The Sutton Academy

Knowledge Rich Curriculum Plan

Year 8 Core – Data and Statistics 2

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
To learn how to draw and interpret pictograms.	• Students will know that a pictogram is a chart that uses pictures to represent data. • Students will know that we use pictograms to represent data in a more interesting and engaging way that makes it more memorable. • Students will know how to complete a pictogram given numerical values. • Students will know how to use the key to find frequency values from a pictogram. • Students will know how to interpret the data within a pictogram to answer simple questions. • Students will know how to draw a key for a pictogram. **Opportunity for challenge:** • Students will know how to complete pictograms based on more complex problems.	Pictogram – a chart that uses pictures to represent data.	• Students need to know how to multiply and divide integers.	Mini-Assessment 13
To learn how to draw stem and leaf diagrams.	• Students will know that a stem and leaf is a diagram that quickly summarizes data while maintaining the individual data points. • Students will know that we use stem and leaf diagrams to group all the data in to categories whilst still showing each individual result. • Students will know to draw stem and leaf diagrams by splitting the tens and units column. The tens column becomes the 'stem' and the units become the 'leaf'. • Students will know that stem and leaf diagrams must be in order to read them properly. • Students will know that stem and leaf diagrams require a key so that the data can be interpreted correctly. • Students will know that they must use the key to interpret the values on a stem and leaf diagram, eg. $3\|7 = 37$ and not just 7. • Students will know how to read values from a stem and leaf diagram. • Students will know how to find how many pieces of data are above or below a certain value. • Students will know how to use fractions to represent how many pieces of data are above or below certain values. **Opportunity for challenge:** • Students will know how to find the averages from a stem and leaf diagram.	Stem and Leaf Diagram – a diagram where each data value is split into a "leaf" (usually the last digit) and a "stem" (the other digits)	• Students need to know how to order numbers. • Students need to know and be able to indicate the tens and units of numbers.	Mini-Assessment 13
To learn how to draw pie charts.	• Students will know that a pie chart is a circular statistical graphic which is divided in to slices to illustrate numerical proportion. • Students will know that we use a pie chart for expressing a part-to-whole relationship in a visual way which makes it easy to compare results. • Students will know how to construct pie charts for categorical data and discrete/continuous numerical data.	Pie Chart – a circular diagram which is divided into slices to illustrate numerical proportion Sector – a pie-shaped part of a circle made of the arc along with its two radii	• Students need to know how to draw angles using a protractor. • Students need to understand proportional reasoning.	Mini-Assessment 13

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
To learn how to interpret pie charts	• Students will know how to interpret simple pie charts using simple fractions and percentages such as a half or 25%. • Students will know how to find the mode from a pie chart. • Students will know how to find the total frequency from a pie chart. • Students will know how to find the frequency represented by each sector. • Students will know that a sector is portion of a circle enclosed by two radii and an arc. • Students will know how to compare angles with values in a real-life context and use this to calculate the values of other angles or find the angles of other values. **Opportunity for challenge:** • Students will know how to understand that the frequency represented in corresponding sectors in two pie charts is dependent upon the total populations represented by each of the pie charts.		• Students need to know how to draw a pie chart. • Students need to know how to find the mode from a list of values. • Students need to know that there are 360° in a full turn. • Students need to understand proportional reasoning.	Mini-Assessment 13
To learn how to investigate and show a relationship between two variables.	• Students will know that a scatter graph is a type of mathematical diagram using coordinates to display values for two variables. • Students will know that we use a scatter graph to show the relationship between two variables once all points are plotted on the graph. The graph shows all the data point as well as any trends visible from the data as a whole. • Students will know how to collect data for comparing two variables such as height and arm span. • Students will know how to write a prediction for their data collection. • Students will know how to plot their data onto a scatter graph. • Students will know how to interpret the relationship between the two variables. • Students will know if the data has positive correlation, negative correlation or no correlation. **This process can be repeated a few times with different variables to show each type of correlation.**	Scatter Graph – a type of mathematical diagram using coordinates to display values for two variables Correlation – a mutual relationship or connection between two or more things.	• Students need to know how to plot coordinates. • Students need to know how to measure with a ruler or tape measure. • Students need to know how to draw axes. • Students need to know how to scale axes.	Mini-Assessment 13
To learn how to draw scatter graphs.	• Students will know how to draw scatter graphs from given data values. • Students will know how to finish a scatter graph that has been partially completed. • Students will know how to draw a line of best fit. • Students will know if the data has positive correlation, negative correlation or no correlation. • Students will know how to describe the relationship between the two variables on a scatter graph.		• Students need to know how to plot and read coordinates. • Students need to know how to draw a straight line. • Students need to understand the relationship between two variables and be able to describe it. • Students need to know how to recognise positive correlation, negative correlation and no correlation.	Mini-Assessment 13
To learn how to interpret scatter graphs.	• Students will know that an outlier is a data point which falls outside the normal range of data. • Students will know how to identify outliers on a scatter graph. • Students will know how to interpret points on a scatter graph. • Students will know how to use their line of best fit to estimate values from a scatter graph. **Opportunity for challenge:** • Students will know how to explain an isolated point on a scatter graph within the real-life scenario.	Outlier – a person or thing differing from all other members of a particular group or set	• Students need to know how to plot a scatter graph. • Students will know how to draw a line of best fit.	Mini-Assessment 13