

## GEOGRAPHY 'BE THE BEST' – BOOSTER SESSION 4

In this session today, we will be covering the following aspects of your IGCSE Geography Paper:

### 1. Maths skills

#### Working out statistics:

- **Mode, Median** and **mean** are measures of averages.
- **Range** is how spread out the values are.

REMEMBER:

Mode = most

Median = mid

Mean = just the average

Q: Calculate the mean, median, mode and range for the river discharge data shown in the table above.

A:

- The mode is the most common value = 64.
- To find the median, put all the numbers in order and find the middle value:  
64, 64, 90, 95, 142, 159, 184. So the median is 95.
- Mean =  $\frac{\text{total of items}}{\text{number of items}} = \frac{184 + 90 + 159 + 142 + 64 + 64 + 95}{7} = \frac{798}{7} = 114$
- The range is the difference between highest and lowest value, i.e.  $184 - 64 = 120$

When there are two middle numbers, the median is halfway between the two.

The **lower quartile range, interquartile range** and **upper quartile range** can also be worked out.

Q: The number of shoppers in each shop in a village were counted. Find the median and the quartiles of the data set.

A: 2, 3, 6, 6, 7, 9, 13, 14, 17, 22, 22

Lower quartile      Median      Upper quartile

The **interquartile range** is the **difference between the upper quartile and the lower quartile**. It contains the middle **50%** of values.

Q: Find the Interquartile range of the number of shoppers.

A:  $17 - 6 = 11$

#### Working out the percentage of something

As we have already discovered, percentages are ways of dividing the whole into 100 equal parts. The whole can be anything, an amount of money, a length of time - the whole is simply the whole amount of something or 100%. In this example the whole is £500 - the cost of the laptop before discount.

One percent of £500 is therefore  $£500 \div 100$ . That is £5.  $1\% \text{ of } £500 = £5$ .

Once you have worked out what 1% is equal to you can multiply it by the percentage you are looking for, in this case 20%. So  $£5 \times 20 = £100$ . Therefore 20% of £500 = £100. The laptop computer will therefore cost £500 - 20% which is  $£500 - £100 = £400$ .

## Working with percentages:

We calculated a 20% discount in the example above and then subtracted this from the whole to work out how much a new laptop would cost.

As well as taking a percentage away we can also add a percentage to a number. For example: **George is promoted and with that comes a 5% pay-rise. Currently George earns £24,000 a year, how much will he earn after his pay-rise?**

As before, the first thing to do is work out 1% of the whole. The whole in this example is **George's current salary, £24,000. 1% of £24,000 is £240. We then multiply our 1% number by 5, to find 5%.  $£240 \times 5 = £1,200$ . George is going to be £1,200 a year better off after his promotion and his new salary will be  $£24,000 + £1,200 = £25,200$ .**

## Working out area:

Area is a measure of how much space there is inside a shape. You may have to work out the area of land or pond etc. To work out area watch this video:

<http://www.bbc.co.uk/skillswise/topic/areas-of-shapes>

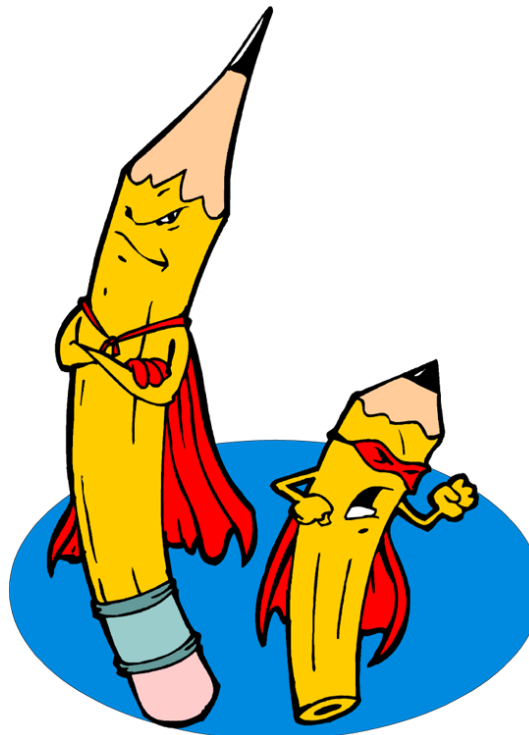
## Unit Conversion:

10 mm = 1 cm

100 cm = 1 meter

1000 meters = 1 km

1.6 km = 1 mile



If you need extra help then please attempt the maths worksheets. These may look familiar as you will have completed these in Maths !!!

NOW APPLY YOUR SKILLS TO THESE EXAM QUESTIONS..

- (ii) Plot the data for Group 4 (Figure 6b in the Resource Booklet) to complete the dispersion diagram below (Figure 6c). Some data has been plotted for you as an example.

