Subject	Year	Month
Mathematics	7	June

Topic:

MEASURING AND PRESENTING DATA — 6 LESSONS

Content (Intent)

Prior Learning

KEY STAGE 2:

- Understand the meaning of 'average' as a typicality (or location)
- Construct and interpret a pictogram
- Know how to tally
- Construct and interpret a line graph and single bar charts
- Understand pie charts
- Know that there are 360° about a point

Future Learning

Y8

- Averages from a table
- Bar charts & histograms
- Pie charts

Objectives

- Calculate and understand the **range** as a measure of spread (or consistency)
- Find the **mode** of set of data
- Find the **median** of a set of data
- Calculate the **mean** of a set of data
- Interpret and construct frequency tables
- Construct and interpret bar charts, vertical line charts and comparative bar charts
- Construct and interpret pie charts
- Apply the knowledge of averages and range on the diagrams and charts

For teaching purposes

Possible Questions

- Show me a set of data with a mean (mode, median, range) of 5.
- Always / Sometimes / Never: The mean is different than the mode for a set of data
- Convince me that a set of data could have more than one mode.
- Kenny says 'If two pie charts have the same section then the amount of data the section represents is the same in each pie chart.' Do you agree with Kenny? Explain your answer.

Misconceptions

- Incorrect use of brackets (on paper and calc) e.g. 2 + 3 + 4 + 5 ÷ 4 = 10.25.
- Range is NOT a type of average
- Median with ODD amount of data versus EVEN amount of data
- may forget to write the data in order before finding median.
- may think that each square on the grid used represents one unit
- may not leave (equal) gaps between the bars of a bar chart

Pedagogical notes (implementation)

FIRST TIME TALKING MEAN, MEDIAN, MODE. **Spend a lesson on each.**

Mean
The word 'average' is often used synonymously with the mean, but it is only one type of average.
use brackets: e.g. (2 + 3 + 4 + 5) ÷ 4 = 14 ÷ 4 = 3.5

Bar chart
Equal gaps, equal widths

How will understanding be assessed & recorded (Impact)

End of Year Assessment in June/July

How can parents help at home?

MathsWatch clips (Qualification KS3)
S1a, S1b, S2a, S2b, S3, S4, S5, S6, S7

Further reading/discussion

Reading / Enrichment

KM: Maths to Infinity: Averages
KM: Maths to Infinity: Averages, Charts and Tables
KM: Stick on the MathsHD4: Averages
NRICH: M, M and M
NRICH: The Wisdom of the Crowd
KM: Constructing pie charts
NRICH: Picturing the World
NRICH: Charting Success

Literacy

Average, Spread, Consistency
Mean, Median, Mode
Range, Maximum, minimum
Measure, Data

Frequency, tally, Table, Frequency table
Bar chart, Bar-line graph, Vertical line chart
Multiple bar chart, comparative bar chat, dual bar chart

Scale, Graph, Axis, axes
Pie chart, Sector, Angle

Numeracy Links

Careers Links

Statistician
Actuary
Data Analyst
Biomatrician
Mudlogger