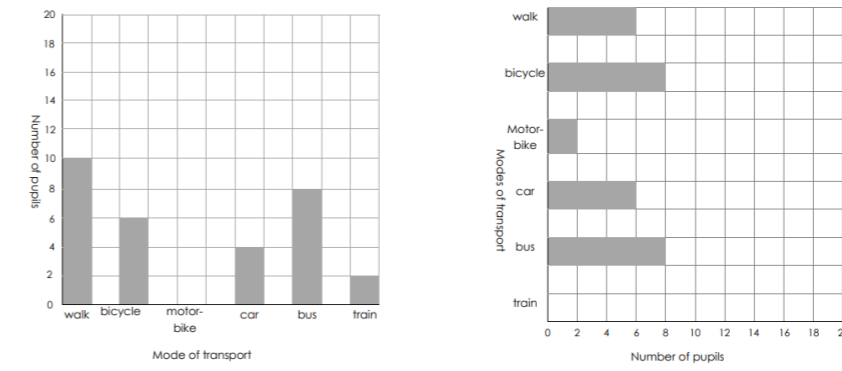
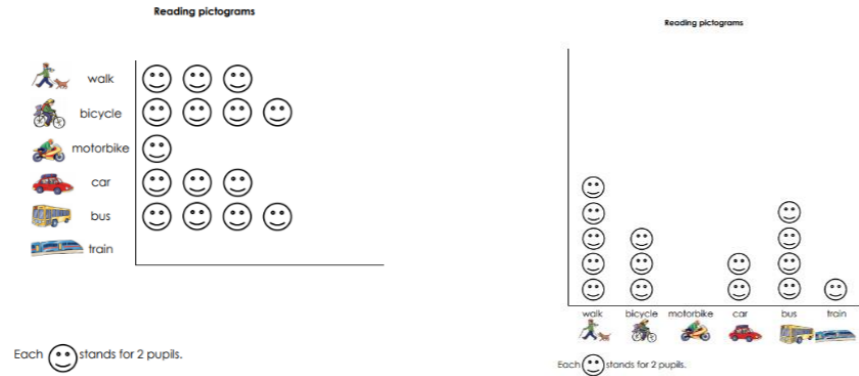


Year 3 Unit 3: Graphs (1 week)

Video: Importance of using manipulatives for pictograms

Which bar? Which Picture? Fewer than?
 When interpreting data pupils are accustomed to answering simple questions such as, 'How many cycled on Tuesday?' or, 'Which was the most / least common mode of transport?' but are less familiar with answering questions involving comparison between two different values on one graph. For example, 'How many more travelled on Tuesday by bus than by car?' or 'How many fewer went on holiday to England than to Spain?' Ensure pupils are exposed to these types of questions throughout the unit.

- Before you start...**
- What prior experience do pupils have with collecting data?
 - How confident are your pupils with representing data in different ways?
 - Are pupils secure with counting in steps of different value, such as 2, 5 and 10?



Video: To scale or not to scale? How to read a bar graph.

Interpreting and creating pictograms

- L1 Read and interpret pictograms
- L2 Construct a pictogram

Pupils begin by exploring pictograms where the symbol represents a value greater than one. Pupils interpret the pictograms using whole symbols before moving on to consider the value of part of a symbol. They then consider the commonality between the numerical values in order to decide on an appropriate scale to use when presenting data as a pictogram.

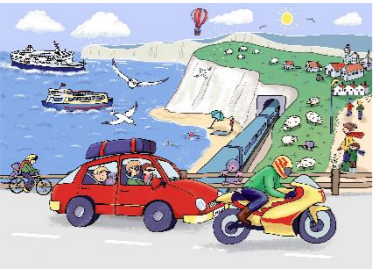
- ? What contexts might you use across the unit to engage the pupils and make their learning meaningful?
- ? How will you make use of opportunities to apply understanding of multiplication when working with pictograms?

Reading and interpreting scaled bar charts

- L3 Read and interpret bar charts

Pupils interpret scaled bar charts where the y-axis increases in increments of two and compare these with scaled bar charts where the increments are in fives and tens. Pupils then move on to explore and interpret bars where values sit between the marked increments on the scale.

- ? What strategies will you model and share with pupils to support them with reading bars that are between intervals?
- ? What questions will you ask to provide opportunities for pupils to gain a depth of understanding of this representation of data?



Context is key

Modes of transport in Dover is used as a context for these five lessons. Consider whether there is a more relevant topic for your pupils and adapt as appropriate. Data or information can be collected anywhere – could content from other subjects provide a more relevant context?

Number of children on the ferry to Dover

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
25	30	55	50	100	70	85

True or false: half the amount of people visited Dover on Saturday than Sunday?

What is the difference between the number of visitors on Wednesday and Sunday?

Collecting and presenting data

- L4 Collect and present data using tallies, tables and graphs
- L5 Interpret and present data in pictograms and scaled bar charts

Pupils use tally charts as a way of recording collected data before choosing the type of graph to present the information, explaining and justifying their choice. Pupils make connections between the values in a data set and their knowledge of multiples to decide on an appropriate scale. They then complete missing information on tallies and bar charts, interpreting the data shown and identifying questions which cannot be answered using the information.

- ? What context might you provide for pupils to collect data independently?
- ? How will you support pupils in distinguishing between questions that can be answered using the information presented and those questions that cannot?

On which day did the least amount of visitors visit? Can you think of a reason for this?

Encourage pupils to look at the information and discuss what they notice. Ask pupils to create stories to give possible reasons or explanations. For example, I think fewer people travelled by car on Tuesday because it may have been sunny. Or no-one travelled by train because they live close enough to the school.

Model it!
 Take time to consider how you will effectively model constructing graphs e.g. by using a visualizer.