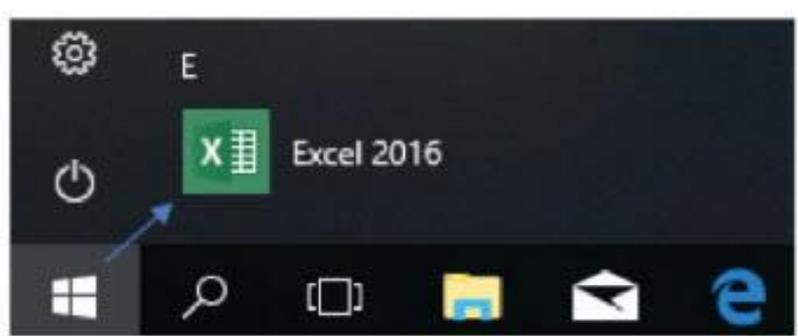
Activity 2

To open Microsoft Excel you can double click this icon;

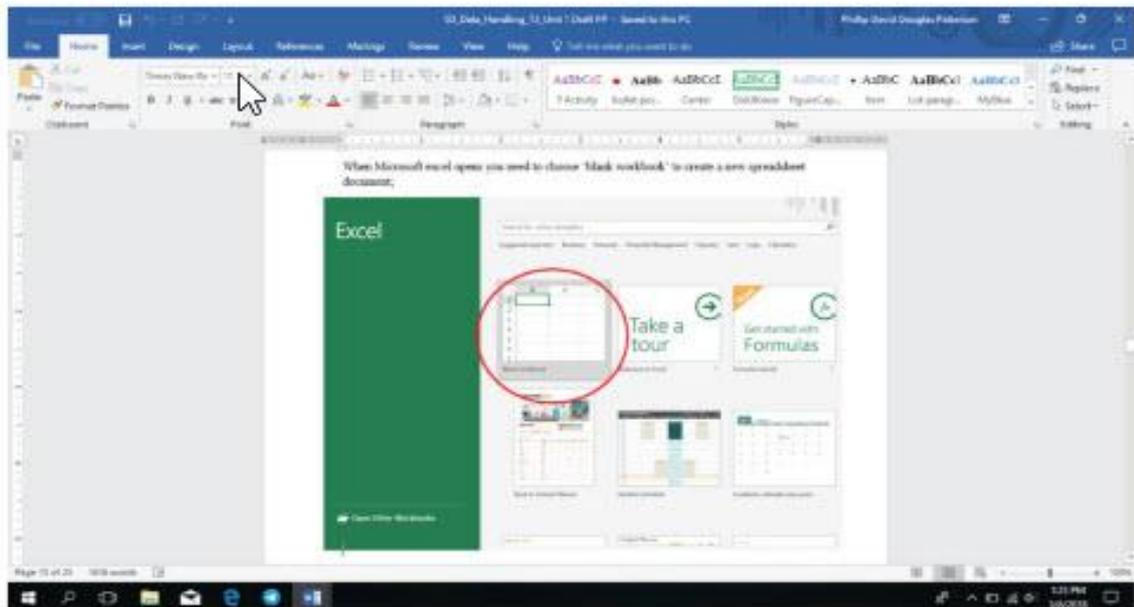


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If you don't have a desktop icon you can find Excel using the Microsoft Windows menu

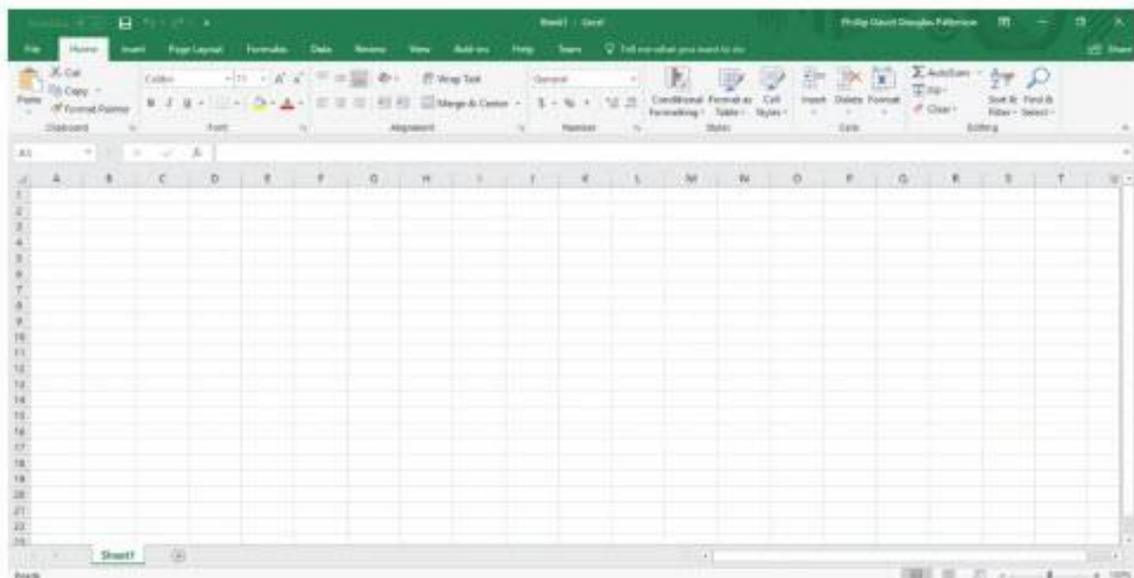


When Microsoft excel opens you need to choose 'blank workbook' to create a new spreadsheet document;



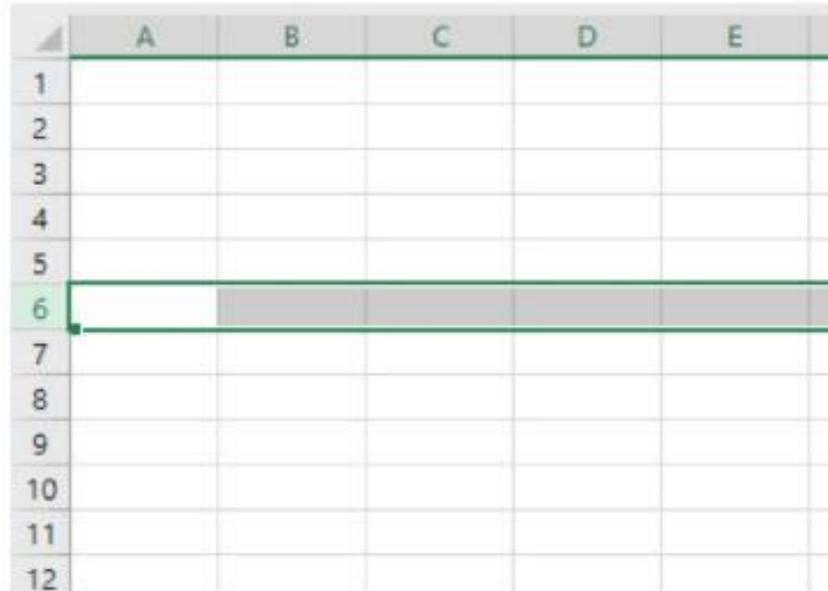
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Your new spreadsheet document will look like this;



About: Rows

The rows are numbered and are horizontal (across the screen). Below row 6 is selected;

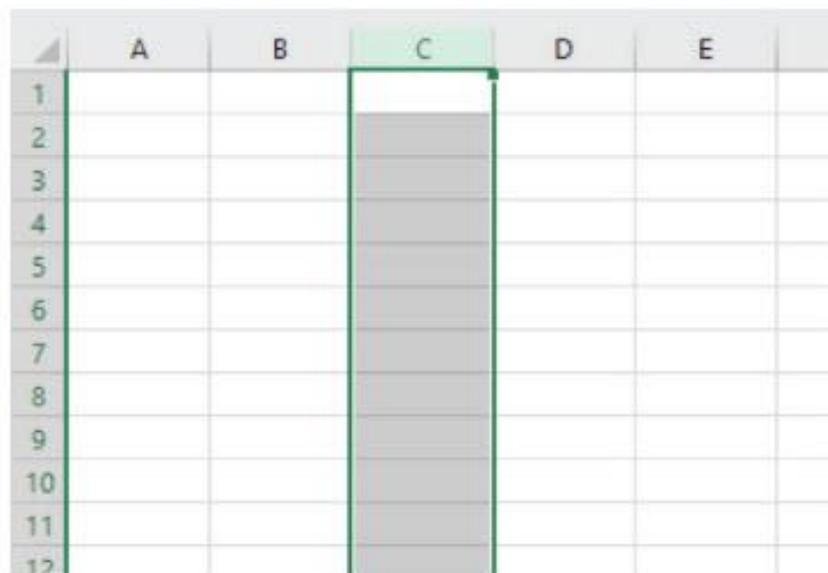


An Excel spreadsheet with columns labeled A through E and rows numbered 1 through 12. Row 6 is highlighted in grey, indicating it is selected. The selection starts from the left margin and extends across the entire width of the spreadsheet.

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

About: Columns

The columns use letters and are vertical (down the screen). Below column C is selected;

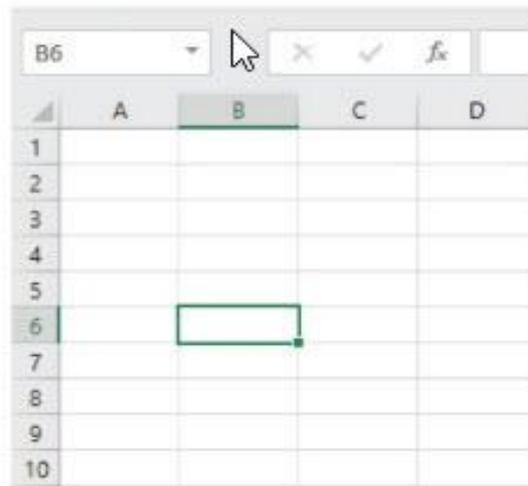


An Excel spreadsheet with columns labeled A through E and rows numbered 1 through 12. Column C is highlighted in grey, indicating it is selected. The selection starts from the top margin and extends down the entire height of the spreadsheet.

