Year 10 – Cambridge National IT - Mindmap

You must be able to understand the purpose and use the content of different pre-production documents

Branch: A line that joins a node to a sub-node, or a central idea to a node.

Node: A point in the mind map that shows some information or idea.

Linking of thoughts and ideas

A branch

Visually show requirements and solutions

Mind Map Purpose

A node

A Central Node (main theme)

Mind maps (spider diagrams) are used to organise thoughts and idea based on a central idea

Mind Map Uses

Show the development of ideas

Show the connections of project ideas

A sub-node

Quickly generate outline ideas

Mind Map Content

Central node with main theme

You can use images in nodes

Text in nodes express key points

Sub-nodes expand on themes

Mind maps can be used as a pre-production document for all creative media projects

Draw this mind map on a sheet of paper to revise.

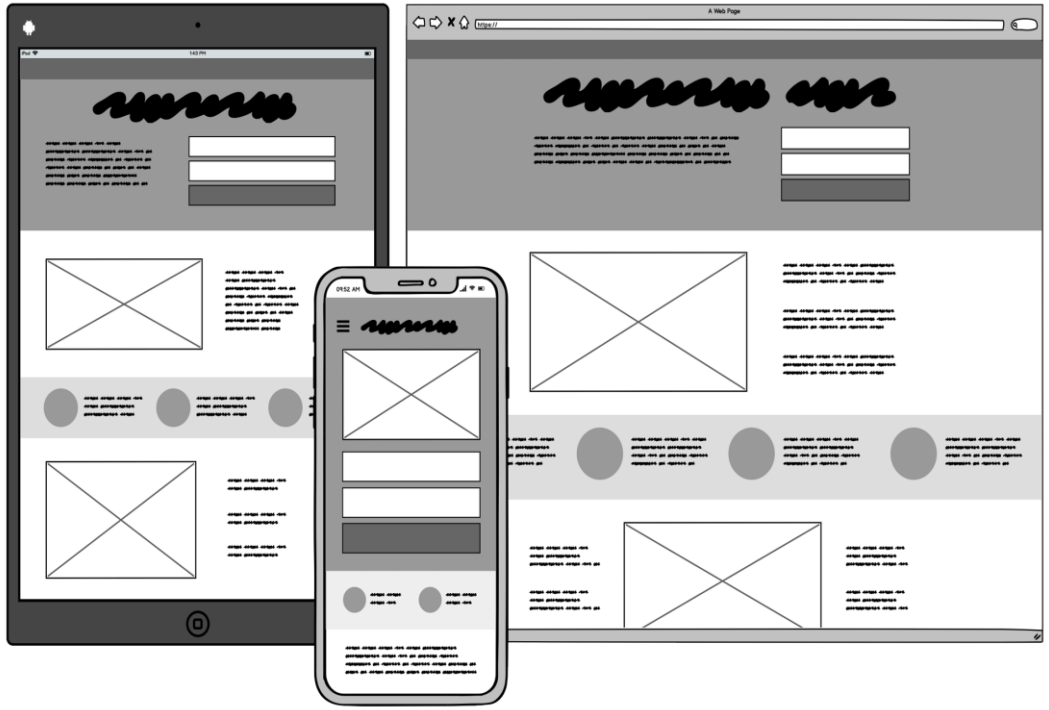
Year 10 – Cambridge National IT - Wireframe

