## Statistics with Reasoning

## National Centre <br> for Excellence in the <br> Teaching of Mathematics

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| INTERPRETING, CONSTRUCTING AND PRESENTING DATA |  |  |  |  |  |
|  | interpret and construct simple pictograms, tally charts, block diagrams and simple tables | interpret and present data using bar charts, pictograms and tables | interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems |
|  | ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity |  |  |  |  |
|  | ask and answer questions about totalling and comparing categorical data |  |  |  |  |
|  | True or false? (Looking at a simple pictogram) "More people travel to work in a car than on a bicycle". <br> Is this true or false? Convince me. Make up you own 'true/false' statement about the pictogram | True or false? (Looking at <br> a bar chart) "Twice as many people like strawberry than lime". <br> Is this true or false? Convince me. Make up your own 'true/false' statement about the bar chart. | True or false? (Looking at a graph showing how the class sunflower is growing over time) "Our sunflower grew the fastest in July". <br> Is this true or false? Convince me. Make up your own 'true/false' statement about the graph. | True or false? (Looking at a train time table) "If I want to get to Exeter by 4 o'clock this afternoon, I will need to get to Taunton station before midday". <br> Is this true or false? Convince me. Make up your own 'true/false' statement about a journey using the timetable. | True or false? <br> (Looking at a pie chart) "More than twice the number of people say their favourite type of T.V. programme is soaps than any other" <br> Is this true or false? Convince me. Make up your own 'true/false' statement about the pie chart. |

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|  | What's the same, what's different? <br> Pupils identify similarities and differences between different representations and explain them to each other | What's the same, what's different? <br> Pupils identify similarities and differences between different representations and explain them to each other | What's the same, what's different? <br> Pupils identify similarities and differences between different representations and explain them to each other | What's the same, what's different? <br> Pupils identify similarities and differences between different representations and explain them to each other | What's the same, what's different? <br> Pupils identify similarities and differences between different representations and explain them to each other |
| :---: | :---: | :---: | :---: | :---: | :---: |
| SOLVING PROBLEMS |  |  |  |  |  |
|  |  | solve one-step and twostep questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | solve comparison, sum and difference problems using information presented in a line graph | calculate and interpret the mean as an average |
|  | Create a questions Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives. | Create a questions Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives. (see above) | Create a questions Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives. (see above) | Create a questions Pupils ask (and answer) questions about different statistical representations using key vocabulary relevant to the objectives. (see above) | Create a questions Make up a set of five numbers with a mean of 2.7 Missing information The mean score in six test papers in a spelling test of 20 questions is 15 .Five of the scores were 131217 1816 What was the missing score? |