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

About: Cells

Cells are used to store data like text or numbers. We refer to Cells by their column and row number. Below Cell B6 is selected;

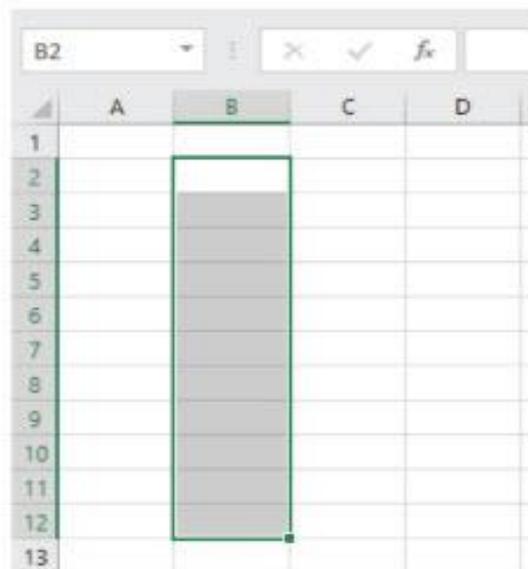


Activity 2

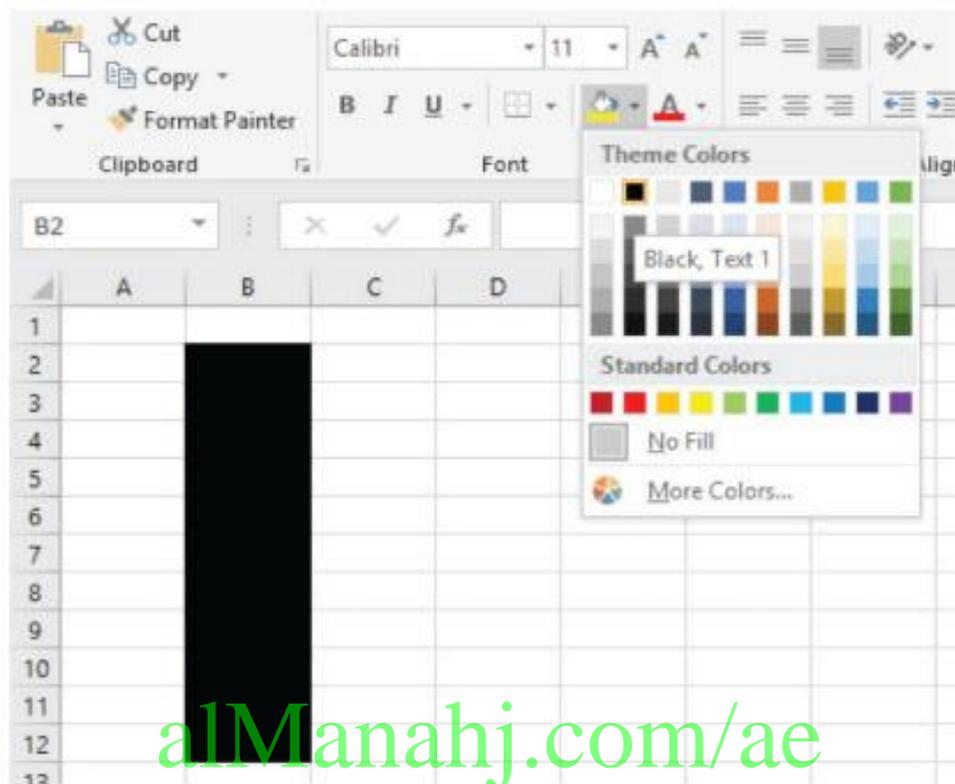
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Shading rows and columns

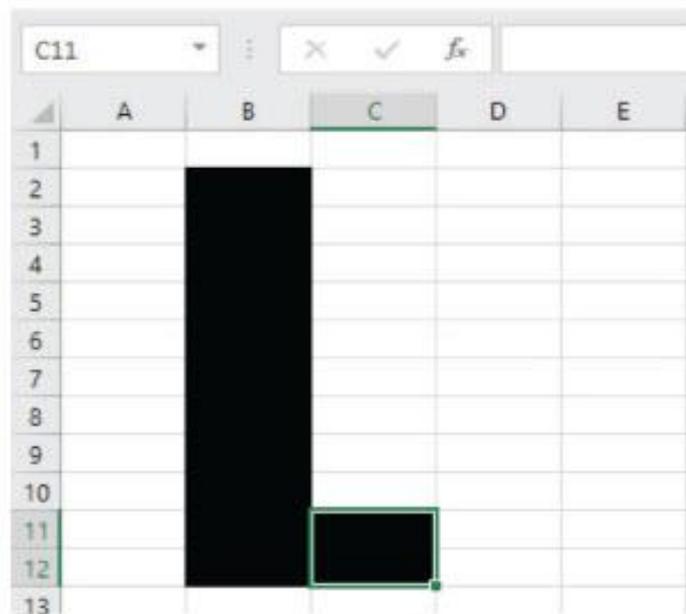
Starting with a blank spreadsheet document click, hold and drag from B2 to B12 to select a range of cells as shown below;



With the cells selected. Use the fill colour tool from the menu to set the colour to Black:



Now select cells C11 to C12 and use the fill colour tool to set the colour to Black;



Now select cells **D2** to **D12** and use the fill colour tool to set the colour to Black.

Ok. Now you know how to use fill colour set the following cells;

Cells	Fill Colour
F2 to F12	Red
G2 to G4	Red
G7 to G8	Red
H2 to H12	Red
J2 to J12	Green
K2 to L4	Green
K6 to L8	Green
K11 to L12	Green

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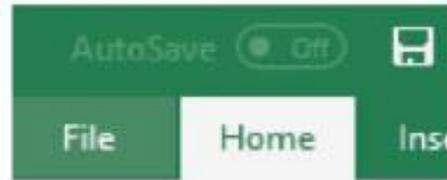
What word do the coloured cells show on the Spreadsheet?

Extension

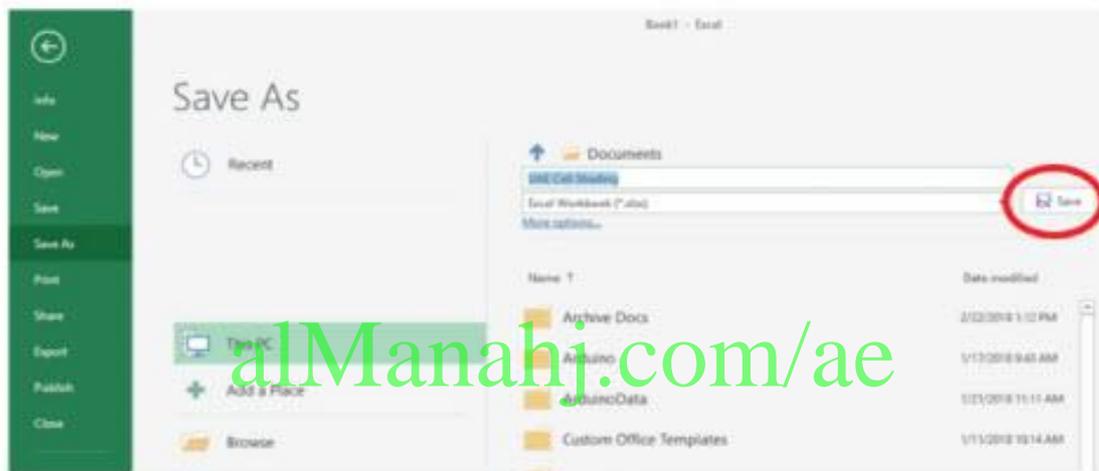
Can you create the UAE flag using 'fill colours' on your Spreadsheet?



To save your spreadsheet click **File** from the Menu



choose **Save As**, choose the folder and name your file appropriately eg. 'Cell Shading Activity' then click **Save**;



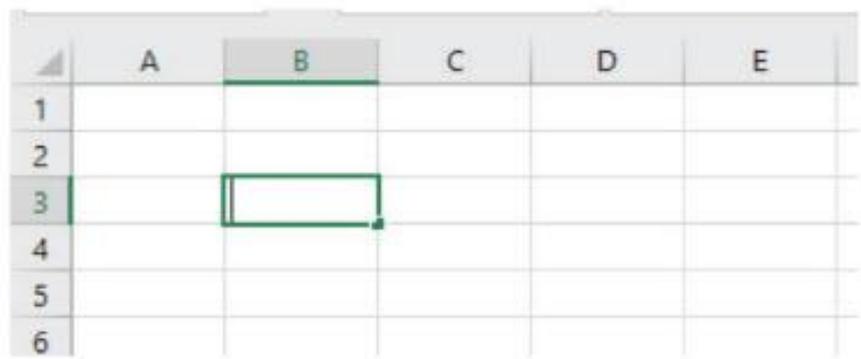
Activity 4

Collecting and Inputting data

Now we are familiar with Spreadsheet cells we are going to use a spreadsheet to input and handle data. First we will collect the data we need from Activity 2 about the Number of birthdays in each month for pupils in the class. Complete the table below in your book;

Class Name/Number:												
	January	February	March	April	May	June	July	August	September	October	November	December
Birthdays in Each Month												

Now we have collected the data you will need to create a new Spreadsheet document to input the data to the computer. Double click on a cell so you can use the keyboard to input **text** or **numbers**;



Keep inputting text and numbers until you have inputted all the data from the table you completed in the book. Example below;

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2	Class Name/Number:	5,7											
3													
4		January	February	March	April	May	June	July	August	September	October	November	December
5	Birthdays in Each Month	4	2	6	9	3	0	4	1	2	0	1	2

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Challenge

- Use formatting tools like **Bold**, **Alignment** and **Borders** to improve the layout of your data. Tools shown below;



Remember to save your spreadsheet file giving it an appropriate name like 'Class Birthdays'

Now that we have inputted data into a spreadsheet we can use the spreadsheet to create graphs and charts to show data graphically. Graphs and charts are useful because they can summarise large amounts of data and make them easier to understand. This is useful as large spreadsheet files may have thousands of cells of data.

