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| **H Unit 3: Interpreting and representing data** | **Road Map** |
| In this unit you will learn about number. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 3a Averages and range | Design and use two-way tables for discrete and grouped data;  |  |  |  |
| Use information provided to complete a two-way table;  |  |  |  |
| Sort, classify and tabulate data and discrete or continuous quantitative data;  |  |  |  |
| Calculate mean and range, find median and mode from small data set;  |  |  |  |
| Use a spreadsheet to calculate mean and range, and find median and mode;  |  |  |  |
| Recognise the advantages and disadvantages between measures of average;  |  |  |  |
| Construct and interpret stem and leaf diagrams (including back-to-back diagrams):  |  |  |  |
| find the mode, median, range, as well as the greatest and least values from stem and leaf diagrams, and compare two distributions from stem and leaf diagrams (mode, median, range);  |  |  |  |
| Calculate the mean, mode, median and range from a frequency table (discrete data); |  |  |  |
| Construct and interpret grouped frequency tables for continuous data:  |  |  |  |
| for grouped data, find the interval which contains the median and the modal class;  |  |  |  |
| estimate the mean with grouped data;  |  |  |  |
| understand that the expression ‘estimate’ will be used where appropriate, when finding the mean of grouped data using mid-interval values. |  |  |  |
| 3b Representing and interpreting data | Know which charts to use for different types of data sets; |  |  |  |
| Produce and interpret composite bar charts;  |  |  |  |
| Produce and interpret comparative and dual bar charts; |  |  |  |
| Produce and interpret pie charts:  |  |  |  |
| find the mode and the frequency represented by each sector; |  |  |  |
| compare data from pie charts that represent different-sized samples; |  |  |  |
| Produce and interpret frequency polygons for grouped data: |  |  |  |
| from frequency polygons, read off frequency values, compare distributions, calculate total population, mean, estimate greatest and least possible values (and range); |  |  |  |
| Produce frequency diagrams for grouped discrete data:  |  |  |  |
| read off frequency values, calculate total population, find greatest and least values;  |  |  |  |
| Produce histograms with equal class intervals:  |  |  |  |
| estimate the median from a histogram with equal class width or any other information, such as the number of people in a given interval;  |  |  |  |
| Produce line graphs:  |  |  |  |
| read off frequency values, calculate total population, find greatest and least values;  |  |  |  |
| Construct and interpret time–series graphs, comment on trends; |  |  |  |
| Compare the mean and range of two distributions, or median or mode as appropriate; |  |  |  |
| Recognise simple patterns, characteristics relationships in bar charts, line graphs and frequency polygons.  |  |  |  |
| 3c Scatter graphs | Draw and interpret scatter graphs; |  |  |  |
| Interpret scatter graphs in terms of the relationship between two variables; |  |  |  |
| Draw lines of best fit by eye, understanding what these represent; |  |  |  |
| Identify outliers and ignore them on scatter graphs;  |  |  |  |
| Use a line of best fit, or otherwise, to predict values of a variable given values of the other variable;  |  |  |  |
| Distinguish between positive, negative and zero correlation using lines of best fit, and interpret correlation in terms of the problem;  |  |  |  |
| Understand that correlation does not imply causality, and appreciate that correlation is a measure of the strength of the association between two variables and that zero correlation does not necessarily imply ‘no relationship’ but merely ‘no linear correlation’;  |  |  |  |
| Explain an isolated point on a scatter graph;  |  |  |  |
| Use the line of best fit make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing |  |  |  |

**Links:**

LG1: The processes that you learn in this topic will enable you to present and interpret data in a variety of different ways.

LG2: You will apply your knowledge of statistics to be able to select the most appropriate methods for presenting and interpreting different sets of data, and to interpret charts and graphs.

LG3: You will use your problem-solving skills and mastery of statistics to solve complex Mathematical problems such as problems where you must make comparisons between sets of data presented in different forms.

throughout GCSE Maths.