



Yeading Junior School

Additional information - Reading, Writing and Maths units - Spring 2

Writing

Year 6 Spring 2

Text Structure, Sentence,

Useful Vocabulary, Word Classes, Punctuation

Year 6

Text Structure	Sentence	Useful Vocabulary	Word Classes	Punctuation
<p>The story is well constructed and raises intrigue.</p> <p>Dialogue is used to move the action on to heighten empathy for central character.</p> <p>Deliberate ambiguity is set up in the mind of the reader until later in the text.</p>	<p>Viewpoint is well controlled and precise, e.g. Maggie stared dejectedly at the floor; her last chance had slipped from her grasp.</p> <p>Modifiers are used to intensify or qualify, e.g. insignificant amount, exceptionally.</p> <p>Sentence length and type varied according to purpose.</p> <p>Fronted adverbials used to clarify writer's position, e.g. As a consequence of his selfish actions...</p> <p>Figurative language used to build up description, e.g. everyone charged like a deer pack under threat.</p> <p>Complex noun phrases used to add detail, e.g. The distinctive sapphire ring is slowly removed from her slender hand.</p> <p>Prepositional phrases used cleverly. e.g. In the messy scramble for the bag.</p>	<p>Year 6 ambitious vocabulary used</p>	<p><u>Noun</u> Expanded noun phrases to convey complicated information concisely.</p> <p><u>Verbs</u> Use modal verbs. Prefixes for verbs; dis, de, mis, over, ise, ify. Convert adjectives into verbs using suffixes; ate, ise, ify.</p> <p><u>Adjectives</u> Choose appropriate adjectives.</p> <p><u>Connectives/conjunctions</u> Use a wide range of connectives.</p> <p><u>Tense</u> Change tense according to features of the genre.</p> <p><u>Adverbs</u> Link ideas across a text using cohesive devices, such as adverbials.</p>	<p>Use a wide range of punctuation throughout the writing.</p>

Year 6 Spring 1

Spelling list

Word list – years 5 and 6

accommodate	embarrass	persuade
accompany	environment	physical
according	equip (–ped, –ment)	prejudice
achieve	especially	privilege
aggressive	exaggerate	profession
amateur	excellent	programme
ancient	existence	pronunciation
apparent	explanation	queue
appreciate	familiar	recognise
attached	foreign	recommend
available	forty	relevant
average	frequently	restaurant
awkward	government	rhyme
bargain	guarantee	rhythm
bruise	harass	sacrifice
category	hindrance	secretary
cemetery	identity	shoulder
committee	immediate(ly)	signature
communicate	individual	sincere(ly)
community	interfere	soldier
competition	interrupt	stomach
conscience*	language	sufficient
conscious*	leisure	suggest
controversy	lightning	symbol
convenience	marvellous	system
correspond	mischievous	temperature
criticise (critic + ise)	muscle	thorough
curiosity	necessary	twelfth
definite	neighbour	variety
desperate	nuisance	vegetable
determined	occupy	vehicle
develop	occur	yacht
dictionary	opportunity	
disastrous	parliament	

Maths

Unit journey

Statistics

Year 6 Unit 9: Statistics

Before you start...

- What prior experience have pupils had in interpreting data in Maths Meetings and other curriculum subjects?
- Where could you make links to other subjects (science, geography) and adapt questions to make them more meaningful?
- What prior experience have pupils had in collecting data? Many of the questions in this unit feature data that has been collected from simple surveys.

Understanding the mean average

This [article](#) from Cambridge Mathematics summarises research into teaching the mean.

The counters have been distributed **unequally**.

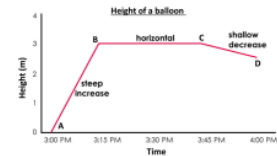


The counters have been distributed **equally**.



Where do we see the mean? What does it show? Why is it useful?

When the line is **shallower**, the height is changing more slowly.



When the line is **horizontal**, the height is not changing.