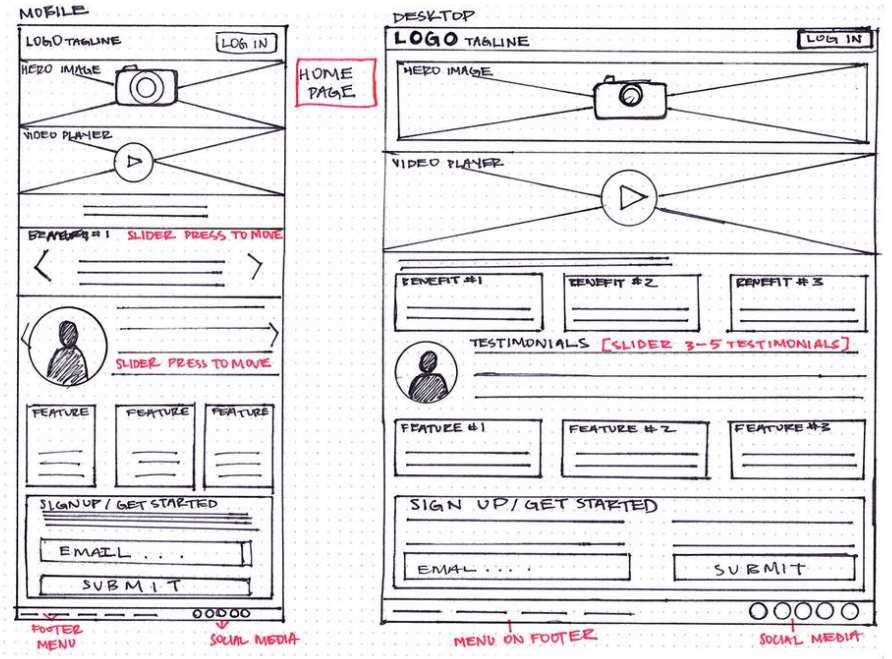
What is a wireframe?

A sketch or a guide before you build an actual form/document

A ‘skeleton graph’ that shows how the contents will be laid out.

Frames with no colours, images or any graphics.





Year 10 – Cambridge National IT – Human Computer Interface

What is HCI?

- **HCI** (human-computer interaction) is the study of how people interact with computers and to what extent computers are or are not developed for successful interaction with human beings.
- As its name implies, HCI consists of three parts: the user, the computer itself, and the ways they work together.

The Goals of HCI

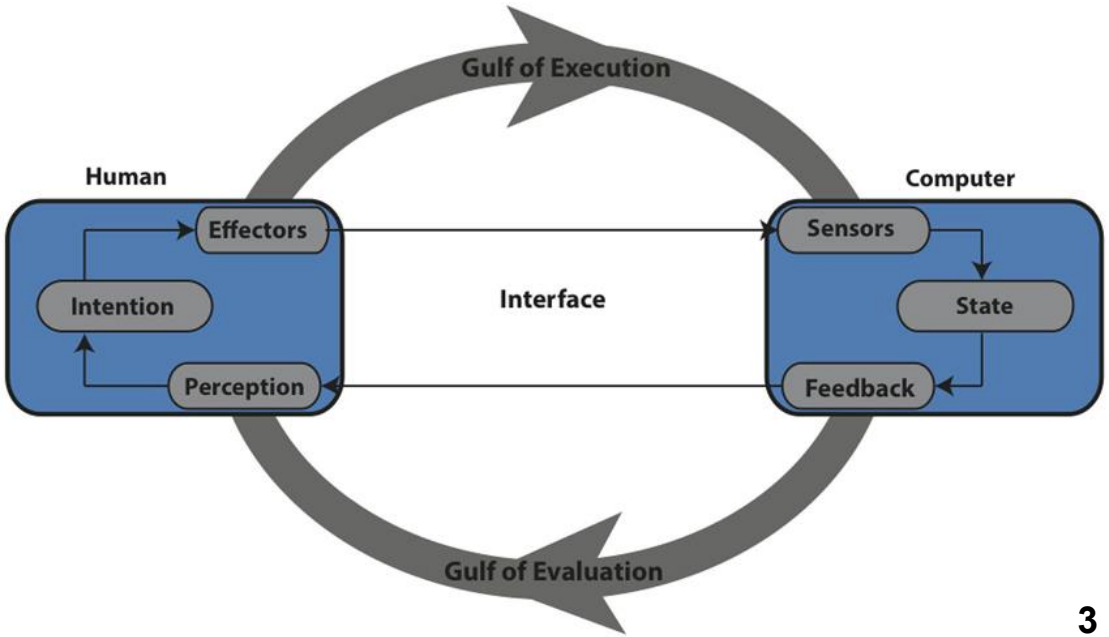
The goals of HCI are to produce usable and safe systems, as well as functional systems. In order o produce computer systems with good usability, developers must attempt to:

