

Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters

- Four operations.
- Percentages.
- Drawing angles

Retrieval and Suggested Starters

- Practicing the fluency of the above skills.
- Interleaving & problem-solving questions involving the above topics.

KS4 National Curriculum – what students will be practicing

- Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data, and know their appropriate use.
- Includes tables & line graphs for time series data.
- Identify criticisms of data collection methods.
- Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous and grouped data
- Calculate the mean, median, mode & range from a list of data.
- Calculate the mean, median, modal class & range from a table.

Specific Ambitious Knowledge

- Interleaving topics & problem-solving scenarios.
- Interpretations of what the data means.
- Calculating averages from frequency tables.

Key Vocabulary/Literacy Opportunities

- Mean
- Median
- Mode
- Range
- Modal class
- Frequency
- Time series
- Pie chart
- Pictogram

Key Formulae/Knowledge:

[Drawing Bar Charts - Corbettmaths - Bing video](#)

[Drawing Pie Charts - Corbettmaths - Bing video](#)

mean

The mean is the average or norm.

- Add up all of the values to find a total.
- Divide the total by the number of values you added together.

$$2 + 2 + 3 + 5 + 5 + 7 + 8 = 32$$

There are 7 values

Divide the total by 7

$$32 \div 7 = 4.57$$

The mean is 4.57

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Finding the Median

Find the median of

2, 8, 8, 13, 3, 2, 7, 4

Step 1:
Sc fro least to greatest.
rs

2, 2, 3, 4, 7, 8, 8, 13

Step 1:
Sort numbers from least to greatest.

Step 2:
The middle number is the median.

If there are two middle numbers, the median is the mean of the two.

Mode= Most common

Range = The largest – The smallest.

Remember mean = total of all values ÷ total frequency
add an extra column to help you total values, to save writing out the list

Pocket Money Per Wk (x)	Frequency (f)	fx
1	3	3
2	1	2
3	2	6
4	4	16
5	5	25
6	1	6
7	2	14
8	3	24
9	0	0
10	2	20
TOTAL	23	116

$$\text{Mean} = 116 \div 23 = 5.04 \text{ (2dp)}$$

Score (x)	Frequency	CUMULATIVE F
0	6	6
1	9	6 + 9 = 15
2	12	15 + 12 = 27
3	13	40
4	5	45
5	2	47
Total	47	

Median = 2

location = $\frac{n+1}{2} = \frac{47+1}{2} = \frac{48}{2} = 24$ th score

Cross Curricular Links

- Links to science & statistics.
- Real life links to many careers/further education qualifications.

Student' Thinking

Projects/Enrichment/Investigations

- Nrich Problems:

Litov's Mean Value Theorem	How Would You Score It?	Wipeout	For Richer for Poorer
M, M and M	Half a Minute		
Searching for Mean(ing)	Unequal Averages		
Statistical Shorts			
About Average			
Substitution Cipher	Who's the Best?	Tree Tops	
	Olympic Records	What's the Weather Like?	
<ul style="list-style-type: none"> • Shared documents/Maths/Projects/Problem-solving card sorts. 			