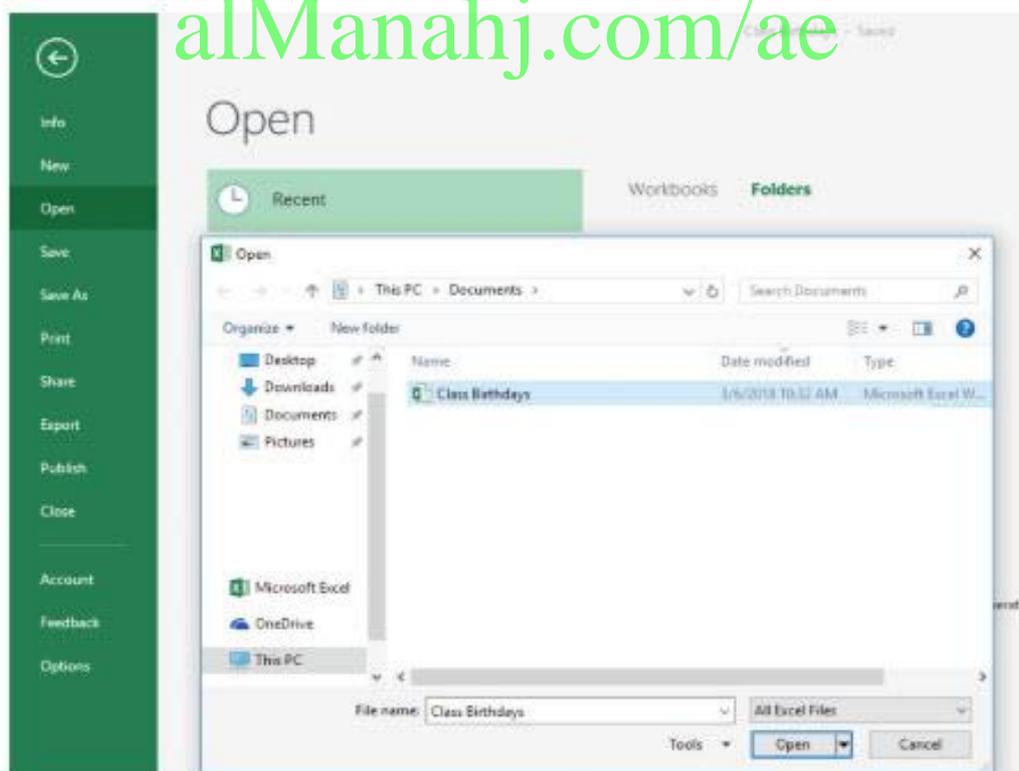


Activity 5

Creating a Bar Chart

Start by opening the Spreadsheet file you created containing the data about pupil's birthdays. The file should be called something like 'Class Birthdays':

Go to **File** then **Open** and then choose the appropriate file and folder;



To create a Bar Chart click hold and drag to select the data you need as shown below:

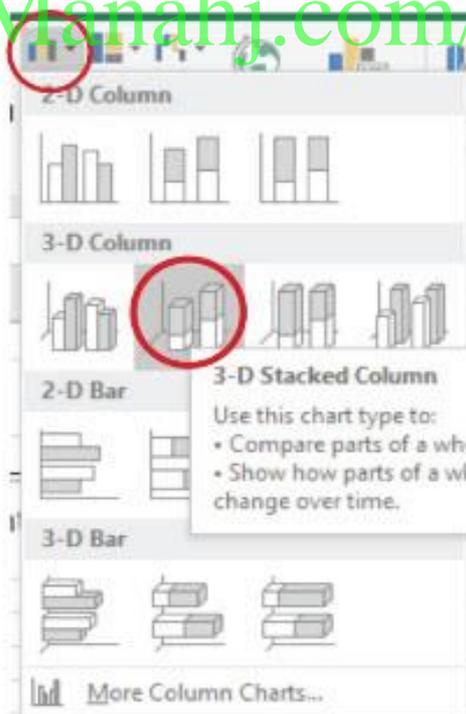
	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2	Class Name/Number:												
3													
4		January	February	March	April	May	June	July	August	September	October	November	December
5	Birthdays in Each Month	4	2	6	9	3	0	4	1	2	0	1	2
6													
7													

With the data selected click the **Insert** tab from the menu:

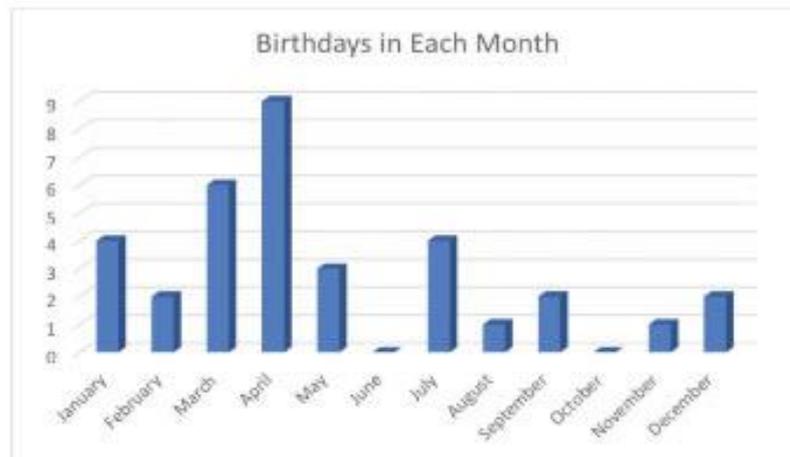


From the Insert tab select the Bar Chart icon and choose a design from the available styles. This example uses a '3D Stacked Column' design:

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Your finished Bar Chart should look something like this;



Challenge

1. Can you use the chart tools to change the colour of your Bar Chart?
2. Looking at your chart can you identify which Month has the most birthdays?

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Extension – Using the skills you learned when creating the Bar Chart can you now create a Pie Chart to show Pupil Birthdays like the example below;



Remember to save your Spreadsheet file when you have finished your work.

Unit 2

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Project

Overview

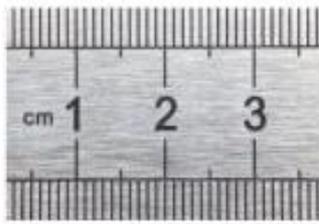
Students will continue with data collection. They will focus on distance, length, height and width. Pupils will create more bar charts on paper and in excel.

For the term project, students will create a balloon powered vehicle. They will make the vehicle in class and record data for distance using the key principles learned previously in unit 1.

This data will be put into Microsoft Excel to create a chart/graph using the instructions provided in Unit 1.

Keywords

Word	Image	Meaning
Distance		Distance is a numbered measurement of how far objects are apart.
Vehicle		A thing used to transport people or items
Measuring Tape		A tool used to help measure distance

Ruler		A tool used to help measure distance
Microsoft Excel		A software used to record data and create spreadsheets, graphs, charts

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Learning outcomes:

- 1.1. Explain measurement
- 1.2. Identify distance, length, height and width
- 1.3. Design and make individual balloon vehicle
- 1.4. Work together in groups to collect and record data
- 1.5. Take measurements using tape for distance travelled
- 1.6. Create an Excel file to show data collection

Measurement

A number that shows the size or amount of something. Usually the number is a standard measurement, such as a metre, kilogram, litre or temperature.

Measurement can be used for lots of things you may use daily. Such as distance, height, weight, quantity. In this unit we will focus on distance, height, length and width.

The units for measurement used in the UAE is metric. The metric system works with 'millimetres' (mm), 'centimetres' (cm), 'metres' (m) and 'kilometres' (km) to measure distance, height, length or width.



Measuring tools are used to take the measurement of certain objects.



Activity 1

Circle the measuring tools from the images below:



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Distance

Distance is the measurement between objects. This is the measured space between two points. Mostly we use distance to measure how far a person is away from another person or a place.

For example;

'Khawlah lives 16km away from Amna'

Or

'Khalifa lives 200m away from the nearest Mosque'.

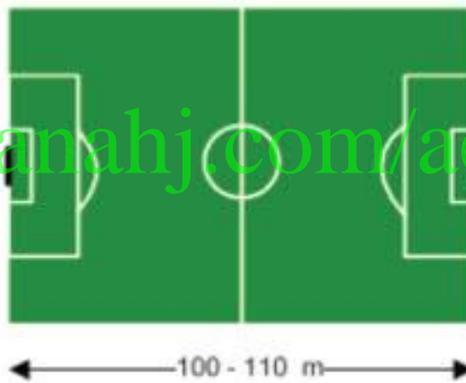
We normally choose the nearest unit of measurement to describe how far the distance from one object to another is.

For example:

'The mall is 5km away from my home'.



'The football goals are 100m apart'.



'The cricket ball was 5cm away from hitting the wicket'.





Activity 2

Use a measuring tool to measure the distance on the lines below from A to B to the nearest cm:



..... cm



..... cm

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..... cm



..... cm

Length, Height and Width

Length, height and width are very similar. They are all measurements of an object. When used together some people get confused to which measurement should be called 'length', 'height' or 'width'.

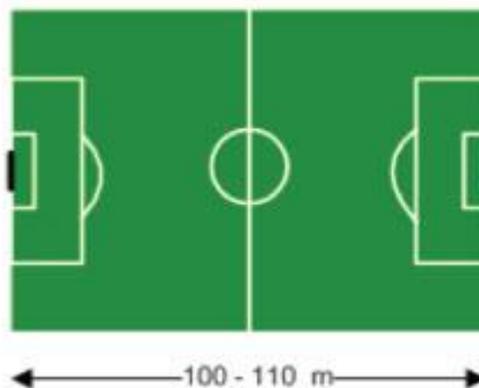
Length is the longest side of an object:

Height is the tallest vertical side of an object:

Width is the remaining measurement that is shorter than length:



'The football field is 100m in length'.

