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| Year 10 – Foundation Tier | **Topic: Unit 7 – Averages and Range**  **Period:** Autumn 1 |
| **Overview of topic:**  Students will build on their knowledge from KS3 in dealing with averages and range, including selecting the appropriate average for a given situation and understanding the use of sampling.   * Statistics * Sampling * Mean * Median * Mode * Range | |
| **Key** **knowledge:**   * Explain why a sample may not be representative of a whole population. * Carry out a statistical investigation of their own and justify how sources of bias have been eliminated. * Show me an example of a situation in which biased data would result. * State the median, mode, mean and range from a small data set. * Extract the averages from a stem and leaf diagram. * Estimate the mean from a table.   **Key vocabulary:**   |  |  | | --- | --- | | Tier 2 | Tier 3 | | * Mean * Mode * Range * Average * Discrete * Continuous * Data * Sample * Population * Frequency * Table * Sort * Estimate * Primary * Secondary * Interval * Survey | * Median * Qualitative * Quantitative * Stem and leaf * Pie chart * Midpoint | | **Key skills:**   * Specify the problem and:   + plan an investigation;   + decide what data to collect and what statistical analysis is needed;   + consider fairness; * Recognise types of data: primary secondary, quantitative and qualitative; * Identify which primary data they need to collect and in what format, including grouped data; * Collect data from a variety of suitable primary and secondary sources; * Understand how sources of data may be biased and explain why a sample may not be representative of a whole population; * Understand sample and population. * Calculate the mean, mode, median and range for discrete data; * Interpret and find a range of averages as follows:   + median, mean and range from a (discrete) frequency table;   + range, modal class, interval containing the median, and estimate of the mean from a grouped data frequency table;   + mode and range from a bar chart;   + median, mode and range from stem and leaf diagrams;   + mean from a bar chart; * Understand that the expression 'estimate' will be used where appropriate, when finding the mean of grouped data using mid-interval values; * Compare the mean, median, mode and range (as appropriate) of two distributions using bar charts, dual bar charts, pictograms and back-to-back stem and leaf; * Recognise the advantages and disadvantages between measures of average. |
| **Co-curricular opportunities:** Statistical and data skills are a vital key skill across multiple other areas of study including Science, Geography, PE and many others | **Key reading skills taught and key texts:**  Clarify – identify key vocabulary in questions and be fluent in understanding the meanings  Question – from a worded question, what Maths is required to be done in order to get a solution?  **Wider Reading Opportunities/Links:** |
| **How can I use this information at home?**   * Conversation starters with your children to discuss their learning * Support your child in carrying out independent research around the topic * Visit your local library (or BorrowBox), museums, or other locations to explore the topic * Promote books/other texts that explore this topic (see reading section) * Help your child to learn the key vocabulary * Encourage practice and consolidation through completion of homework, TTRockStars and using other online learning platforms * Encourage them to practice their mathematical skills in a variety of everyday situations wherever the opportunity arises. | |