GCSE Mathematics – Unit 3: Graphs, Tables and Charts **Name:……**

<table>
<tr><th>Topic/Skill</th><th>Definition/Tips</th><th>Example</th><th>Your Turn</th></tr>
<tr><td>Frequency Table</td><td>A record of how often each value in a set of data occurs.

They can be made by using a tally.</td><td>4, 4, 5, 5, 6, 6, 6, 6, 7, 7, 7, 7, 7

becomes:

<table><tr><th>Mark</th><th>Tally</th><th>Frequency</th></tr><tr><td>4</td><td>||</td><td>2</td></tr><tr><td>5</td><td>||</td><td>2</td></tr><tr><td>6</td><td>||||</td><td>4</td></tr><tr><td>7</td><td>𝍸</td><td>5</td></tr></table></td><td>3, 3, 3, 3, 4, 4, 4, 5
becomes

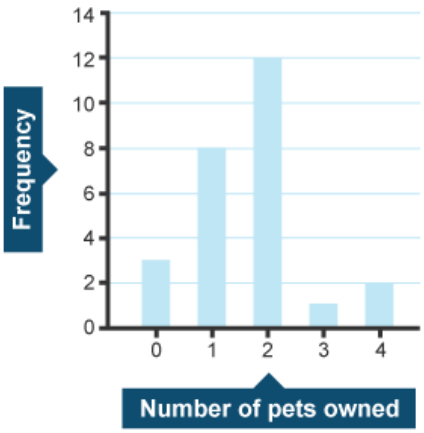
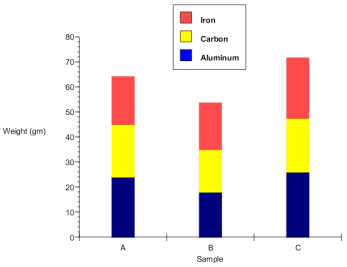
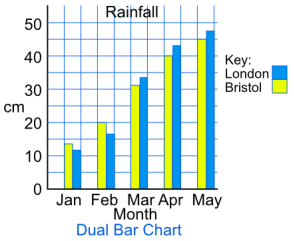
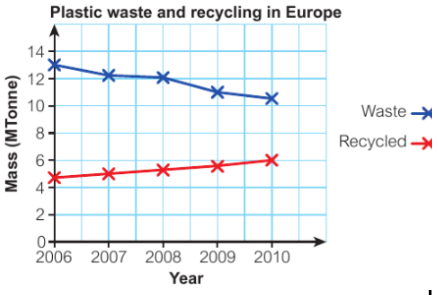
<table><tr><th>Mark</th><th>Tally</th><th>Freq</th></tr><tr><td>3</td><td></td><td></td></tr><tr><td>4</td><td></td><td></td></tr><tr><td>5</td><td></td><td></td></tr></table></td></tr>
<tr><td>Reading a Frequency Table</td><td colspan="2"><table><tr><th>Number of marks</th><th>Tally marks</th><th>Frequency</th></tr><tr><td>1</td><td>𝍸 ||</td><td>7</td></tr><tr><td>2</td><td>𝍸</td><td>5</td></tr><tr><td>3</td><td>𝍸 |</td><td>6</td></tr><tr><td>4</td><td>𝍸</td><td>5</td></tr><tr><td>5</td><td>|||</td><td>3</td></tr><tr><td>Total</td><td></td><td>26</td></tr></table>
Remember there is a difference between the values and the frequency of each value.</td><td>In the table, how many people got 2 marks?

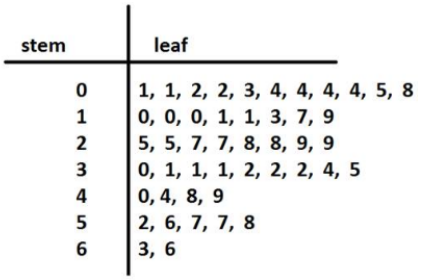
How many people got 5 marks?

How many got 6?

What was the range of marks?</td></tr>
<tr><td>Two Way Tables</td><td>A table that organises data around two categories.