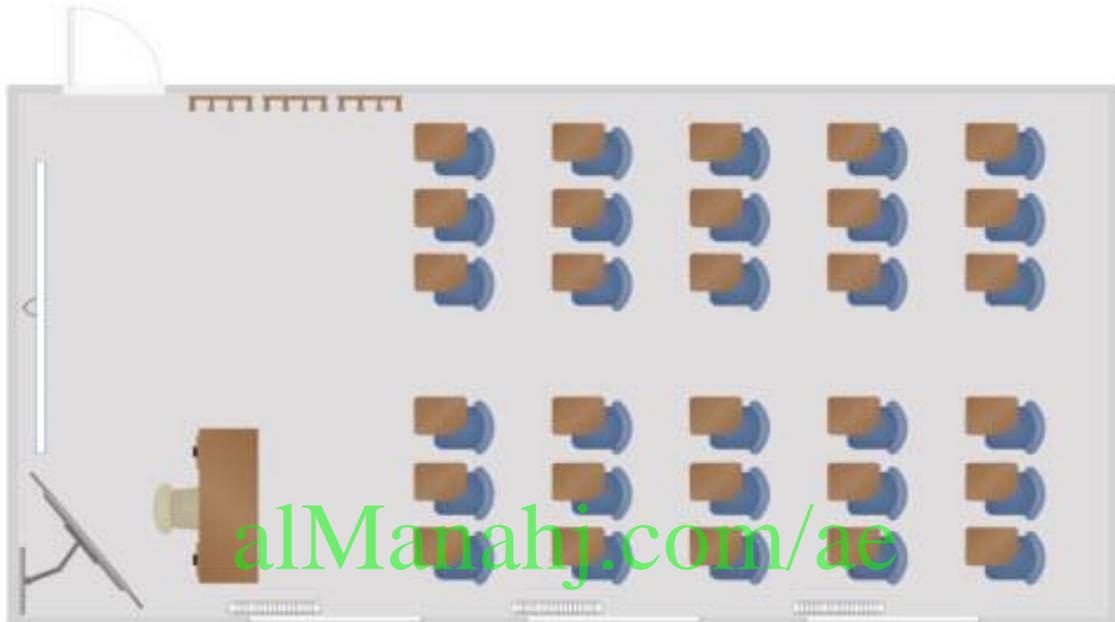


Can you spot the difference in this example and the example in distance?



Activity 3

In groups, measure the length and width of your classroom: You can insert the results you get from your room on the diagram below; Label the correct length and width:



Discuss in your groups some other objects in the classroom that you can take measurements of:

You can enter some examples in the table below:

Distance	Length, Height and Width



Activity 4



Measure the height of each member in your group (in cm) and create a bar chart on Excel to display this data:

You can create a quick sketch of the graph to help note the data before entering into Excel.



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Pupil Name:



Project:

For the project design a balloon powered car (or any vehicle) using any materials from home and school.

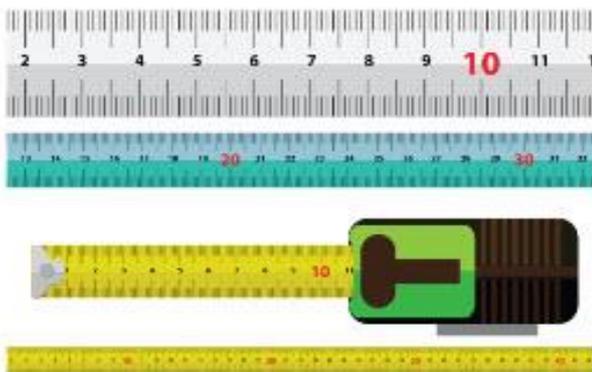


Everyone in your group can make 1 vehicle each and test it against other groups in your class.

You can use lots of materials to help make your vehicle.



You can use a ruler or measuring tape to record the distance the vehicle moves.





Activity 1

Draw some ideas for your balloon powered vehicle in the space below:

A large, empty rectangular box with a black border, intended for drawing ideas for a balloon-powered vehicle.

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Excellent work!!

Now watch the video and get some ideas how to make a balloon powered vehicle:

<https://youtu.be/-OENItg1dU>



Please watch your teacher show you how to make a balloon-powered car safely now.

(Teacher demonstration)



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Make your vehicle using any materials available. Add designs to the vehicle by using colours or paints.

When you are finished, test out the balloon-powered vehicle.

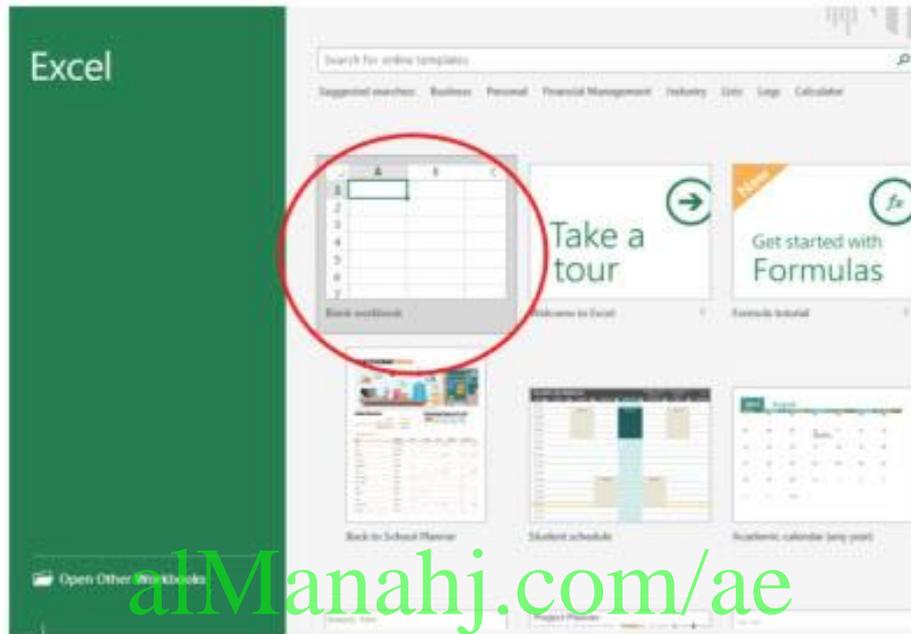
To make more fun in the classroom, make a starting line and then measure the distance each vehicle moves.



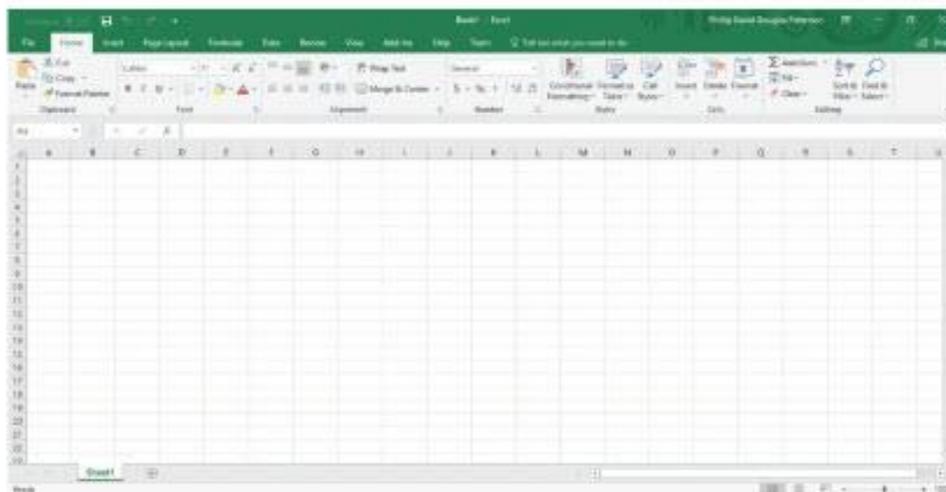
Use the data you collect and enter it into Microsoft Excel to make a bar chart for your group.

Follow the picture instructions to help you.

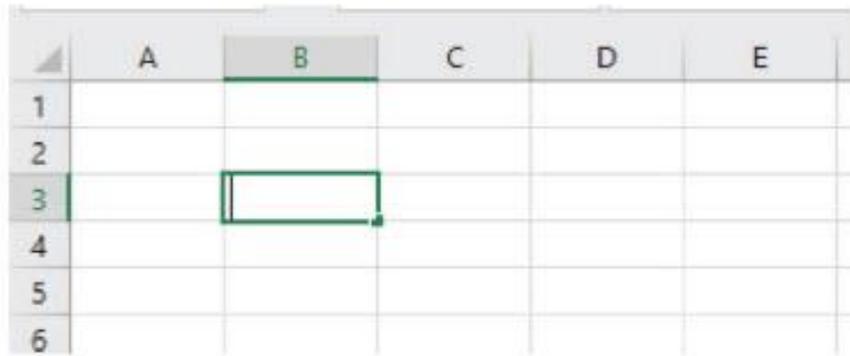
Select 'Blank Workbook'



This is what a new Spreadsheet file looks like;



Now we will input the data to the Excel. Just like Unit 1 we need to double click on a cell and use the keyboard to input text or numbers;

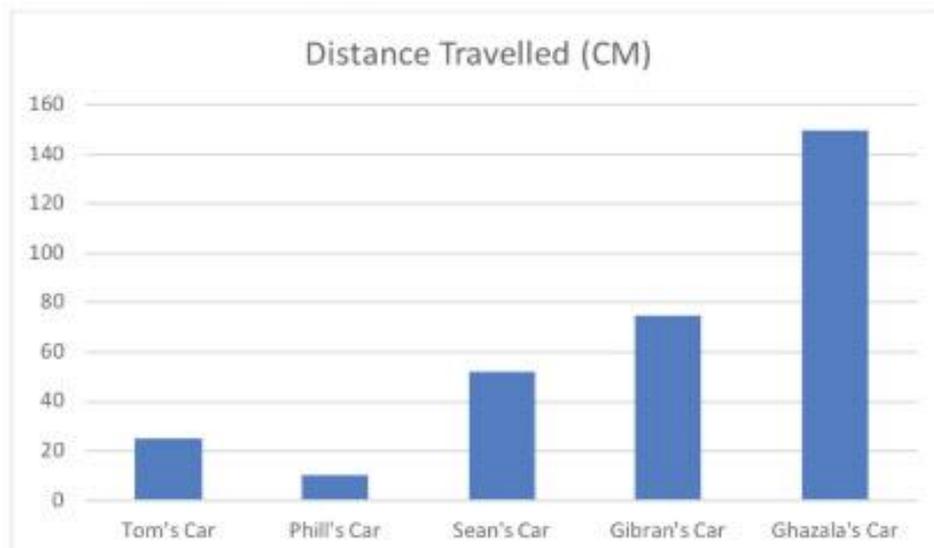


	A	B	C	D	E
1					
2					
3					
4					
5					
6					

Keep inputting text and numbers until you have inputted all the data you collected about the distances the Car's travelled.