•understand the factors that determine how people use technology
•develop tools and techniques to enable building suitable systems
•achieve efficient, effective, and safe interaction
•put people first

Usability of HCI

Usability is one of the key concepts in HCI. It is concerned with making systems easy to learn and use. A usable system is:

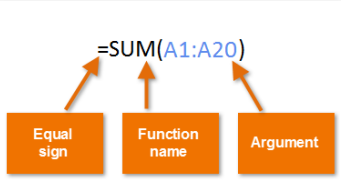
•easy to learn
•easy to remember how to use
•effective to use
•efficient to use
•safe to use
•enjoyable to use



Year 10 – Cambridge National IT - Excel

Type of Functions

There are many types of Functions that can be used in spreadsheets helping to make calculations a lot easier. Some common uses are **MIN** of Minimum, **MAX** for Maximum, **AVG** for Average and **SUM** for Sum total



This is the correct way to structure a function – Remember always start with a =

Absolute Cell Referencing

Absolute Reference in Excel

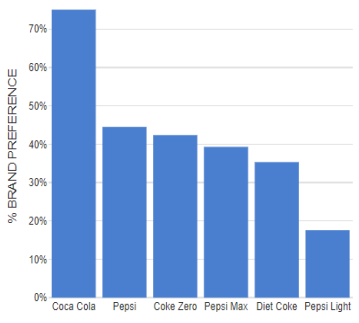
=E35*E33

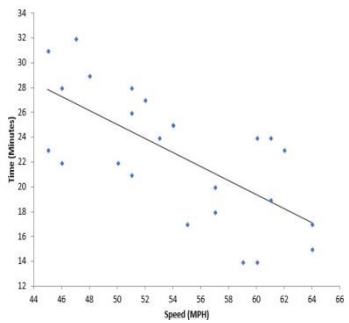
	B	C	D	E	F
			GST	10%	
	Item	Quantity	Price (Rs.)	Total Price	Total Price with GST
	Marie Gold Biscuits	5	40	200	=E35*E33

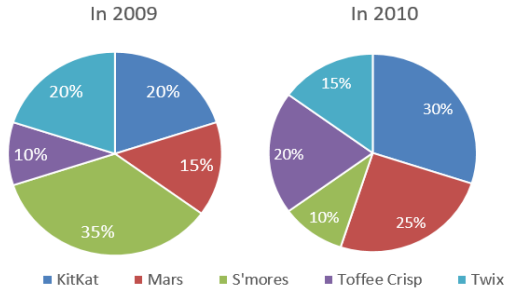
Select a cell which you need to permanently look at and press **F4** on you keyboard to make the absolute cell referencing $ to appear around the selected cells.

Type of Graphs

Bar chart	Visual tool, uses bars easy to see difference, long bar means greater value
Pie chart	size of portion represents the quantity, visually simple to flow, good for summaries
Scatter graph	show relationship between 2 variables, maximum and minimum values are easy to work out







Keywords	Definition
Absolute Cell Referencing	When you want a formula to consistently refer to a particular cell.
Function	is a predefined **formula** that performs calculations in a particular order
Formula	is an expression which calculates the value of a **cell**
Conditional formatting	is a feature which allows you to apply a format to a cell or a range of cells based on certain criteria

IF Statement...

C2 =IF(B2<=50,"Fail","Pass")

	A	B	C	D	E	F
1	Student Name	Scores	Result			
2	BRUCE GEYER	37	Fail			
3	ELIZABETH STERN	73	Pass		Criteria	Result
4	MASATOSHI HENDERSON	62	Pass		Below or Equal to 50	Fail
5	CHRISTINE YOSHIMURA	43	Fail		Above 50	Pass
6	JOHN ADAMSON	35	Fail			
7	IRVING PIANKA	86	Pass			
8	EILEEN HAAS	81	Pass			
9	VINCENZO KWAN	50	Fail			

The **IF function** can perform a logical test and return one value for a TRUE result, and another for a FALSE result.