Using the mean average

L1 Calculate the mean

Pupils develop an understanding of the mean. They consider how to calculate the mean in different contexts before finding a data set from a given mean.

The Task Bank for Year 5 Unit 14 contains further additional problems related to the mean which you may wish to make use of.

How will you expose pupils to other averages not included in the Y6 curriculum?

Representing data in pie charts

L4 Interpret and compare pie charts
L5 Draw pie charts

Pupils learn about data represented in pie charts, making connections between fractions, percentages and angles within a full turn. In lesson 4, they explore features of pie charts and practice reading data from pie charts. Take time to allow pupils to interpret without numbers attached to develop a sense of the relative size of sectors. Pupils apply their understanding when comparing pie charts. Take time to focus attention on the whole (the total data set) when making comparisons. Through comparison of a range of pie charts, pupils make connections between the whole and the proportion of the data set indicated.

How will you ensure pupils make connections between this representation of data and fractions and percentage?

In lesson 5 pupils complete pie charts that have some data missing and where they need to add sector lines with given interval markings. Highlight where given data means that pupils may need to find other equivalent fractions to plot data in partial sectors, for example splitting a pie chart divided into eight equal parts into sixteenths.

Ensure that pupils are comfortable expressing data as fractions of a whole and can find equivalent fractions.

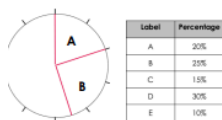
Representing data in line graphs

L2 Interpret line graphs
L3 Draw line graphs

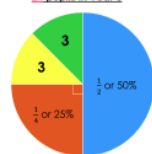
Pupils should be familiar with data represented in line graphs. Lesson 2 explores how line graphs can be used to represent real life scenarios, like a balloon rising or a trip to the shops. Lesson 3 focuses on reading data accurately from line graphs. Ensure modelling includes deliberate errors in reading line graphs to help support pupils' strategies with this. They consider graphs showing cumulative data as well as applying calculation strategies when interpreting. In lesson 3, pupils sketch their own graphs to show simple maths stories and practice reading different scales for axes before completing partially completed graphs. Data is provided but you may wish to change the context to suit.

How will you model reading a line graph so all pupils understand the necessary steps and plotting points accurately?

Pie chart showing favourite colours of 24 pupils in Year 6



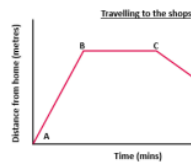
Completing pie charts with partial sectors



The yellow and green sectors are equal in size. Together they add to $\frac{1}{2}$ of the pie chart.

The orange sector is equal to $\frac{1}{4}$ of the pie chart.

$\frac{1}{4}$ is equal to 25%.



From A to B: Ahmed is driving at a constant speed.

From B to C: Ahmed parks and goes shopping.

From C to D: Ahmed drives home, but there's heavy traffic.

Sketching simple maths stories

Ratio and Proportion

Year 6 Unit 10: Ratio and Proportion (2 weeks)

Before you start...

- How secure are pupils in using fractions and percentages with part-whole language?
- How familiar are pupils with representing a range of problems pictorially, such as with bar models and double number lines?



Teaching ratio and proportion – Cambridge Maths

- Developing concepts of ratio & proportional reasoning Cambridge Maths highlight what research suggests about developing ratio and proportion.
- Avoid premature **shortcut rules**, limited to memorising procedures (see L2&3)
 - Provide opportunities for pupils to **explore and represent the problem** in their own way, with manipulatives and diagrams before introducing symbols or formal methods (see L2&3)
 - Directly address the common misconception of applying **additive strategies** to ratio and proportion problems (see L1)
 - Using models** such as pictures, ratio tables, double number lines is recommended (see L1 onwards)

Ratio or proportion?

Orange	Water	Water	Water	Water
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Ratio 1:4 (part-part comparison): "1 part orange for every 4 parts water"

Proportion $\frac{1}{5}$ (part-whole comparison): "1 part in every 5 parts is orange"

This NRICH article explores what's the same and what's different about ratio and proportion.