When all the data has been entered click hold and drag to select the data then create a bar chart using the skills you learned in Unit 1.

Your Bar Chart will look something like this;

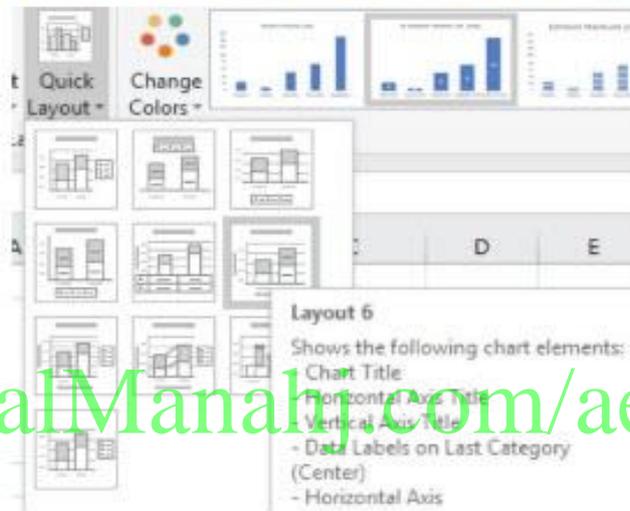


We will now use 'Quick Layout' to Change the title and add Axis labels;

Left click on your chart then choose Chart Tools and Design from the menu;



From the menu click Quick Layout choose Layout 6 as shown below;



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Then double click on the chart title and the axis titles to give them appropriate labels as shown below;



Collecting the Data

1. **Change the colour of your chart**
2. **Can you make at least two different charts/graphs to show the data you have collected about the cars.**

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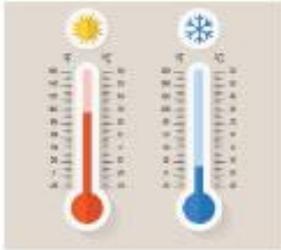
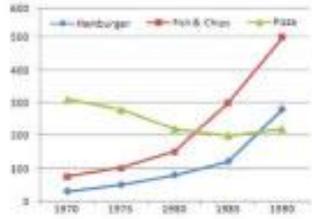
Unit 3

Temperature
and Line Graphs

Overview

In this unit students will learn about temperature. They will collect data and create information graphs in Excel to changes in temperature over time.

Keywords

Word	Image	Meaning																								
Temperature		how hot or cold something is																								
Humidity		Measurement of how much water there is in the air																								
Line graph	 <table border="1"> <caption>Line Graph Data (Estimated)</caption> <thead> <tr> <th>Year</th> <th>Hamburger</th> <th>Fish & Chips</th> <th>Pizza</th> </tr> </thead> <tbody> <tr> <td>1970</td> <td>50</td> <td>100</td> <td>400</td> </tr> <tr> <td>1975</td> <td>70</td> <td>150</td> <td>350</td> </tr> <tr> <td>1980</td> <td>100</td> <td>250</td> <td>300</td> </tr> <tr> <td>1985</td> <td>150</td> <td>400</td> <td>250</td> </tr> <tr> <td>1990</td> <td>250</td> <td>550</td> <td>200</td> </tr> </tbody> </table>	Year	Hamburger	Fish & Chips	Pizza	1970	50	100	400	1975	70	150	350	1980	100	250	300	1985	150	400	250	1990	250	550	200	A graph/chart used to show data recorded over a period of time
Year	Hamburger	Fish & Chips	Pizza																							
1970	50	100	400																							
1975	70	150	350																							
1980	100	250	300																							
1985	150	400	250																							
1990	250	550	200																							
Weather website		A website which will help you record data for weather anywhere in the world. http://www.uaeweather.ae/																								

Learning outcomes

- 1.1. Explain temperature and humidity
- 1.2. Identify why line graphs are used
- 1.3. Record temperature and humidity data over 5 days
- 1.4. Create line graphs in Excel using recorded data

Temperature

Temperature measures how hot or cold something is. The UAE is a very hot country for most of the year. This means that air-conditioning and fans are used to lower the temperature, mostly during Summer.

The unit for measuring temperature in the UAE is called 'degrees Celsius' or °C.



Learn about temperature here: https://youtu.be/2ef3a9nL_KI



Activity 1

Match the images to the Hot or Cold symbol.

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Humidity

Humidity measures how much water there is in the air. Humidity can make the air feel different if the humidity is high or low. During the Summer months in UAE, the humidity gets higher. High humidity and high temperature together make it very hard to be outside.

It makes breathing feel harder.



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A rainforest has high humidity all year.



A desert area has high temperatures most of the year and high humidity in summer.



Activity 2

Measuring temperature and humidity in school using PocketLab Voyager.

1. What places are hot place in school? Circle your answers



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2. What places in school are colder? Circle your answers

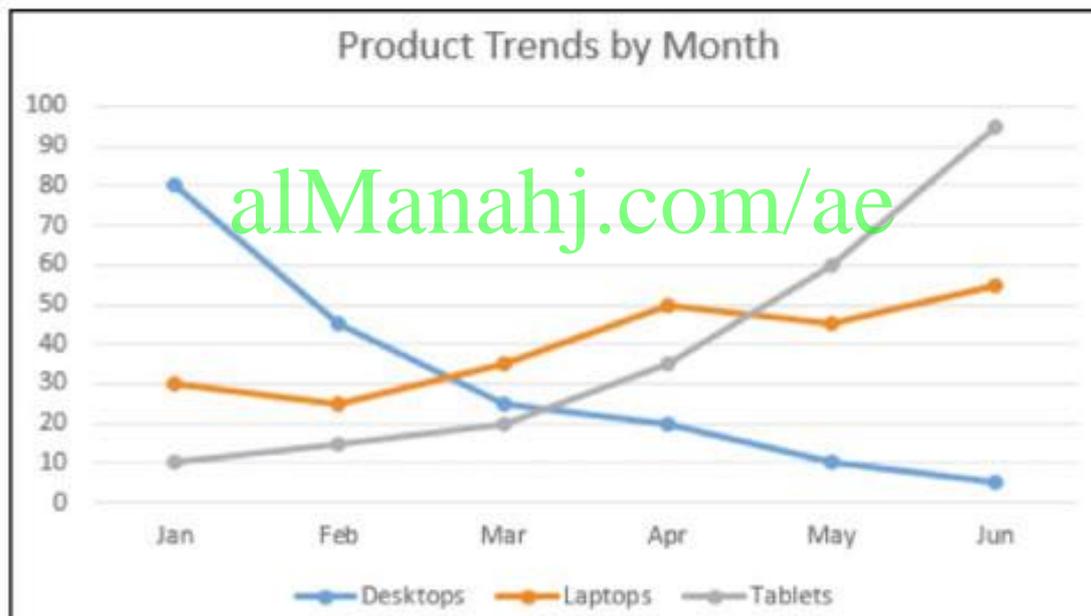


3 What can help make the temperature colder in school? Circle your answers.



Line Graphs

A line graph, or a line chart, is a type of chart used to display the value of something over time. For example, how many laptops were sold in a month for a store.



A line graph lets you compare this data, against other data and display it for all to see the trends easily.

Like in this example where it compares 'laptop' sales to 'desktop' and 'tablet' sales over 6 months.



Activity 3

Discuss in groups and note what you can see in the above line graph:

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Activity 4

Use the <http://www.uaeweather.ae/> website to record the temperature and relative humidity of 3 places in the World over 5 days.

You will need to follow the steps to help you record the data for temperature and humidity:

Open <http://www.uaeweather.ae/> website: The homepage should look like this

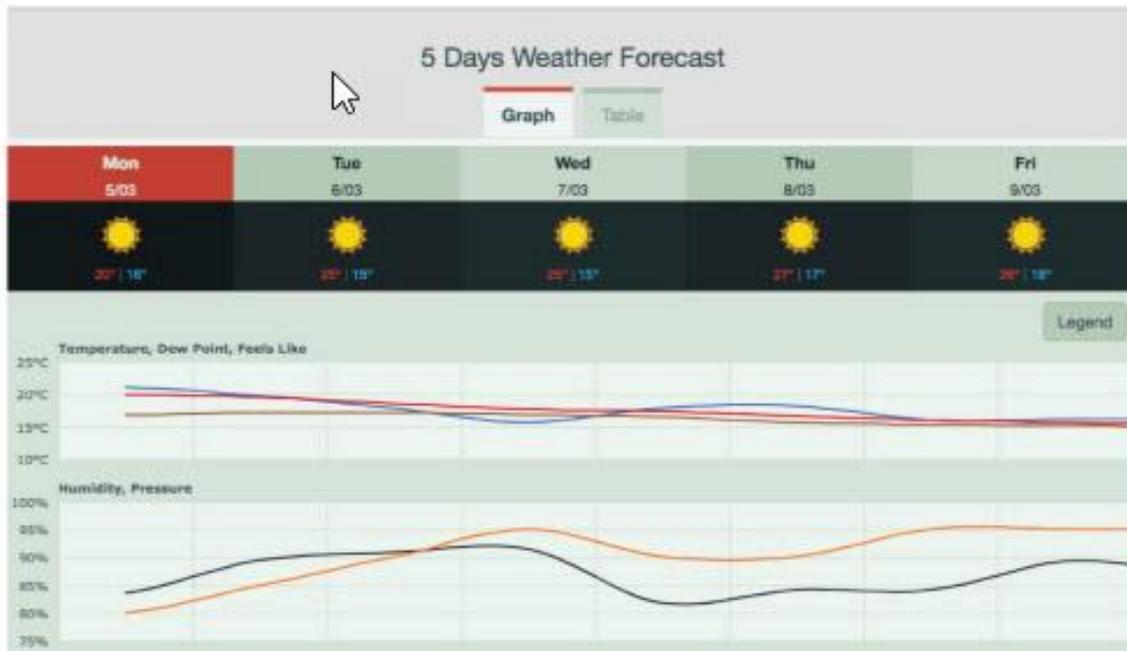


Select the area of the UAE you are from. For example Ajman:

