

# SYLLABUS RELATIONSHIPS

## Activities that teach Data

Workbook activities relate to outcomes of the NSW Syllabus as follows:

OUTCOME	Workbook Activities
<b><u>DS4.1 - Data Representation</u></b>	
<b>Knowledge and skills. Students learn about:</b>	
<ul style="list-style-type: none"> <li>drawing and interpreting graphs of the following types:               <ul style="list-style-type: none"> <li>- sector graphs</li> <li>- conversion graphs</li> <li>- divided bar graphs</li> <li>- line graphs</li> <li>- step graphs</li> </ul> </li> </ul>	2 - 3,4,5,6,7,8,9 3 - 2,3,4,5,6 5 - 2,3,4,5,6,7 6 - 2 7 - 2,3,4,5,6,7,8,9 8 - 1,2,3,4,5,6,7,8,9,10 9 - 4 13 - 1,2,3,4,5,6,7 14 - 1,2,3,4,5,6
<ul style="list-style-type: none"> <li>choosing appropriate scales on the horizontal and vertical axes when drawing graphs</li> </ul>	2 - 9 3 - 2,4 4 - 8,9 5 - 6,7 6 - 7 8 - 9 10 - 7,8
<ul style="list-style-type: none"> <li>drawing and interpreting travel graphs, recognising concepts such as change of speed and change of direction</li> </ul>	5 - 3,6 8 - 3 13 - 5
<ul style="list-style-type: none"> <li>using line graphs for continuous data only</li> </ul>	5 - 1,2,4 8 - 3 14 - 2
<ul style="list-style-type: none"> <li>reading and interpreting tables, charts and graphs</li> </ul>	1 - 2,3,4,5,6 2 - 8 3 - 6 4 - 2,3,5,9 5 - 1,2,4,5,6,7 6 - 1,2,3,4,5,6,7,8 7 - 7,8,9 8 - 1,2,3,4,5,6,7,8,9,10 9 - 1,2,4 10 - 1,2,5,6 13 - 1,2,3,4,5,6
<ul style="list-style-type: none"> <li>recognising data as quantitative (either discrete or continuous) or categorical</li> </ul>	1 - 2 3 - 1,5,6 4 - 1,7,8 5 - 1,2 8 - 2,3
<ul style="list-style-type: none"> <li>using a tally to organise data into a frequency distribution table (class intervals to be given for grouped data)</li> </ul>	1 - 2,3,4 3 - 2 4 - 6,8 10 - 3,7,8 11 - 9
<ul style="list-style-type: none"> <li>drawing frequency histograms and polygons</li> </ul>	4 - 7,8,9 10 - 2,3,4,5,7,8
<ul style="list-style-type: none"> <li>drawing and using dot plots</li> </ul>	4 - 2 10 - 1,6,7 11 - 8

OUTCOME	Workbook Activities
<b><u>DS4.1 - Data Representation</u></b>	
<b>Knowledge and skills. Students learn about:</b>	
<ul style="list-style-type: none"> <li>drawing and using stem-and-leaf plots</li> </ul>	4 - 3,4,5 10 - 2
<ul style="list-style-type: none"> <li>using the terms 'cluster' and 'outlier' when describing data</li> </ul>	6 - 3,4 7 - 10 10 - 2,6,7
<b><u>DS4.1 - Data Representation</u></b>	
<b>Working Mathematically. Students learn to:</b>	
<ul style="list-style-type: none"> <li>choose appropriate forms to display data (<i>Communicating</i>)</li> </ul>	2 - 7,9 4 - 2,3,4,5,6,9 7 - 3,6 8 - 2,3
<ul style="list-style-type: none"> <li>write a story which matches a given travel graph (<i>Communicating</i>)</li> </ul>	13 - 5
<ul style="list-style-type: none"> <li>read and comprehend a variety of data displays used in the media and in other school subject areas (<i>Communicating</i>)</li> </ul>	4 - 9 5 - 4,6,7 6 - 2,3,5,6 8 - 1,4,5,7,8,10 9 - 4,5
<ul style="list-style-type: none"> <li>interpret back-to-back stem-and-leaf plots when comparing data sets (<i>Communicating</i>)</li> </ul>	4 - 5 10 - 2
<ul style="list-style-type: none"> <li>analyse graphical displays to recognise features that may cause a misleading interpretation eg displaced zero, irregular scales (<i>Communicating, Reasoning</i>)</li> </ul>	8 - 1,2,3,4,5,6,7,8,9,10 9 - 4,5
<ul style="list-style-type: none"> <li>compare the strengths and weaknesses of different forms of data display (<i>Reasoning, Communicating</i>)</li> </ul>	2 - 3,4,5,6,7,8,9 4 - 3,4,5,9
<ul style="list-style-type: none"> <li>interpret data displayed in a spreadsheet (<i>Communicating</i>)</li> </ul>	7 - 1, 2,3,4,5,6,7,8,9,10
<ul style="list-style-type: none"> <li>identify when a line graph is appropriate (<i>Communicating</i>)</li> </ul>	5 - 2,4 8 - 3 14 - 2
<ul style="list-style-type: none"> <li>interpret the findings displayed in a graph eg the graph shows that the heights of all children in the class are between 140 cm and 175 cm and that most are in the group 151–155 cm (<i>Communicating</i>)</li> </ul>	2 - 8 3 - 6 4 - 2,3,5,9 5 - 1,2,4,5,6,7 6 - 1,2,3,4,5,6,7,8 7 - 7,8,9 8 - 1,2,3,4,5,6,7,8,9,10 9 - 1,2,4 10 - 1,2,5,6 13 - 1,2,3,4,5,6
<ul style="list-style-type: none"> <li>generate questions from information displayed in graphs (<i>Questioning</i>)</li> </ul>	5 - 5 7 - 6

