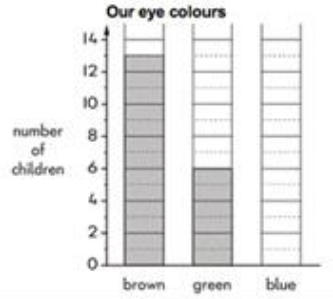
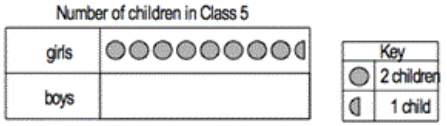
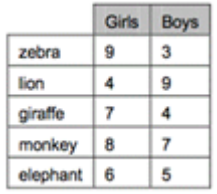
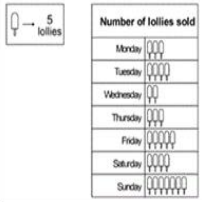
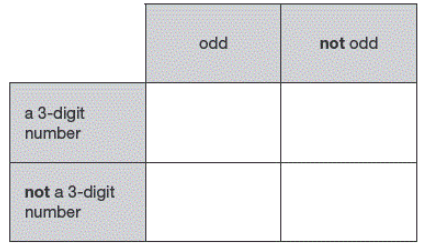
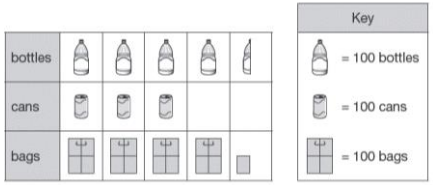
Unit Overview and Guidance

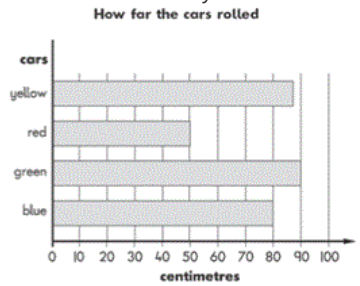
- The exemplification has been taken from the NCETM online 'Resource Toolkit', with additions in order to ensure full coverage.
- Links to the White Rose Maths hubs schemes of work (with questions categorised into the three aims of the national curriculum i.e. fluency, problem solving and reasoning) are hyperlinked to each of the objectives. Many thanks go to the White Rose Maths hub for permission to include their resources.
- The NCETM reasoning questions have also been incorporated into each unit and are identified in pale purple boxes underneath the group of the most relevant objectives.
- The 'big Ideas' sections from the NCETM 'Teaching for Mastery' documents have been included at the start of each unit. Hyperlinks to the full NCETM 'Teaching for Mastery' documents have also been included for easy reference.
- Hyperlinks to NRich activities have also been added to this version. These are found by clicking on the blue buttons like this one  at the bottom of relevant objective.
- Some additional content has been added in order to support mixed-aged planning. Any additional content is in *italics*. Occasionally ~~strikethrough~~ has been used to identify when an objective has been altered and this is primarily where an objective has been split between two units.
- Each unit is sub-divided into sections for ease of planning. Sub-categories in this unit are;
    1. Presenting and interpreting data
    2. Solving problems

	Reception	Yr 1	Yr 2	Yr 3
NCETM Teaching for Mastery Questions, tasks and activities to support assessment	**The Big Ideas (Optional learning)** Statistics does not appear explicitly in reception. Additions included here focus around collecting and counting data	**The Big Ideas (optional learning)** Statistics does not appear explicitly in the Year 1 curriculum. Additions included here focus around adaptation to the Year 2 curriculum	**The Big Ideas** Data need to be collected with a question or purpose in mind. Tally charts are used to collect data over time (cars passing the school, birds on the bird table).	**The Big Ideas** Data needs to be collected with a question or purpose in mind. Tally charts are used to collect data over time (cars passing the school, birds on the bird table). They can also be used to keep track of counting.
	Becoming a Mathematician	**n/a**	Teaching for Mastery Year 2	Teaching for Mastery Year 3

STATISTICS (STC - 2 weeks)