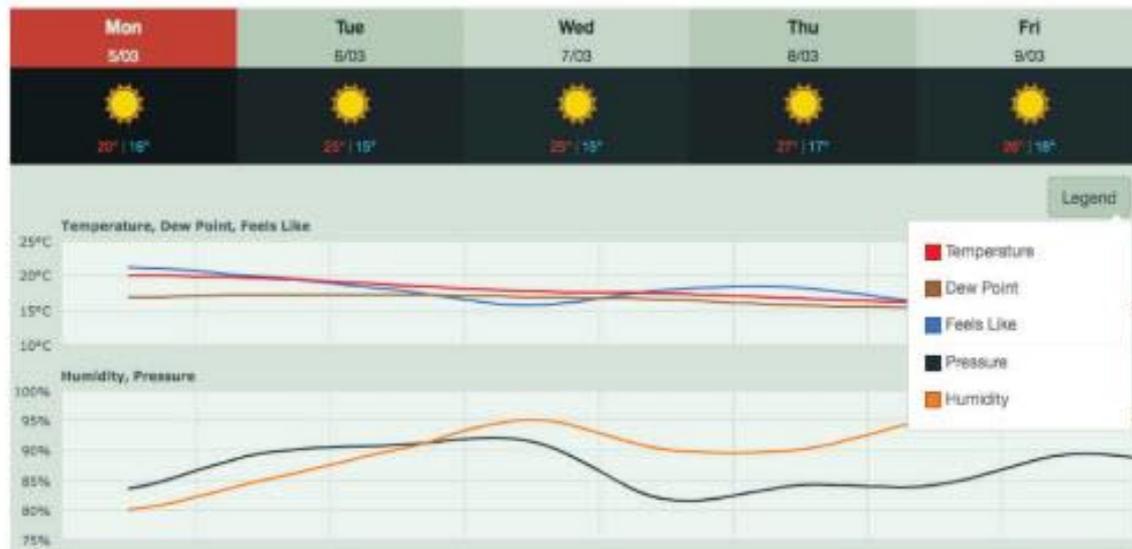
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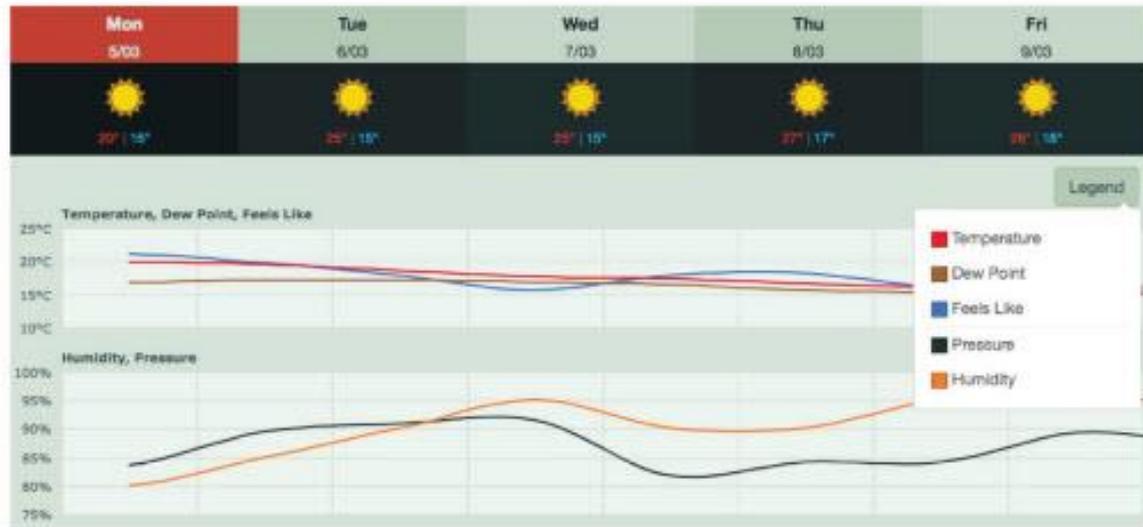
When you scroll down this page you will see lots of different data measurements:



You will see some line graphs on the website displaying data. If you select "Legend" it will show you what type of data.



It also shows you a 5 day forecast. You can see the expected 'High' and 'Low' temperatures for each day.



If you select the table option, it will display measurements for multiple weather related data.

5 Days Weather Forecast

Graph **Table**

Hour	Cond.	Temp.	FeelsLike	Dewpoint	Humidity	Wind	Pressure
17:00	☉	19.90°	21.14°	16.90°	80.00%	2 km/h	1015.01 hPa
18:00	☉	19.60°	19.78°	17.10°	85.00%	2 km/h	1015.37 hPa
19:00	☉	18.50°	17.87°	17.20°	90.00%	2 km/h	1015.46 hPa
20:00	☉	17.70°	15.70°	16.90°	95.00%	3 km/h	1015.49 hPa
21:00	☉	17.40°	17.87°	16.40°	90.00%	3 km/h	1014.91 hPa
22:00	☉	16.60°	16.11°	15.70°	90.00%	3 km/h	1015.06 hPa
23:00	☉	18.00°	15.96°	16.30°	95.00%	3 km/h	1015.05 hPa

The only data you need to record is daily temperature and humidity



If you want to record it at the same time every day you can use the 'table' option to collect the data:

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5 Days Weather Forecast

Graph Table

Mon	Tue	Wed	Thu	Fri
5/03	6/03	7/03	8/03	9/03
29° 18°	25° 18°	28° 18°	27° 17°	28° 18°

Hour	Cond.	Temp.	Feelslike	Dewpoint	Humidity	Wind	Pressure
17:00	●	19.90°	21.14°	16.80°	80.00%	2 km/h	1015.01 hPa
18:00	●	19.60°	19.78°	17.10°	85.00%	2 km/h	1015.37 hPa
19:00	●	18.50°	17.87°	17.20°	90.00%	2 km/h	1015.45 hPa
20:00	●	17.70°	15.70°	16.90°	95.00%	3 km/h	1015.49 hPa
21:00	●	17.40°	17.87°	16.40°	90.00%	3 km/h	1014.91 hPa
22:00	●	16.80°	18.11°	15.70°	90.00%	3 km/h	1015.05 hPa
23:00	●	16.00°	16.95°	15.20°	95.00%	3 km/h	1015.06 hPa

You can follow the same steps with two different cities in the World: For example 'New York' and 'London'



You can do this by selecting the 'World' tab and typing the city you are looking for:

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Record your data below to help with creating the Excel file: Here is an example

Day	City 1:	Temperature °C	Relative Humidity %
Sunday	Ajman	22	70
Monday	Ajman	20	75
Tuesday			
Wednesday			
Thursday			

City 1: Write the Name of the City and data recorded for each day:

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Day	City 1:	Temperature °C	Relative Humidity %
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			

City 2: Write the Name of the City and 'data' recorded for each day:

Day	City 2:	Temperature °C	Relative Humidity %
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			

City 3: Write the Name of the City and 'data' recorded for each day:

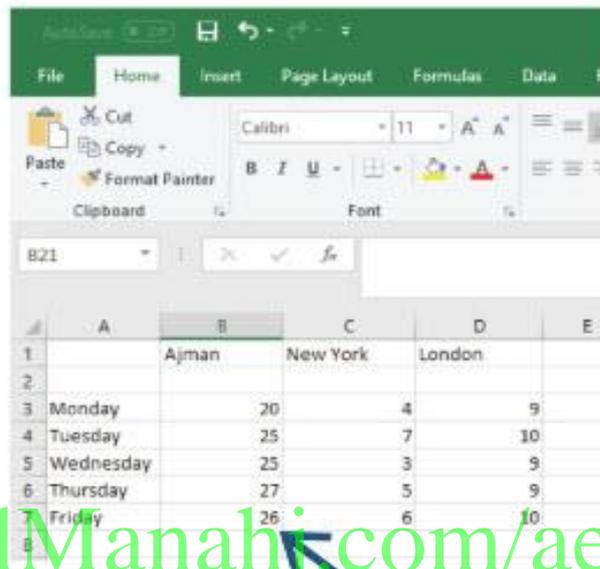
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Day	City 3:	Temperature °C	Relative Humidity %
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			

Entering Data Into Excel for Line Graph

The following steps will show you how to enter the data you recorded over 5 days into Excel for a line graph.