Additive and multiplicative relationships

L1 Explore additive and multiplicative relationships

As applying additive strategies to ratio and proportion problems is such a common misconception, the unit starts by focusing on pupils' understanding that numbers can have both an additive relationship and a multiplicative relationship. By discerning between the two, pupils will be in a stronger position to apply their multiplicative understanding when looking at ratio and proportion problems throughout the unit.

How can you use the double number line to show addition and multiplication patterns 'going up' the number line as well as subtraction and division patterns 'going down' the number line?

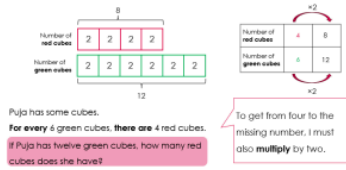
Introducing ratio and proportion

- L2 Use proportional language
- L3 Use ratio language
- L4 Use the ratio symbol
- L5 Describe situations using proportion and ratio

In lessons 2 & 3, pupils are provided with opportunities to explore and represent proportion and ratio situations with manipulatives and diagrams. Proportion is explored first, as pupils can apply their prior part-whole knowledge and fractional understanding. There's plenty of practice of using proportional and ratio language before formally introducing the ratio symbol in lesson 4. Double number lines, used in lesson 1, are used here to make sense of the ratio symbol and to see how the multiplicative relationship remains constant. Lesson 5 gives pupils the opportunity to bring all their learning together so far, and to describe a situation using both ratio and proportion.

How will you encourage pupils to make sense of the ratio and proportion situations by creating their own models and diagrams? What opportunities will pupils have to compare and contrast their representations?

As this is pupils' first introduction to ratio and proportion, the unit focuses on securing pupils' understanding related to number. To further understanding related to shape (e.g. drawing scaled shapes beyond squares and making maps) you may wish time within consolidation weeks.



Solving ratio and proportion problems related to shape

L10 Solve problems involving scale factors

Pupils apply their understanding of ratio and proportion to shape problems. They identify similar shapes and explore enlarging and reducing shapes by different scale factors.

What examples and non-examples can you present to pupils so that they understand the meaning of similar shapes?

Solving ratio and proportion problems related to number

- L6 Interpret ratio problems (1)
- L7 Interpret ratio problems (2)
- L8 Interpret proportion problems
- L9 Interpret recipe problems

Pupils apply their understanding of ratio and proportion to a range of problem-solving contexts – they deconstruct word problems to build their understanding of various question structures. They use visual representations, such as bar models and ratio tables, to identify the known and unknown parts in word problems and examine the effect of changing information and values within a question.

What known mental and formal multiplicative strategies could your pupils apply in these lessons?



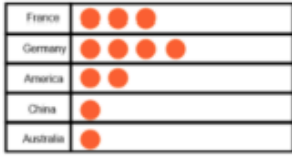

The proportion that are yellow cubes is $\frac{6}{15}$.

Six parts in every fifteen parts are yellow.



For every 3 blue cubes, there are 6 red cubes.

Key vocabulary

Year 6	Definition	Example
Pie chart	A representation of a set of data where each segment represents one group in proportion to the whole.	<p>Countries people visited</p>  <p>Each ● stands for 10 people</p>
Tally	A form of counting. Each tally is a vertical mark. After the fourth vertical mark, a fifth	Four children have black hair; I will record this as four tallies.
Bar graph	A representation of data in which the frequencies are represented by the height or length of the bars.	This bar graph shows us the preferred colours of the pupils in our Year 3 class.
Pie chart	A representation of a set of data where each segment represents one group in proportion to the whole.	<p>Nationality of Astronauts on Board ISS January 2017</p>  <p>■ Russia ■ USA ■ France</p>

Timetables

This half term year 6 are revising all their times tables

	Year 3	Year 4	Year 5	Year 6
Autumn 1	1 & 2	9	Mixed times and divide	Primes
Autumn 2	5 & 10	7		Square
Spring 1	3	(9) 12		Cubes
Spring 2	6	11		Mixed
Summer 1	4	Mixed		
Summer 2	8			