House prices

Name _____ Date _____

Houses within a street have the following valuations:

House name	Valuation
The Poplars	£120,000
The Cedars	£125,000
Travellers' Rest	£118,000
The Old Vicarage	£525,000
Twin Oaks	£122,000

1) Work out the mean house price within the street.

2) What is the problem with using the mean value?

3) Would it be better to use the median or the mode?
   Explain your answer below.

4) Work out the range of house prices within the street.

House prices
Answers and curriculum mapping

1) Total £1,010,000 ÷ 5 houses = £202,000.
2) The actual value of four of the properties is far less than the mean value. The high valuation of The Old Vicarage has affected the mean value.
3) There is no mode (no house prices are the same). The median would be the best option as £122,000 is a more appropriate reflection of house prices within the street.
4) Range: £525,000 - £118,000 = £407,000.

GCSE MATHEMATICS: **STATISTICS**		
Number (N), Algebra (A), Ratio, proportion & rates of change (R), Geometry & measures (G), Probability (P) and Statistics (S). P & S have a combined weighting of 15% (in both tiers). Enlarged **bold** font indicates main coverage.		
Foundation (grades 1-5)		Higher (grades 4-9)
S1	Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling	
S2	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 (including tables and line graphs for time series data). Choose suitable statistical diagrams.	
S3	*No Foundation content*	Construct and interpret diagrams for grouped discrete data and continuous data, ie histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use
S4	**Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through:**	
	a) appropriate graphical representation involving discrete, continuous and grouped data. *Students should know & understand the terms: primary data, secondary data, discrete data, continuous data.*	including box plots
	b) appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers).	including quartiles and inter-quartile range
S5	Apply statistics to describe a population	
S6	Use & interpret scatter graphs of bivariate data: recognise correlation & know it does not indicate causation; draw estimated lines of best fit; make predictions; interpolate & extrapolate apparent trends whilst knowing the dangers of so doing	

FUNCTIONAL MATHEMATICS **Coverage and Range statements (indicative only)**	
Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels and the Adult Numeracy standards. ✓ *indicates the main coverage and range skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher.*	
Level 2	
a) understand and use positive and negative numbers of any size in practical contexts	f) find area, perimeter and volume of common shapes
b) carry out calculations with numbers of any size in practical contexts, to a given number of decimal places understand, use and calculate ratio and proportion, including problems involving scale	g) use, convert and calculate using metric and, where appropriate, imperial measures
	h) collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate
c) understand and use equivalences between fractions, decimals and percentages	i) use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate. ✓
d) understand and use simple formulae and equations involving one or two operations	j) use statistical methods to investigate situations ✓
e) recognise and use 2D representations of 3D objects	k) use probability to assess the likelihood of an outcome

References:

Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*
https://www.gov.uk/government/publications/functional-skills-criteria-for-mathematics
DfE (2013), *Mathematics GCSE subject content and assessment objectives.*
https://www.gov.uk/government/publications/gcse-mathematics-subject-content-and-assessment-objectives
Also covers many **adult numeracy curriculum** elements. *http://www.excellencegateway.org.uk/content/etf1075*