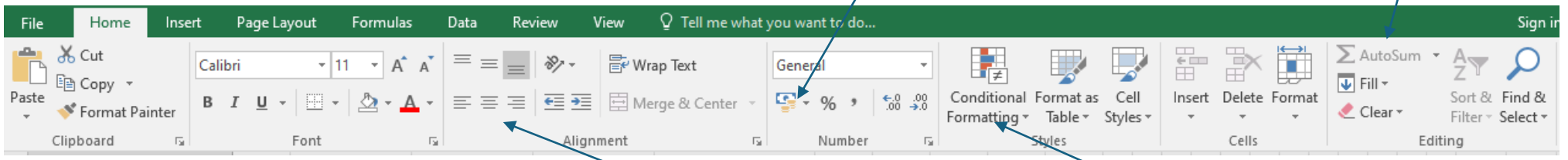
For example, a "Fail" is scores below 50:
=IF(B2<=50,"Fail","Pass")

Year 10 – Cambridge National IT - Excel

Excel Spreadsheet toolbar

AutoSum
Automatically add totals of selected cells

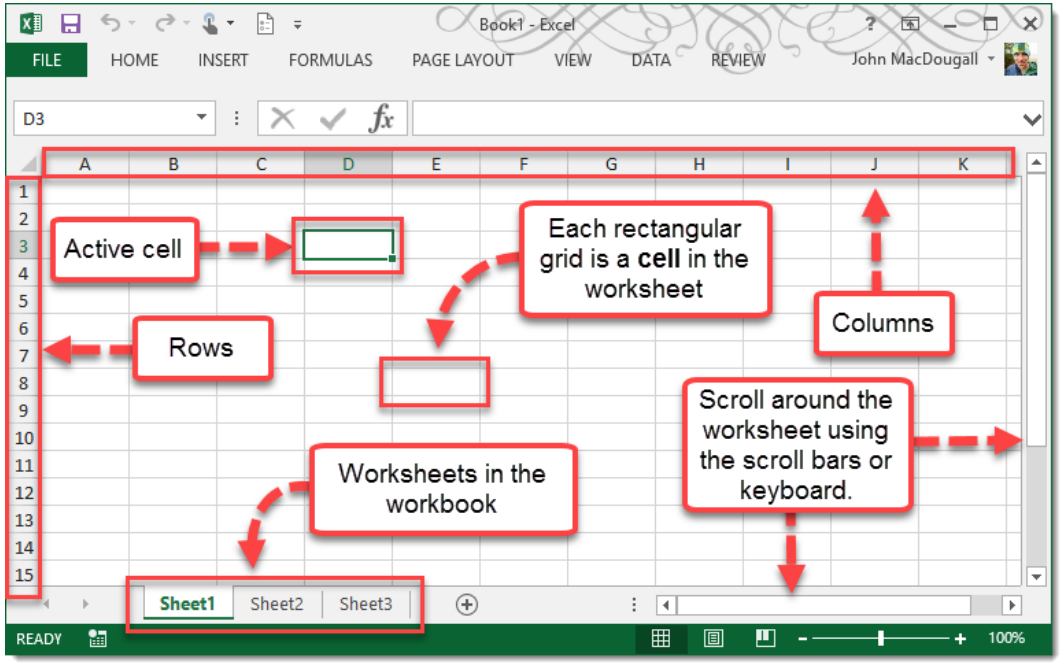
Currency / Accounting format
Used to add currency to the numbers in the cell



