|  |  |
| --- | --- |
| 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 meaningsQuestion – 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.
 |