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| **Unit 3: Interpreting and representing data** | **Year 9 Road Map** |
| **In this unit you will learn about number. The aims are as follows:****LG1: Knowledge LG2: Application LG3: Skills** |
| **S/N** | **Level** | **Learning Goals/Outcomes/Content** | **Video Clips** | R A G |  |  |
| **3a) Presentation and Interpretation of Data** |
| 1 | S | Use suitable data collection techniques (data to be integer and decimal values);  | 63 |  |  |  |
| 2 | S | Design and use data-collection sheets for grouped, discrete and continuous data, use inequalities for grouped data, and introduce ≤ and ≥ signs;  | 63 |  |  |  |
| 3 | S | Interpret and discuss the data; Sort, classify and tabulate data, both discrete and continuous quantitative data, and qualitative data; | 63 |  |  |  |
| 4 | S | Construct tables for time–series data;  | 153 |  |  |  |
| 5 | S | Extract data from lists and tables;  |  |  |  |  |
| 6 | S | Use correct notation for time, 12- and 24-hour clock; | 6a |  |  |  |
| 7 | S | Work out time taken for a journey from a timetable;  | 6b |  |  |  |
| 8 | SCE | Design and use two-way tables for discrete and grouped data;  | 61 |  |  |  |
| 9 | SCE | Use information provided to complete a two-way table; | 61 |  |  |  |
| 10 | S | Plotting coordinates in first quadrant and read graph scales in multiples;  | A1a |  |  |  |
| 11 | S | Produce: pictograms; composite bar charts; dual/comparative bar charts for categorical and ungrouped discrete data; bar-line charts; vertical line charts; line graphs; line graphs for time–series data; histograms with equal class intervals;  | S1 |  |  |  |
| 12 | S | Interpret data shown in pictograms; composite bar charts; dual/comparative bar charts; line graphs; line graphs for time–series data; histograms with equal class intervals; stem and leaf; |  |  |  |  |
| 13 | S | Identify the mode from a bar chart;  | S2a |  |  |  |
| 14 | SC | Recognise simple patterns, characteristics, relationships in bar charts and line graphs.  |  |  |  |  |
| 15 | SCE | Know which charts to use for different types of data sets; |  |  |  |  |
| 16 | C | Produce and interpret composite bar charts;  |  |  |  |  |
| 17 | C | Produce and interpret comparative and dual bar charts; |  |  |  |  |
| 18 | SCE | Construct pie charts for categorical data and discrete/continuous numerical data;  | S9 |  |  |  |
| 19 | SCE | Interpret simple pie charts using simple fractions and percentages; ,  and multiples of 10% sections;  | 128a |  |  |  |
| 20 | CE | From a pie chart:  |  |  |  |  |
| 21 | CE | find the mode;  |  |  |  |  |
| 22 | CE | find the total frequency;  |  |  |  |  |
| 23 | CE | Understand that the frequency represented by corresponding sectors in two pie charts is dependent upon the total populations represented by each of the pie charts. |  |  |  |  |
| 24 | CE | find the mode and the frequency represented by each sector; compare data from pie charts that represent different-sized samples; |  |  |  |  |
| 25 | CE | 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); | 65b |  |  |  |
| 26 | CE | Produce frequency diagrams for grouped discrete data: read off frequency values, calculate total population, find greatest and least values;  | 65a |  |  |  |
| 27 | CE | Produce histograms with equal class intervals:  | 205 |  |  |  |
| 28 | CE | estimate the median from a histogram with equal class width or any other information, such as the number of people in a given interval;  |  |  |  |  |
| 29 | CE | Produce line graphs: read off frequency values, calculate total population, find greatest and least values;  |  |  |  |  |
| 30 | CE | Construct and interpret time–series graphs, comment on trends; | 143 |  |  |  |
| 31 | CE | Recognise simple patterns, characteristics relationships in bar charts, line graphs and frequency polygons.  |  |  |  |  |
| 32 | SCE | Draw scatter graphs;  | S8 |  |  |  |
| 33 | SCE | Interpret points on a scatter graph;  | 129 |  |  |  |
| 34 | SCE | Identify outliers and ignore them on scatter graphs;  |  |  |  |  |
| 35 | CE | Draw the line of best fit on a scatter diagram by eye, and understand what it represents; |  |  |  |  |
| 36 | CE | Use the line of best fit make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing;  |  |  |  |  |
| 37 | CE | Distinguish between positive, negative and no correlation using lines of best fit;  |  |  |  |  |
| 38 | CE | Interpret scatter graphs in terms of the relationship between two variables;  |  |  |  |  |
| 39 | CE | Interpret correlation in terms of the problem;  |  |  |  |  |
| 40 | CE | Understand that correlation does not imply causality;  |  |  |  |  |
| 41 | CE | State how reliable their predictions are, i.e. not reliable if extrapolated. |  |  |  |  |
| 42 | CE | Explain an isolated point on a scatter graph;  |  |  |  |  |
| **3b43) Averages and Range** |
| 43 |  CE | Calculate mean and range, find median and mode from small data set;  | 62 |  |  |  |
| 44 | SCE | Use a spreadsheet to calculate mean and range, and find median and mode;  |  |  |  |  |
| 45 | CE | Recognise the advantages and disadvantages between measures of average;  |  |  |  |  |
| 46 | SCE | 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);  | 128b |  |  |  |
| 47 | SCE | Calculate the mean, mode, median and range from a frequency table (discrete data); | 130a |  |  |  |
| 48 | SCE | Construct and interpret grouped frequency tables for continuous data: for grouped data, find the interval which contains the median and the modal class;  |  |  |  |  |
| 49 | CE | 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. | 130b |  |  |  |
| 50 | CE | Compare the mean and range of two distributions, or median or mode as appropriate; |  |  |  |  |
| Student’s comments and questions |