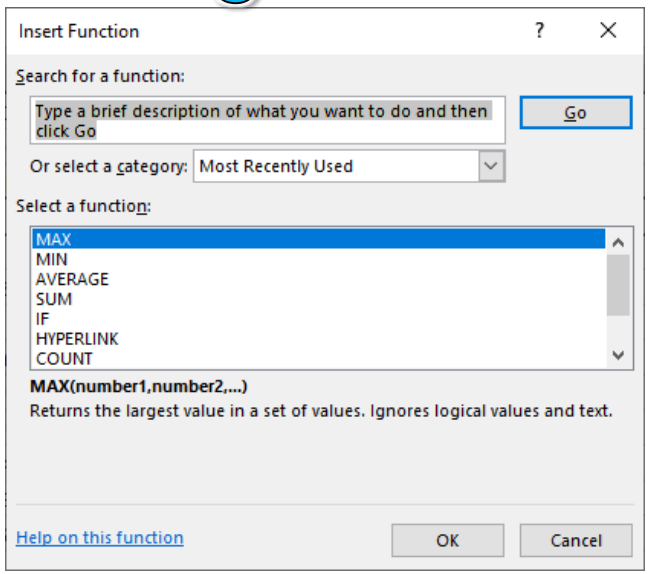
Conditional Formatting
Used to spot trends and patterns in your data

Text Alignment
Helps user align the text within the selected cell/s

Layout of a spreadsheet



Finding a function



is a predefined **formula** that performs calculations using specific values in a particular order

Year 10 – Cambridge National IT - Excel

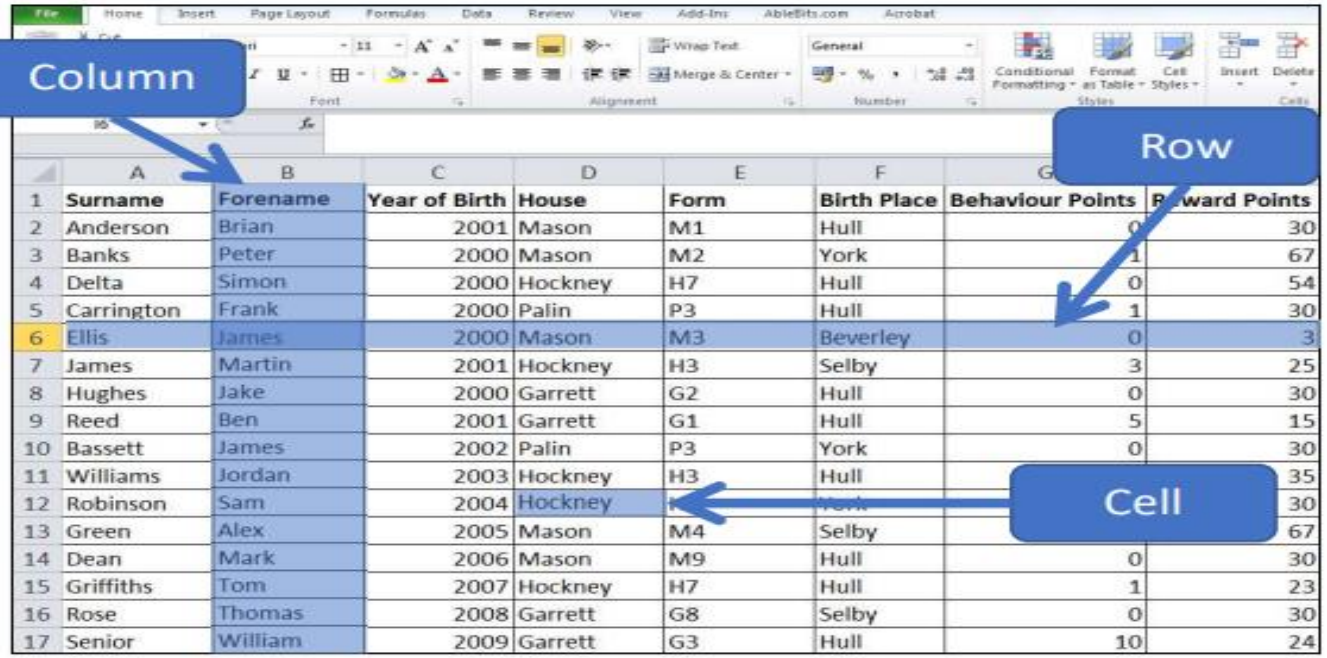
Key Words	
Absolute referencing	A cell reference within a spreadsheet which remains the same when copied (replicated) to another cell.
Alignment.	The way that text is set out. for example. right. left. centred or justified.
AutoSum	This feature will add up the numbers you have entered in your sheet and displays the total in a cell of your choosing.
Cell	A box on a spreadsheet that can contain text numbers or a formulae.
Cell attributes	The way the spreadsheet cell displays data such as numbers or dates.
Cell format	The way the spreadsheet cell looks. for example changing the column width or alignment.
Cell protection	Locking the contents of the cell to prevent them from being changed.
Charting	Drawing a graph from a set of numerical data. usually from a spreadsheet program.
Columns	Vertical parts of a spreadsheet.
Complex formulae	Complicated formulae's used in a spreadsheet.
COUNTA	Count the number of non-blank cells
COUNTBLANK	Count cells that are blank
Data	A general term used for numbers. characters. symbols. graphics and sound which are accepted and processed by a computer system.
Delete	To remove data
File	Information held on backing storage or in memory.
Formulae	A calculation involving one or more cell references in a spreadsheet.
Hard Copy	A printed copy of your work. usually on paper.
Insert	To put Information.
Insert column	To add a column .
Insert row	To add a row.
Integer	A whole number. with no fractional part or decimal point.
Merged Cell	When two or more cells are combined. it's become what is known as a merged cell.

Key Words	
Print file	To obtain hard copy.
Relative Referencing	When a formulae in a spreadsheet is changed relative to its position. during copying or replication.
Replicate	To duplicate
Rows	Horizontal parts of a spreadsheet.
Ribbon	Above the workbook is a section of command tabs called the Ribbon.
Spreadsheet	A program used mainly for dealing with number data. It divides the screen into rows and columns. The cells can contain text. numbers and formulae.
Table	A table is made up of data arranged in rows and columns like a spreadsheet and data is placed in the cells.
Workbook	The workbook refers to an Excel spreadsheet file.
Worksheet	Within the workbook is where you will find documents called worksheets.

Functions	
SUM	adds values in selected cells
MINIMUM(..) or MIN(..)	A function used to find a minimum value in a range.
MAXIMUM(..) or MAX(..)	A function used to find a maximum value in a range.
AVERAGE(..)	A function used to find the average value in a range.
COUNT	counts how many of the selected cells have numbers in them
IF	change the value of a cell if something is true. eg if a customer's total bill is over £100. deduct 10% from their bill.
COUNTIF	adds up cells that meet a certain rule. eg count the number of students that achieved level 6.
VLOOKUP	is an Excel function to lookup and retrieve data from a specific column in table.

Symbols used in formulas			
+	add	*	multiply
-	subtract	/	divide

Year 10 – Cambridge National IT - Excel

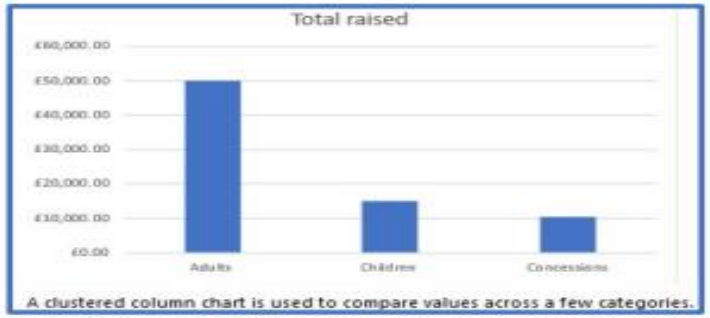


	A	B	C	D	E	F	G	H
1	Surname	Forename	Year of Birth	House	Form	Birth Place	Behaviour Points	Reward Points
2	Anderson	Brian	2001	Mason	M1	Hull	0	30
3	Banks	Peter	2000	Mason	M2	York	1	67
4	Delta	Simon	2000	Hockney	H7	Hull	0	54
5	Carrington	Frank	2000	Palin	P3	Hull	1	30
6	Ellis	James	2000	Mason	M3	Beverley	0	3
7	James	Martin	2001	Hockney	H3	Selby	3	25
8	Hughes	Jake	2000	Garrett	G2	Hull	0	30
9	Reed	Ben	2001	Garrett	G1	Hull	5	15
10	Bassett	James	2002	Palin	P3	York	0	30
11	Williams	Jordan	2003	Hockney	H3	Hull		35
12	Robinson	Sam	2004	Hockney				30
13	Green	Alex	2005	Mason	M4	Selby		67
14	Dean	Mark	2006	Mason	M9	Hull	0	30
15	Griffiths	Tom	2007	Hockney	H7	Hull	1	23
16	Rose	Thomas	2008	Garrett	G8	Selby	0	30
17	Senior	William	2009	Garrett	G3	Hull	10	24