Step 1: Insert the data you have collected over the past 5 day for temperature



	A	B	C	D	E
1		Ajman	New York	London	
2					
3	Monday	20	4	9	
4	Tuesday	25	7	10	
5	Wednesday	25	3	9	
6	Thursday	27	5	9	
7	Friday	26	6	10	

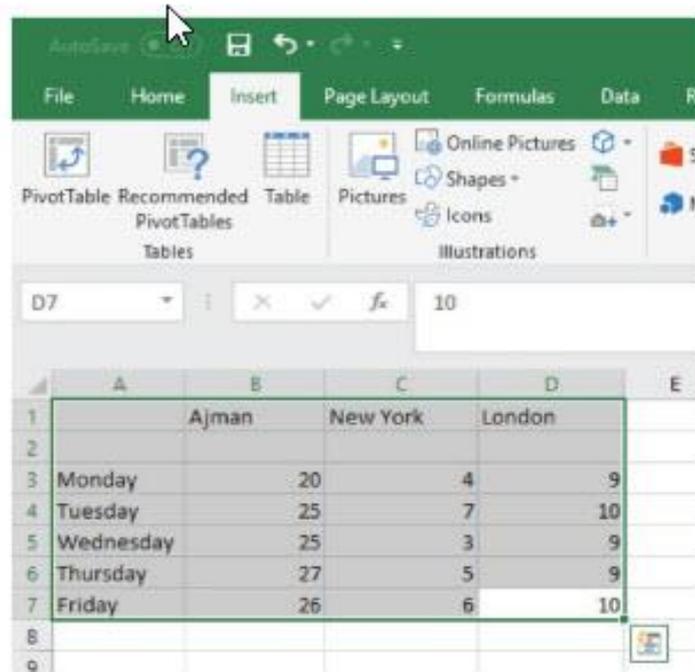
The data has been recorded from <http://www.uaeweather.ae/>

5 Days Weather Forecast

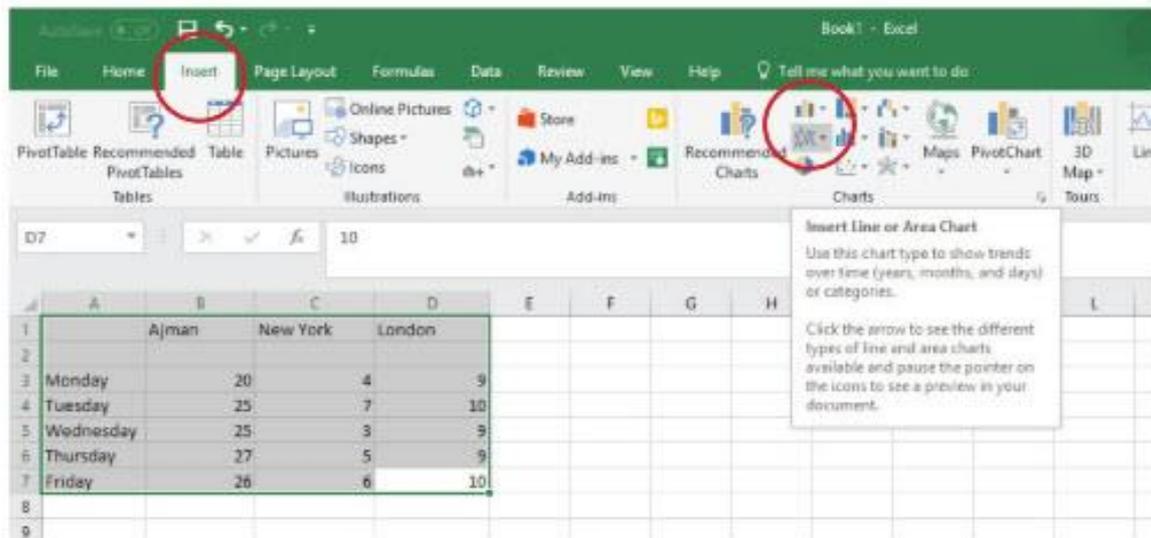
Graph Table

	Mon 5/03	Tue 6/03	Wed 7/03	Thu 8/03	Fri 9/03		
	 20° / 18°	 25° / 18°	 25° / 18°	 27° / 17°	 26° / 18°		
Hour	Cond.	Temp.	Feelslike	Dewpoint	Humidity	Wind	Pressure
17:00		19.90°	21.14°	16.90°	80.00%	 2 km/h	1015.01 hPa
18:00		19.80°	19.78°	17.10°	85.00%	 2 km/h	1015.37 hPa
19:00		18.90°	17.87°	17.20°	90.00%	 2 km/h	1015.45 hPa
20:00		17.70°	15.70°	16.90°	95.00%	 3 km/h	1015.69 hPa
21:00		17.40°	17.87°	16.40°	90.00%	 3 km/h	1014.91 hPa
22:00		16.80°	16.11°	15.70°	90.00%	 3 km/h	1015.05 hPa
23:00		16.00°	15.95°	15.00°	95.00%	 3 km/h	1010.05 hPa

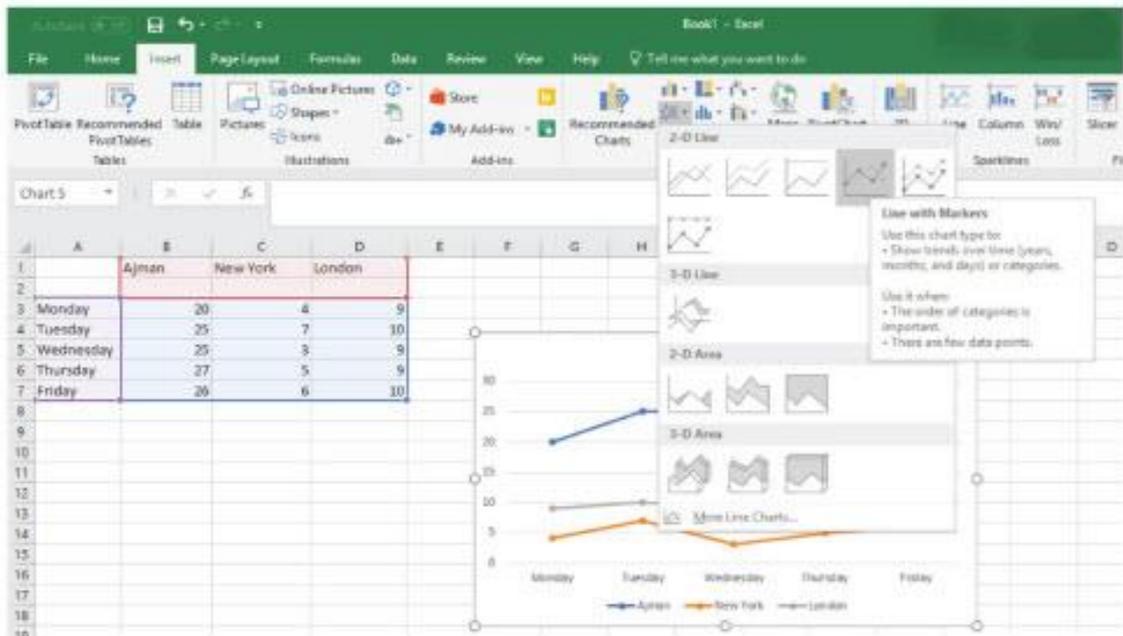
Step 2: Select all the data:



Step 3: The select 'insert' and select line chart from the chart section:



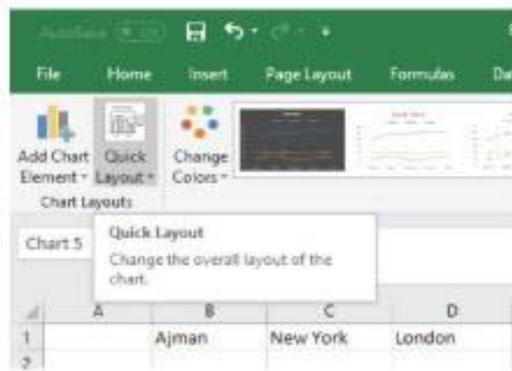
Step 4: You can now select the type of 'line chart' you want: For this example 'Line with Markers' is used.



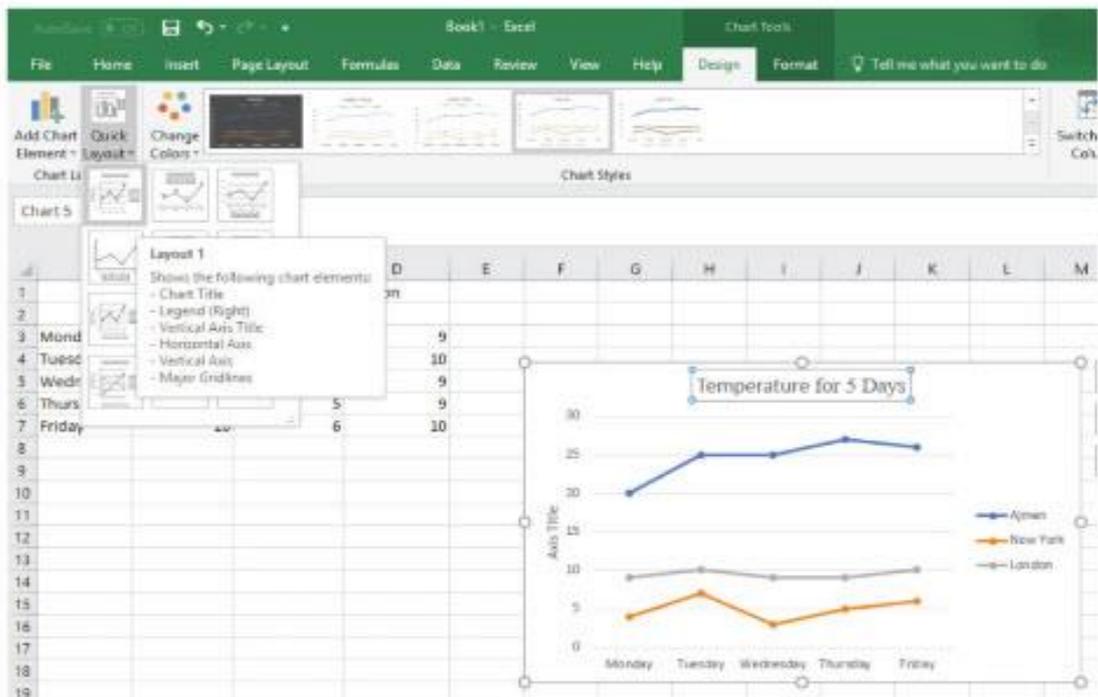
You can then change the 'chart title' to suit the data you are displaying