OUTCOME	Workbook Activities
<b>DS4.2 - Data Analysis and Evaluation</b> <b>Knowledge and skills. Students learn about:</b>	
<ul style="list-style-type: none"> <li>formulating key questions to generate data for a problem of interest</li> </ul>	12 - 6,8
<ul style="list-style-type: none"> <li>refining key questions after a trial</li> </ul>	1 - 3 12 - 8
<ul style="list-style-type: none"> <li>recognising the differences between a census and a sample</li> </ul>	1 - 1 11 - 1
<ul style="list-style-type: none"> <li>finding measures of location (mean, mode, median) for small sets of data</li> </ul>	1 - 2,3,4 3 - 2,3,4,5,6 4 - 2,3,4,5,6,7,8 8 - 3 9 - 6 10 - 1,5,7,8 11 - 6,9
<ul style="list-style-type: none"> <li>using a scientific or graphics calculator to determine the mean of a set of scores</li> </ul>	4 - 6
<ul style="list-style-type: none"> <li>using measures of location (mean, mode, median) and the range to analyse data that is displayed in a frequency distribution table, stem-and-leaf plot, or dot plot</li> </ul>	4 - 2,3,4,5,6,7,8 8 - 3 10 - 1,5,7,8 11 - 6,9
<ul style="list-style-type: none"> <li>collecting data using a random process eg numbers from a page in a phone book, or from a random number function on a calculator</li> </ul>	11 - 3,4
<ul style="list-style-type: none"> <li>making predictions from a sample that may apply to the whole population</li> </ul>	11 - 4,5,6,7,8,9
<ul style="list-style-type: none"> <li>making predictions from a scatter diagram or graph</li> </ul>	5 - 4 6 - 5,6 13 - 2,3,4 14 - 1,3
<ul style="list-style-type: none"> <li>using spreadsheets to tabulate and graph data</li> </ul>	7- 1, 2,3,4,5,6,7, 8,9,10 10 - 5
<ul style="list-style-type: none"> <li>analysing categorical data eg a survey of car colours</li> </ul>	2 - 8,9 3 - 2,3,4,5,6 12 - 7,8

<b>DS4.2 - Data Analysis and Evaluation</b>	
<b>Working Mathematically. Students learn to:</b>	
<ul style="list-style-type: none"> <li>work in a group to design and conduct an investigation eg               <ul style="list-style-type: none"> <li>decide on an issue</li> <li>decide whether to use a census or sample</li> <li>choose appropriate methods of presenting questions (yes/no, tick a box, a scale of 1 to 5, open-ended, etc)</li> <li>analyse and present the data</li> <li>draw conclusions (<i>Questioning, Reasoning, Applying Strategies, Communicating</i>)</li> </ul> </li> </ul>	12 - 1,2,4,5,6,7,8
<ul style="list-style-type: none"> <li>use spreadsheets, databases, statistics packages, or other technology, to analyse collected data, present graphical displays, and discuss ethical issues that may arise from the data (<i>Applying Strategies, Communicating, Reflecting</i>)</li> </ul>	7- 1,2,3,4,5,6,7,8,9,10 12 - 3,7,8
<ul style="list-style-type: none"> <li>consider the size of the sample when making predictions about the population (<i>Applying Strategies</i>)</li> </ul>	11 - 2,4,5,8,9
<ul style="list-style-type: none"> <li>compare two sets of data by finding the mean, mode and/or median, and range of both sets (<i>Applying Strategies</i>)</li> </ul>	4 - 5,9 10 - 2,8
<ul style="list-style-type: none"> <li>recognise that summary statistics may vary from sample to sample (<i>Reasoning</i>)</li> </ul>	11 - 4,8
<ul style="list-style-type: none"> <li>draw conclusions based on the analysis of data (eg a survey of the school canteen food) using the mean, mode and/or median, and range (<i>Applying Strategies, Reasoning</i>)</li> </ul>	6 - 7 7 - 9,10 9 - 6 11 - 6,8 12 - 8
<ul style="list-style-type: none"> <li>interpret media reports and advertising that quote various statistics eg media ratings (<i>Communicating</i>)</li> </ul>	9 - 1,2,3,4,5
<ul style="list-style-type: none"> <li>question when it is more appropriate to use the mode or median, rather than the mean, when analysing data (<i>Questioning</i>)</li> </ul>	10 - 1,6