Every cell has a unique name called a Cell Reference.
The cell reference for this cell is D12

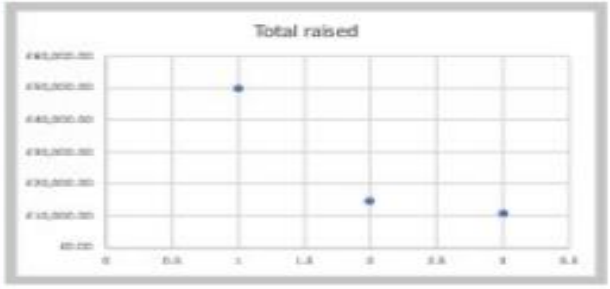
	A	B	C	D	E
1	Surname	Forename	Year of Birth	House	Form
2	Anderson	Brian	2001	Mason	M1
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4	Delta	Simon	2000	Hockney	H7
5	Carrington	Frank	2000	Palin	P3
6	Ellis	James	2000	Mason	M3
7	James	Martin	2001	Hockney	H3
8	Hughes	Jake	2000	Garrett	G2
9	Reed	Ben	2001	Garrett	G1
10	Bassett	James	2002	Palin	P3
11	Williams	Jordan	2003	Hockney	H3
12				Hockney	H9
13	Green	Alex	2005	Mason	M4

Charts and graphs	
line graph	to show a change over time
pie chart	show the individual parts that make up a whole
bar chart	compare things that aren't directly related
scatter graph	look for a pattern or link between two sets of data

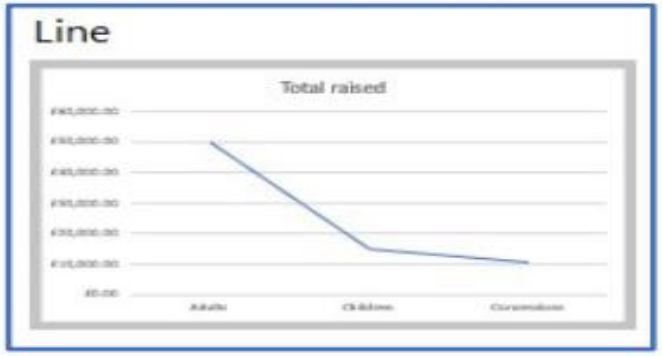


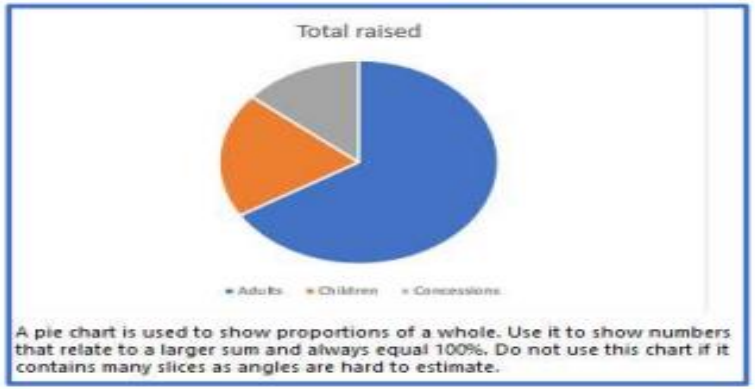
A clustered column chart is used to compare values across a few categories.

Scatter



Line





A pie chart is used to show proportions of a whole. Use it to show numbers that relate to a larger sum and always equal 100%. Do not use this chart if it contains many slices as angles are hard to estimate.