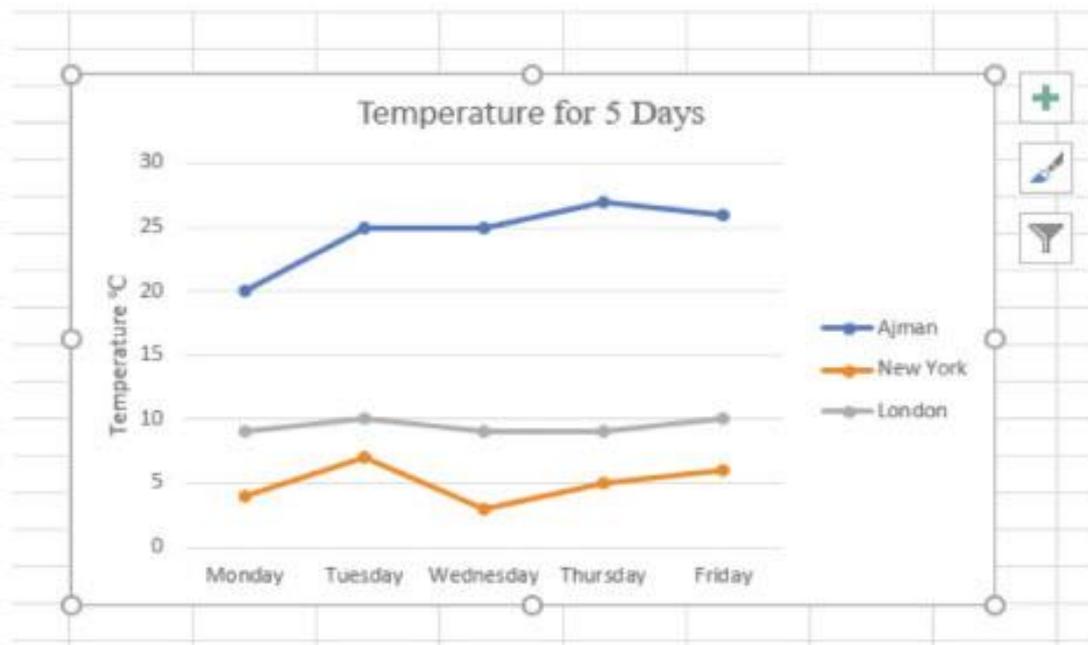
Then select the 'quick layout' tab:



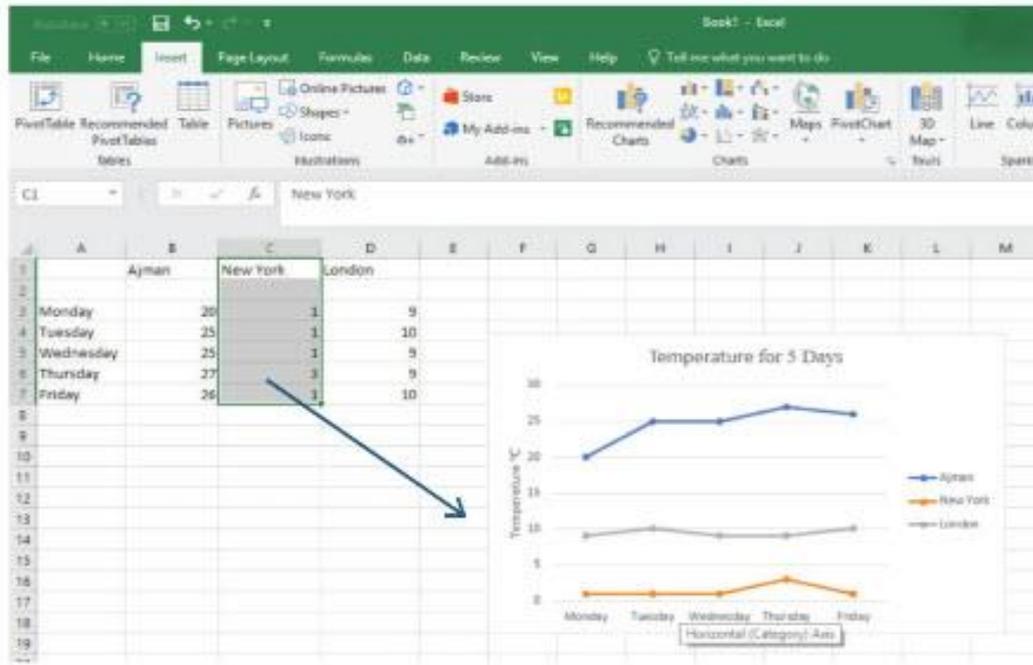
Here you can change the style of the 'line graph'. Select 'Layout 1' for a chart with an 'axis title':



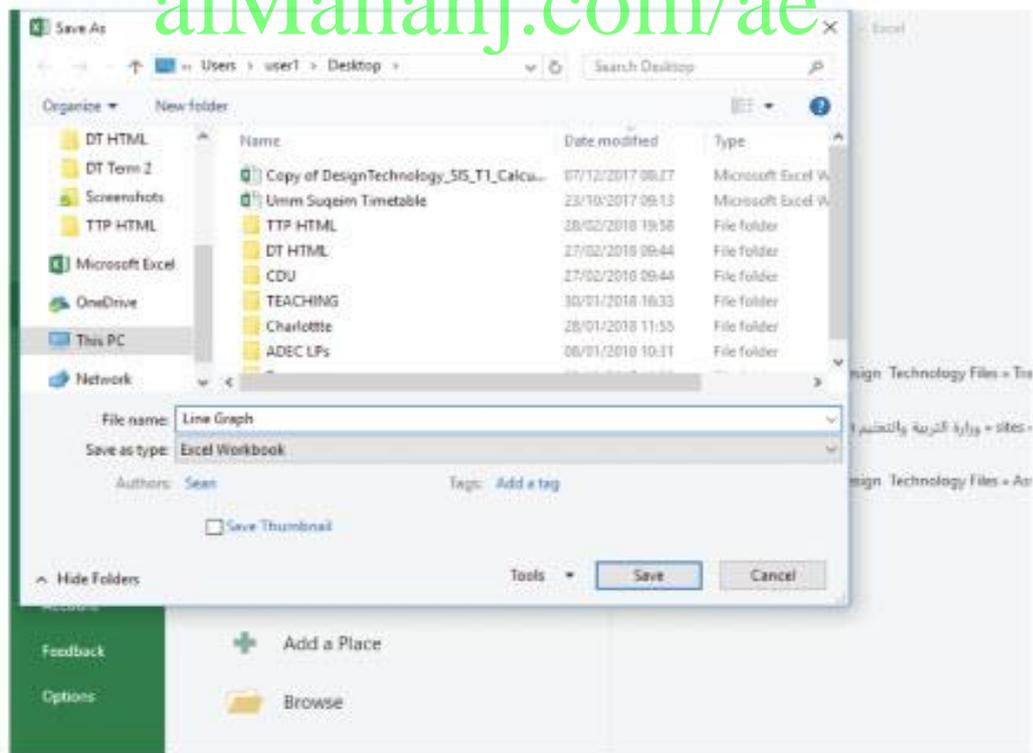
Change the 'axis title' to suit the unit of measurement



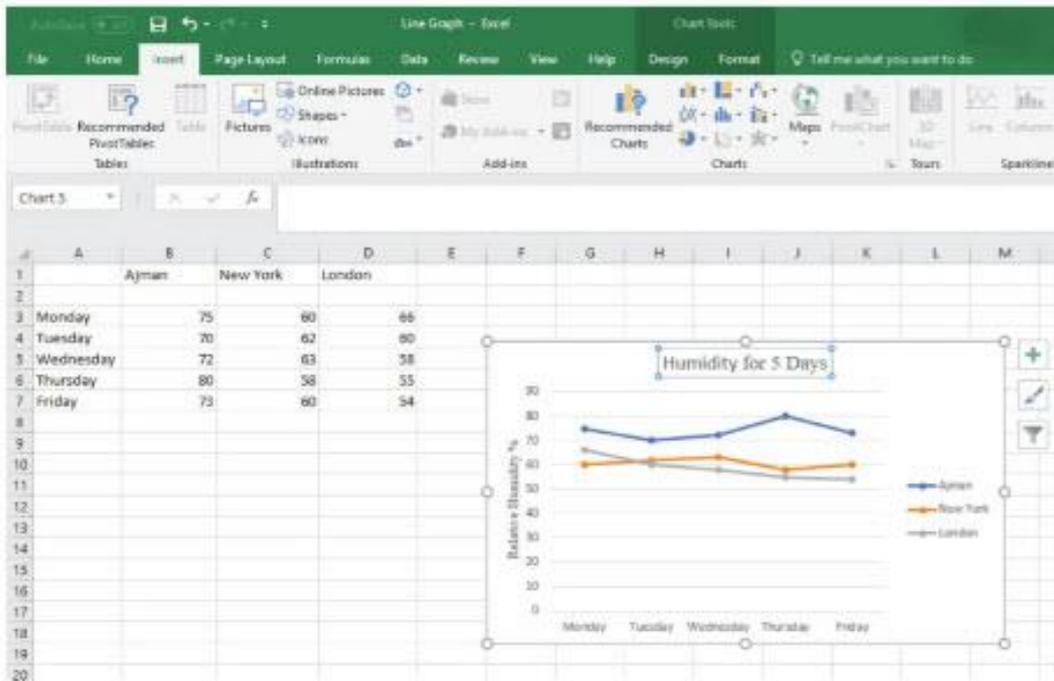
If you change the data in Excel, the 'Line Graph' will change to match:



Select 'file' and then 'save' the line graph:



Use the same steps to change the data to match 'Relative Humidity' and 'Save as'.



Extension:

The same process can be used to collect all types of data:

You can record the 'data' and use it to create graphs/charts in Excel.

Feel free to explore with different units of 'data' and create new types of graphs/charts in Excel.

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