Computing Department Knowledge Organiser: Year 7 Spreadsheets

Why do we use Spreadsheets?

- Spreadsheets are used to store information and data.
- Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns/trends.
- Charts/Graphs can be used to clearly display the information in a spreadsheet
- How to use spreadsheets. Use this QR code to learn and test yourself on the BBC Bitesize website www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1

How spreadsheets work – what software do we need?

- The most popular spreadsheet program is Microsoft Office Excel.
- You can use the online version of Excel for free or download it for free with your Gateacre school log in at: www.office365.com

What can spreadsheets be used for?

- Spreadsheets are used by many businesses around the world. Some examples:
- Budget tracker e.g. working out the costs for a school prom
- Stock tracking of a business such as a market stall selling fruit and vegetables (see example image on the right)
- A teacher may also use it to keep a record of grades.

	A	B	C	D	E
1	Produce	Unit	Number sold	Price	Sales
2	Apples	kg	7	£0.70	£4.90
3	Potatoes	25kg	8	£6.00	£48.00
4	Oranges	kg	6	£0.90	£5.40
5	Carrots	25kg	8	£8.50	£68.00
6	Sprouts	kg	4	£1.40	£5.60
7	Cabbage	kg	6	£0.70	£4.20
8	Onions	kg	9	£0.56	£5.04
9				Total	£141.14

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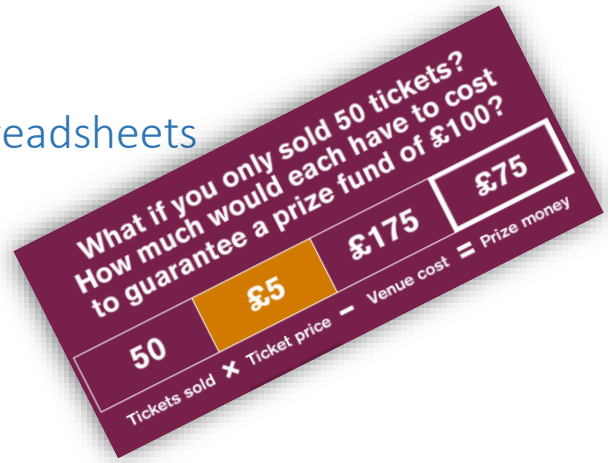

What if?

- Modelling gives you the chance to test certain scenarios out before they happen.
- These are commonly known as 'what if' questions. Look at the examples for ticket sales on the right, you can work out your overall costs and prize fund.
- You can use the BBC Bitesize website to revise and test yourself on 'What if?'
- www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1

Modelling with spreadsheets

- In computing, modelling is used to look at large amounts of data to help with scientific or engineering projects. A computer model is a representation of a real-life system or situation.
- Simple models can be built in a spreadsheet. A spreadsheet model could be used to plan a school prom. To make sure it came in on budget the spending on food, drinks, entertainment, and the price of tickets could be varied.

Spreadsheets Key words

Axis labels on charts	A label for a chart or graph's horizontal or vertical axis that explains what the value relates to.
Cell	An individual spreadsheet box where you enter data.
Cell reference	Names of individual cells (B3 for example).
Column	Cells that go down the spreadsheet page.
Computer model	Predicts and investigates how real-life devices might behave in different situations.
Data	Values, typically letters or numbers.
Formatting cells	The appearance of a document, including the fonts, colours, size and rotation.
Formula	Makes automatic calculations that update when the data does.
Function	Makes more complex calculations.
Row	Cells that go across the spreadsheet page.
Sort / Filter	Sorting data organises it alphabetically or numerically. Filtering data makes it easy for us to find a piece of data.

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Formulas	Functions
Formulas and functions are extremely useful features. They make automatic calculations that update when the data changes.	

• Formulas are usually simple calculations, e.g. adding two or more numbers together.
• They always start with an equals sign (=).
• There are a number of symbols used in formulas or calculations.
• These are the most common ones:
  ○ '+' add
  ○ '-' subtract
  ○ '*' multiply
  ○ '/' divide
	• Functions make more complex calculations.
	• Like formulas, all functions start with an equals sign (=) followed by the function's name, e.g. =SUM, =MIN, =MAX, etc.
	• Simple and regularly used functions include:
	  ○ SUM – adds values in selected cells
	  ○ MIN – finds smallest value
	  ○ MAX – finds largest value
	  ○ AVERAGE – finds the average value
	  ○ COUNT – counts how many of the selected cells have numbers in them

Advanced functions

- IF – change the value of a cell if something is true, e.g. if a customer's total bill is over £100, deduct 10% from their bill.
- COUNTIF – adds up cells that meet a certain rule, e.g. count the number of students that achieved level 6.

Tasks

- **Task 1** - Why do we use Spreadsheets?
- **Task 2** - What software do you need to create a spreadsheet?
- **Task 3** - What can spreadsheets be used for? Give some examples in your answer.
- **Task 4** - Describe what 'what if' means in spreadsheet?
- **Task 5** - What does 'modelling with spreadsheets' mean? Give some examples.
- **Task 6** - What does a formula do? Give some examples of the most common formula used in your answer.
- **Task 7** – What does a function do? Give some examples of different functions in your answer.
- **Task 8** - Identify and describe two advanced functions?