STM Knowledge Organiser Year: 9 Subject: Maths

Topic: Representing Data

Core Knov	vledge	1		
Topic/Skill	Definition/Tips	Example		
1. Frequency	A record of how often each value in a set	Number of marks	Tally marks	Frequency
Table	of data occurs .	1	1411 11	1
		2	111	5
		3	1111 I	6
		4	J##	5
		5		3
		Total		26
2. Bar Chart	Represents data as vertical blocks. x - axis shows the type of data 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.	14 12 10 8 6 4 2 0 0		4
3. Types of Bar Chart	Compound/Composite Bar Charts show data stacked on top of each other.	Weight (pro: 40 00 00 00 00 00 00 00 00 00 00 00 00		
	Comparative/Dual Bar Charts show data side by side.	50 40 30 20 10 Jan Fet Dual	Aainfáll Mar Apr May Month Bar Chart	Key: London Bristol
4. Pie Chart	Used for showing how data breaks down			
	 into its constituent parts. When drawing a pie chart, divide 360° by the total frequency. This will tell you how many degrees to use for the frequency of each category. Remember to label the category that each sector in the pie chart represents. 	If there are 40 per each person will of the pie chart	sople in a sube worth 3	urvey, then 60÷40=9°

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5. Pictogram6. Line Graph	 Uses pictures or symbols to show the value of the data. A pictogram must have a key. 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. 	Black Red $= 4 \text{ cars}$ Green $= 4 \text{ cars}$ Others $= 4 \text{ cars}$		
7. Two Way Tables	A table that organises data around two categories. Fill out the information step by step using the information given. Make sure all the totals add up for all columns and rows.	Question: Complete the 2 way table below. Left Handed Right Handed Total Boys 10 58 Gnils - - Total 84 100 Auswer: Step 1, fill out the easy parts (the totals) - Left Handed Right Handed Total Boys 10 48 58 Girls - - - Maswer: Step 2, fill out the remaining parts - - - Answer: Step 2, fill out the remaining parts - - - - Answer: Step 2, fill out the remaining parts - - - - - Boys 10 48 58 - - - - Left Handed Right Handed Total -		
8. Box Plots	The minimum, lower quartile, median, upper quartile and maximum are shown on a box plot. A box plot can be drawn independently or from a cumulative frequency diagram.	Students sit a maths test. The highest score is 19, the lowest score is 8, the median is 14, the lower quartile is 10 and the upper quartile is 17. Draw a box plot to represent this information.		
9. Comparing Box Plots	 Write two sentences. 1. Compare the averages using the medians for two sets of data. 2. Compare the spread of the data using the range or IQR for two sets of data. The <u>smaller</u> the range/IQR, the <u>more consistent</u> the data. You must compare box plots in the context of the problem. 	'On average, students in class A were more successful on the test than class B because their median score was higher.' 'Students in class B were more consistent than class A in their test scores as their IQR was smaller.'		

Links to comparing and interpreting information given in different diagrams, working out averages