Make sure all the totals add up for all columns and rows.</td><td>Question: Complete the 2 way table below.
<table><tr><th></th><th>Left Handed</th><th>Right Handed</th><th>Total</th></tr><tr><td>Boys</td><td>10</td><td></td><td>58</td></tr><tr><td>Girls</td><td></td><td></td><td></td></tr><tr><td>Total</td><td></td><td>84</td><td>100</td></tr></table>Answer: Step 1, fill out the easy parts (the totals)
<table><tr><th></th><th>Left Handed</th><th>Right Handed</th><th>Total</th></tr><tr><td>Boys</td><td>10</td><td>48</td><td>58</td></tr><tr><td>Girls</td><td></td><td></td><td>42</td></tr><tr><td>Total</td><td>16</td><td>84</td><td>100</td></tr></table>Answer: Step 2, fill out the remaining parts
<table><tr><th></th><th>Left Handed</th><th>Right Handed</th><th>Total</th></tr><tr><td>Boys</td><td>10</td><td>48</td><td>58</td></tr><tr><td>Girls</td><td>6</td><td>36</td><td>42</td></tr><tr><td>Total</td><td>16</td><td>84</td><td>100</td></tr></table></td><td><table><tr><th></th><th>Left</th><th>Right</th><th>Total</th></tr><tr><td>Boys</td><td>1</td><td>9</td><td></td></tr><tr><td>Girls</td><td>2</td><td></td><td></td></tr><tr><td>Total</td><td></td><td></td><td>30</td></tr></table>How many boys are there?
How many girls are right handed?</td></tr>
</table>

Bar Chart	Represents data as vertical blocks. → the $x - axis$ shows the **type** of data ↑ the $y - axis$ shows the **frequency** for each type of data Each bar should be the **same width** There should be **gaps** between each bar Remember to **label** each axis.		How many people own 4 pets? What is the most common number of pets?
Types of Bar Chart	**Compound/Composite** Bar Charts show data stacked on top of each other. **Comparative/Dual** Bar Charts show data side by side.	  Dual Bar Chart	
Line Graph	A graph that uses **points connected by straight lines** to show how data changes in values. This can be used for **time series data**, which is a series of data points spaced over uniform time intervals in **time order**.		What year did Europe recycle the most? Can you make a prediction about what is going to happen in a few years time?