Strand		Reception	Yr1	Yr2	Yr3
Presenting and Interpreting data	Presenting and Interpreting data	***30-50 months*** *Knows that numbers identify how many objects are in a set.* ***30-50 months*** *Beginning to represent numbers using fingers, marks on paper or pictures.* ***30-50 months*** *Compares two groups of objects, saying when they have the same number.* ***30-50 months*** *Shows an interest in representing numbers.* ***30-50 months*** *Realises not only objects, but anything can be counted, including steps, claps or jumps.* ***40-60+ months*** *count objects to 10, and begin to count beyond 10* ***40-60+ months*** *count out up to six objects from a larger group* ***40-60+ months*** *use the language of 'more' and 'fewer' to compare two sets of objects* ***40-60+ months*** *select the correct numeral to represent 1 to 5, then 1 to 10 objects* ***Adult Initiated*** Find out **by counting** which of two collections has more/fewer objects. In each case, check if necessary by lining up and matching one-to-one **Play 5 Interesting things**: Give children paper plates and ask them to select 5 things from a collection of 'interesting' objects. Using a die or spinner marked 1 more/ 1 less children add 1 to their collection or remove 1. *How many did you have? What will 1 more/less be? Are you sure? Who has the most now? Who has the fewest?* **Count the same number of different objects:** *Can you find and count 4 buttons, 4 pencils, 4 bricks, 4 tables, 4 children, 4 hoops,* **Count objects from a larger group:** *In the water can you catch 6 fish? How do you know that you have caught 6? Can you find the same amount of shells? What's the same? What's different?* ***Enabling Environments –child initiated, adult supported*** **Outdoors** Children use baskets, bags etc., to collect a specific number of different found materials in the outdoors, sort and count **Role Play**: in the shop model shopping from a list, choosing and counting 3 apples, 6 carrots, 5 bananas, placing each in a basket as you count. Encourage children to make shopping lists. Nrich task – SHOW Me	1 2 3 4 **(Y2 objective) interpret and construct simple pictograms, tally charts, block diagrams and simple tables**  Class 2 make a graph. 5 children have blue eyes. Show this on a graph. More children have brown eyes than green eyes. How many more? 1 2 3 4 5 6 **(Y2 objective) ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity** Look at this pictogram. There are 12 boys in class 5. Show this on the pictogram  How many more girls than boys chose the giraffes? How many more boys chose lions than elephants? Which animal was chosen by the greatest number of children?  A shop sold 10 ice lollies on Wednesday How many lollies were sold on Monday? How many **more** lollies were sold on Tuesday than Wednesday  1 2 3 4 5	**interpret and present data using bar charts, pictograms and tables** Process, present and interpret data to pose and answer questions. They use all representations such as Venn and Carroll diagrams, bar charts, pictograms. They collect data quickly onto a class tally chart. Children recognise that a tally involves grouping in fives and that this helps them to count the frequencies quickly and accurately. They produce a simple pictogram and/or bar chart, where a symbol represents 2 units. Children sort and classify objects, numbers or shapes according to two criteria, and display this work on Venn and Carroll diagrams Can you put the all numbers in the correct places? 25 247 7002 49 990  Class 3 collected litter in the park –  How many of each item did they collect? How many more bags did they get than cans? 1 2 3 4 5 6 7 8 9 1

STATISTICS (STC - 2 weeks)

Solving Problems	Solving Problems		*(Year 2 adapted) ask and answer **simple** questions, ~~about totalling and~~ comparing categorical data (without needing to read scales)* e.g. Some children rolled toy cars down a slope  Which car rolled the furthest? Place the cars in order from shortest distance travelled to furthest distance travelled. Make up a question about the cars	**ask and answer questions about totalling and comparing categorical data** Some children rolled toy cars down a slope  How far did the blue car roll? How much further did the green car roll than the red car? additional questions: Which car rolled the furthest? Make up a question about the red car and the yellow car. Some children were asked to choose their favourite animal in the zoo. This table shows the results 	**solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables** Collect, represent and interpret data in order to answer a question that is relevant to them, e.g. • What new addition to the school play equipment would you like? • Which class race shall we choose for sports day? They decide on the information they need to collect and collect it efficiently, collate the information on a tally chart or frequency table, then use this to make simple frequency diagrams such as bar charts, using ICT where appropriate. They discuss the outcomes, responding to questions such as: • Which items had fewer than five votes? • Would the table be the same if we asked Y6? • How might the table change if everyone had two votes? Children present their conclusions to others, identifying key points that should be included. They make suggestions as to how this data could be used; for example, they may decide that they need to investigate the price of different equipment or discuss what they need to do to prepare for their chosen race. 
	NCETM Reasoning			**True or false?** (Looking at a simple pictogram) "More people travel to work in a car than on a bicycle". Is this true or false? Convince me. Make up you own 'true/false' statement about the pictogram **What's the same, what's different?** Pupils identify similarities and differences between different representations and explain them to each other **Create a questions** Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives.	**True or false?** (Looking at a bar chart) "Twice as many people like strawberry than lime". Is this true or false? Convince me. Make up your own 'true/false' statement about the bar chart. **What's the same, what's different?** Pupils identify similarities and differences between different representations and explain them to each other **Create a question** Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives.