

Topics in this cycle: Summer 2	Taught:	Year Group: 8
Key knowledge/concepts to be learnt ('Tell me about....')		Websites/blogs/YouTube links and further reading to deepen and consolidate learning
Line of symmetry and reflection: • Lines of symmetry • Reflection The data handling cycle: • Designing a questionnaire • Pictograms • Bar charts • Multiple bar charts • Line charts • Pie charts • Line graphs • Represent and interpret grouped data • Range • Comparing distributions • Identifying misleading graphs Measures of location: • Averages • Find the mean from frequency tables (grouped and ungrouped data) • Compare distributions using averages and range		https://vimeo.com/508430942 https://vimeo.com/559662933 https://vimeo.com/501672753 https://vimeo.com/552332123 https://vimeo.com/556202159 https://vimeo.com/561758867 https://vimeo.com/556198321 https://vimeo.com/561753012 https://vimeo.com/561753918

Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
Primary data	Data collected directly from a population (firsthand)	During assessment week students will be assessed on questions applying their skills on these units, including problem solving tasks, which could link multiple topics. They may also require the use of a calculator.
Population	A set of values or events we want to look at and analyse	
Secondary data	Data that was collected earlier and re-used for a purpose	Family Learning Opportunities Support your child at completing their homework and to boost SparxMaths XP level. Test understanding by asking questions: Line of symmetry and reflection: Lines of symmetry Do all regular polygons have lines of symmetry? Why does a rhombus have two lines of symmetry but a parallelogram none? What do you notice about the other special quadrilaterals? Reflection After a reflection, does the resulting shape always have a line of symmetry? Why or why not? What's the same and what's different about the two parts of a shape following a reflection? What's the area of the original shape? What's the area of the resulting shape? The data handling cycle: Designing a questionnaire Imagine you are completing this questionnaire, which questions would you find difficult to answer? Why?
Questionnaire	A set of questions that are used to gather data (information) from a population	
Pictogram	A chart, in which data is represented with pictures	
Bar chart	A visual representation of data, in form of different heights of bars (vertical rectangles)	
Frequency	The number of something (e.g the number of students in y8)	
Tally	Are used to aid counting and organising data	
Pie chart	A visual representation of a data set, in which categories are shown as sectors in a circle	
Line graph	A graph, in which data points are connected with straight lines to represent a trend	
Proportion	Two values are in proportion if they increase or decrease by the same rate	
Scatter graph	Represents correlation between	
Grouped data	Data that is grouped into classes (groups)	
Discrete data	Numerical data that takes particular values only. i.e. number of apples, shoe sizes	

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Continuous data	Numerical data that can take any values, i.e. height, distance	Why could having multiple choice answers/ranges make a questionnaire easier to answer? Do you think a name should be included on a questionnaire? What influence might this have? • <u>Pictograms</u> Why is it important to include e.g. a key, labels on the axes etc.? Is this discrete or continuous data? Is the data qualitative or quantitative? How are a line chart and bar chart the same? How are they different? • <u>Multiple bar charts</u> When might it be useful to create a multiple bar chart? Why do multiple bar charts need a key? What other questions could you ask about the bar chart? What would you put on each of the axes? How can you decide your scale for the vertical axes? • <u>Line graphs</u> Does the line graph have to start at 0? How can you show that your axis has not started from 0? Is it possible to read off points between those given? Would it be better to use a solid or a dotted line here? What other information/comparisons can you make from the line graph? What other questions could you ask? • <u>Pie charts</u> What are the factors of 360? If you had e.g. 36 people in total, would you use the fraction of 360 or a multiplier to get to 360 in order to find the number of degrees? What about e.g. 35 people? What type of data would you represent in a pie chart? • <u>Represent and interpret grouped data</u>
Qualitative data	Non-numerical data, i.e. eye colour, preferences	
Quantitative data	Numerical data, i.e. number of students, time taken to get to school	

		Why do we leave a space between the bars on a bar chart, but we don't on a frequency diagram? How do we know which group/class a data item belongs to? Why is it helpful to tally data to find the frequencies? • <u>Range</u> How can you work out the range? What does the range tell you about a set of data? Is it an average? Does a large range mean the data is more spread out or less spread out? If the data has a range of 0, what does this tell you about the data? • <u>Comparing distributions</u> What is the same and what is different the charts? Is the data symmetrical or not? How does this compare to the other distribution? What can you, and what can't you, tell about each distribution from the charts? • <u>Identifying misleading graphs</u> Who has made the chart/graph? Why might the data/representation of data be biased? What information should you check on a graph to ensure the data is not misleading? Measures of location: • <u>Averages</u> What's the same and what's different about finding the median of four numbers and the median of five numbers? Why is it helpful to order data when finding averages? Which one is it most helpful for? If you know the mean of a set of numbers, how can you find the total? • <u>Find the mean from frequency tables (grouped and ungrouped data)</u>
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