Method	What is it?	How do you use it?	Why would you use it?	Advantages	Limitations	Examples
Mean	Measure of central tendency - to work out the average of a set of data	Mean = total value of all observations ÷ total number of observations	To work out the average of a set of data	Simple and quick to do	Can be skewed by extreme values	Average velocity for each site on the river Kym
Median	Measure of central tendency - middle value when all the data is placed in order	Place values in order and identify the middle value. (i.e. in a set of 25 values, the 13th would be the middle value). If there are two middle values take the mean of them.	To find the middle value of a set of data	Not skewed by extreme values Quick and easy to do		
Mode	Measure of central tendency - most frequently occurring value	Identify the value that occurs most often. If there are two modes the data is said to be bi-modal.	To find out the most frequently occurring value	Not skewed by extreme values Quick and easy to do		Depth for each site on the river Kym
Range	Measure of dispersion – difference between the maximum and minimum values		To find out the spread of data	Identifies range of results quickly	Can be skewed by extreme values	
Interquartile range	Measure of dispersion – range of the middle half of the values	Arrange the data is rank order then find the median of all the data (50%), then the median of each half. Difference between the upper quartile (75%) and the lower quartile (25%) is the interquartile range.	Shows spread of data but extreme are omitted and cannot affect the answer.	Not skewed by extreme values		
Standard deviation	Measure of dispersion – spread of figures around the mean	Go through formula Larger standard deviation means a wide spread of values around the mean, smaller standard deviation indicates that the values are grouped close together around the mean.	To show how much the values are spread around the mean			
Mann Whitney U	Testing for difference – measures difference between two data sets	If the smaller value of U is smaller than the critical value then we can	To see if two data sets are significantly different i.e. are they just due to	No assumption that the data sets are normally distributed Can be applied to small data sets, data	Can only be applied to two data sets	

		reject the null hypothesis and say that our results are significantly different (i.e. not just due to chance) and we can explain them using geographical theory.	chance or can we explain the differences using geographical theory.	measured on an ordinal scale and to data sets containing unequal numbers of values		
Spearman's Rank	Testing for association, relationships and correlations	The result will lie between +1 (a perfect direct or positive correlation) and -1 (a perfect negative correlation) with 0 representing no correlation. To test for significance you need to work out the degrees of freedom (n-1) and use the 'r' value and find the significance level using a graph or table.	To see if two data sets are correlated.	Quick and easy method of correlation Proves strength of relationship	Can't be used: - when the two data sets are unequal in number - where there are a limited number of data sets (usually you need at least 8 and preferably more)	
Nearest neighbour analysis	Spatial statistic - a technique measuring point patterns in space	Technique is based on finding the average distance between points and their nearest neighbour. The index R is calculated by dividing the observed mean distance between nearest neighbour points (D_{obs}) by the mean distance expected from a similar number of points distributed randomly in the same area (D_{ran}). Index ranges from 0 where all points form a single cluster to 2.15 which is a perfectly uniform pattern. Values falling between the two extremes suggest a random pattern.	To describe point patterns in a certain area			Rural settlement patterns