Stem and Leaf Diagrams	A table where each data value is split into a "leaf" (usually the last digit) and a "stem" (the other digits). For example "32" is split into "3" (stem) and "2" (leaf).	 | stem	leaf
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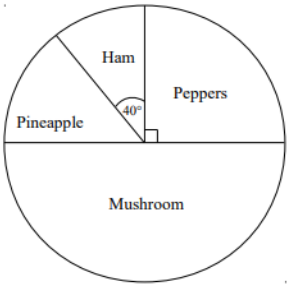
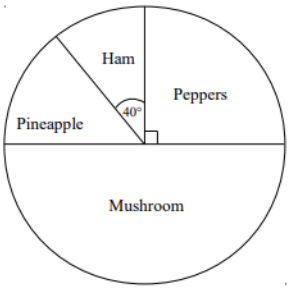
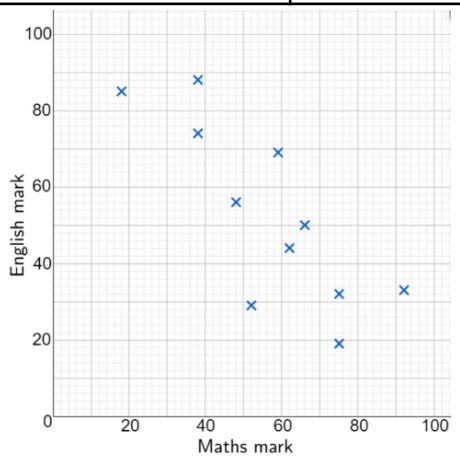
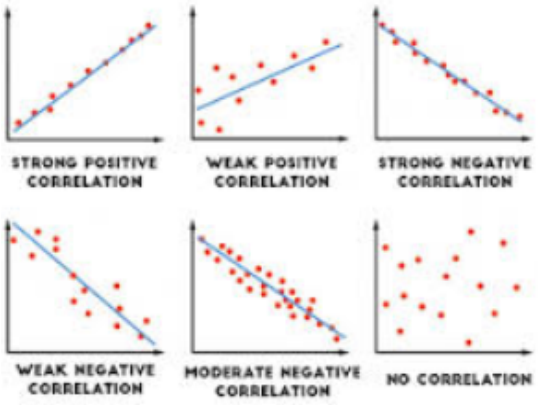
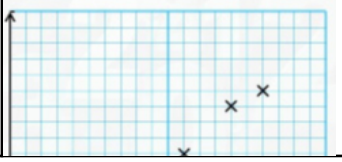
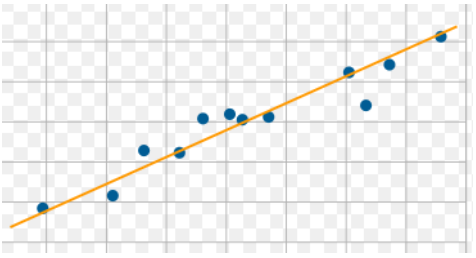
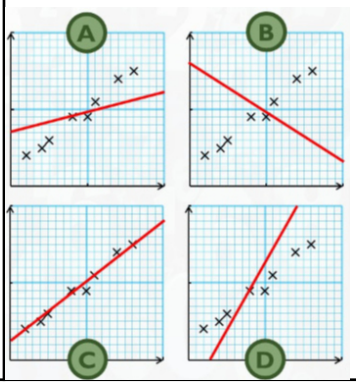
0	1, 1, 2, 2, 3, 4, 4, 4, 4, 5, 8
1	0, 0, 0, 1, 1, 3, 7, 9
2	5, 5, 7, 7, 8, 8, 9, 9
3	0, 1, 1, 1, 2, 2, 2, 4, 5
4	0, 4, 8, 9
5	2, 6, 7, 7, 8
6	3, 6	 Key: 6|3 = 63 years old There always needs to be a key. Because this is another way of writing a list, you can find averages of this data.	19 18 20 25 Key: 1 | 3 5 7 7 2 | 0 6 8 8 8 9 Key: 5|2 means 5.2 cm What was the modal value in this list?
Pie Chart	-Used for showing **how data breaks down into** its constituent **parts**. -Remember to **label** the category that each sector in the pie chart represents.	100 people answered a survey about their favourite pizza topping.  Half of the group chose Mushroom. Half of 100 is 50.	100 people answered a survey about their favourite pizza topping.  How many chose peppers?
Find the angle in a Pie Chart	-When drawing a pie chart, **divide 360° by the total frequency**. This will tell you how many	In a survey of 30 people, each person would be represented by $\frac{1}{30}$ of the full circle.	How many degrees would represent 1 person

	degrees to use for the frequency of each category. Angle = $\frac{Frequency}{Total\ Frequency} \times 360$	$360 \div 30 = 12°$ Each person would get 12° In a survey of 30 people, 12 said their favourite colour is red. $\frac{12}{30} \times 360 = 144°$	in a survey of 40 people? In a survey of 40 people, 12 said their favourite colour is red.
Scatter Graphs	A graph used to plot data measured in two ways. Each point plotted is a single piece of data with two measurements. For example each point plotted here is a single pupil, with their Maths and English scores from a test		
Correlation	When the points plotted on a scatter graph are all very close together, we say there is a strong **correlation** between the two things being measured. This might mean the two things are connected.	  What type of correlation is shown here?	

	If the higher the x value, the higher the y value, then there is a **positive** correlation. If it's the **opposite**, then the correlation is **negative**. The closer the points, the **stronger** the correlation.	
Line of best fit	If a scatter graph has a **strong correlation.** We draw a line of best fit to make a prediction about a new piece of data. The line should follow the points, and there should be the same number of points on each side of the line.	  Which graph shows the most appropriately drawn line of best fit?