(2)

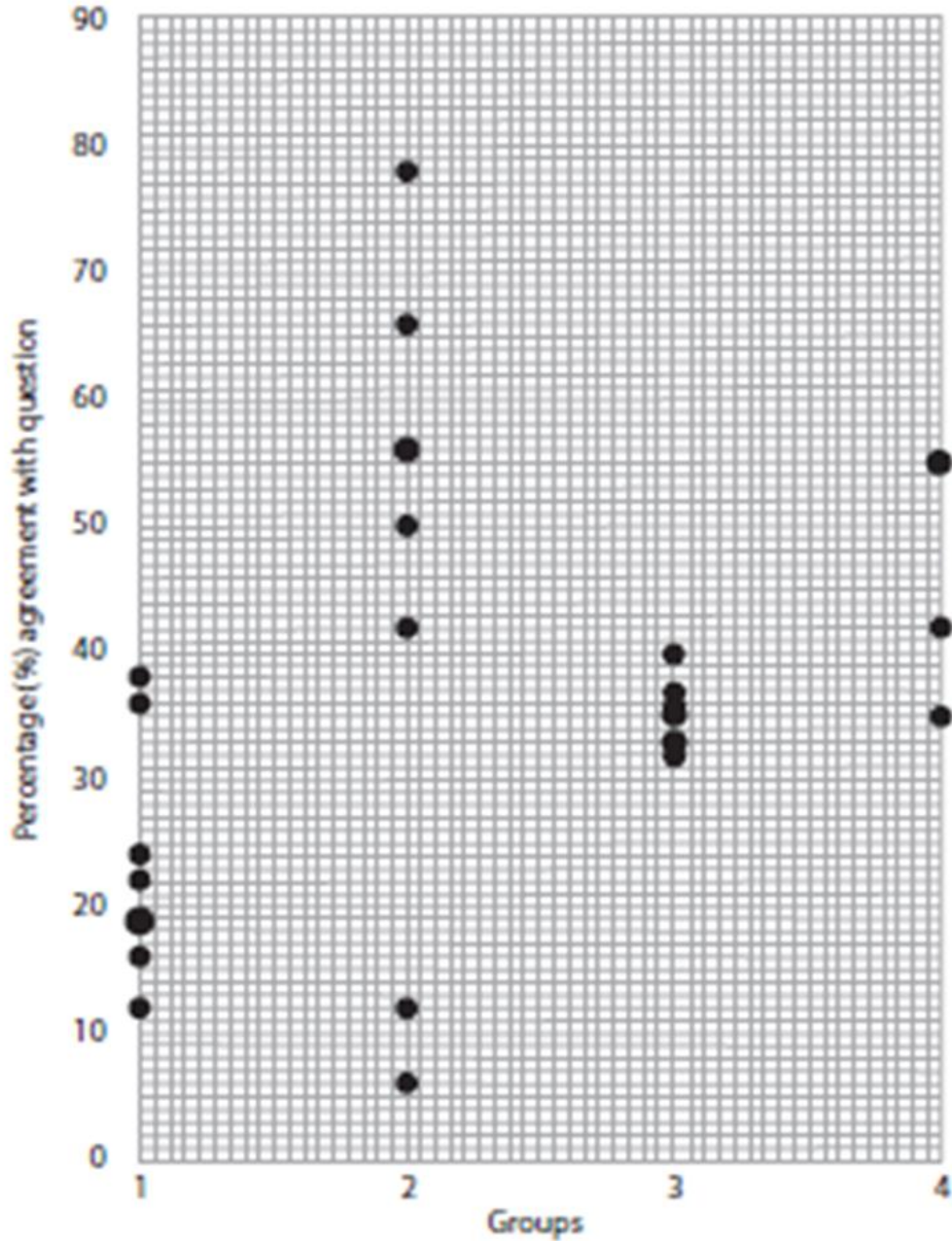


Figure 6c

A dispersion diagram of percentage agreements from a questionnaire

- (ii) Identify the Group in Figure 6c which has the largest range.

(1)

Group \_\_\_\_\_

(iv) Calculate the mean percentage agreement for Group 4.

(2)

Write your answer to 1 decimal place.

Show all your workings.

..... %

-  
**An area of east London where primary fieldwork was undertaken**

Question	Percentage (%) agreement from 4 different groups			
	Group 1	Group 2	Group 3	Group 4
1	38	56	33	49
2	24	66	37	12
3	12	78	40	36
4	16	50	32	51
5	19	42	35	38
6	22	12	36	42
7	36	6	40	55
Mean (%)	23.9	44.3	36.1	7

**Figure 6b**

**Summaries of responses from a questionnaire survey**

**Answers:**

Question number	Answer	Mark
5(b)(iii)	<p style="text-align: center;"><b>A03 (1 mark)</b></p> <ul style="list-style-type: none"> <li>(Group) 4</li> </ul>	<b>(1)</b>

Question number	Answer	Mark
5(b)(iv)	<p style="text-align: center;"><b>A04 (2 marks)</b></p> <p>1<sup>st</sup> mark for the calculation of the correct total = 283 (1)                  2<sup>nd</sup> mark for the average, to 1 DP = 40.4 (%) (1)</p>	<b>(2)</b>

<b>5(b)(ii)</b>	<p><b>A04 (2 marks)</b></p>	<b>(2)</b>
	<ul style="list-style-type: none"> <li>• 2 or more errors – 0 marks</li> <li>• 1 error = 1 mark</li> <li>• No errors = 2 marks</li> </ul>	