








Scope and sequence summary	Duration: 2–3 weeks
Substrands: S5.1 Single Variable Data Analysis (all) , S5.2 Single Variable Data Analysis (part) , S5.3 Bivariate Data Analysis (part)	

Outcomes	Key considerations	Overview
<ul style="list-style-type: none"> > uses appropriate terminology, diagrams and symbols in mathematical contexts MA5.1-1WM > selects and uses appropriate strategies to solve problems MA5.1-2WM > provides reasoning to support conclusions that are appropriate to the context MA5.1-3WM > uses statistical displays to compare sets of data, and evaluates statistical claims made in the media MA5.1-12SP > constructs arguments to prove and justify results MA5.2-3WM > uses quartiles and box plots to compare sets of data, and evaluates sources of data MA5.2-15SP > uses and interprets formal definitions and generalisations when explaining solutions and/or conjectures MA5.3-1WM > investigates the relationship between numerical variables using lines of best fit, and explores how data is used to inform decision-making processes MA5.3-19SP 	<p><i>Stage 5.1 key ideas</i></p> <ul style="list-style-type: none"> • Construct and interpret back-to-back stem-and-leaf plots • Describe data using terms including 'skewed', 'symmetric' and 'bi-modal' • Compare two sets of numerical data in a display using mean, median and range • Interpret and critically evaluate reports in the media and elsewhere that link claims to data displays and statistics <p><i>Stage 5.2 key ideas</i></p> <ul style="list-style-type: none"> • Critically evaluate sources of data in media reports and elsewhere <p><i>Stage 5.3 key ideas</i></p> <ul style="list-style-type: none"> • Critically evaluate the processes of planning, collecting, analysing and reporting studies in the media and elsewhere • Recognise that statistics are used in the decision-making processes of government and companies <p><i>Background information</i></p> <p>In Stage 5.1, students are only required to recognise the general shape and lack of symmetry in skewed distributions. No specific analysis of the relative positions of mean, median and mode is required.</p>	<p>This unit of work includes content from Stage 5.1 (primarily), Stage 5.2 and Stage 5.3. Teachers should differentiate the learning experiences to meet the needs of the students in their class. Teachers may decide for particular groups of students that they:</p> <ul style="list-style-type: none"> • comprehensively review related Stage 4 content before studying the Stage 5.1 content • briefly review related Stage 4 content before studying all of the Stage 5.1 content and some of the Stage 5.2 content • study all of the Stage 5.1 and Stage 5.2 content only • study all of the Stage 5.1 and Stage 5.2 content and some of the Stage 5.3 content • study all of the Stage 5.1, Stage 5.2 and Stage 5.3 content (ie all of the content of this unit of work). <p>The aspect of outcome MA5.2-15SP that applies to this unit of work is 'evaluates sources of data'. It is not expected that students studying this unit of work will 'use quartiles and box plots to compare sets of data'.</p> <p>The aspect of outcome MA5.3-19SP that applies to this unit of work is 'explores how data is used to inform decision-making processes'. It is not expected that students studying this unit of work will 'investigate the relationship between numerical variables using lines of best fit'.</p> <p><i>Assumed knowledge</i></p> <p>S4 Data Collection and Representation S4 Single Variable Data Analysis</p> <p>Some students may need to review the concepts contained in these Stage 4 substrands to access the content contained in this unit of work.</p> <p><i>Preparation and class organisation</i></p> <p>In the weeks preceding commencement of this unit of work, students collect reports or articles that reference statistics and/or data displays from secondary sources, such as newspapers, magazines and websites. They bring to class copies of (or hyperlinks to) the materials they have found.</p>

Content	Teaching, learning and assessment	Resources
<p>Identify everyday questions and issues involving at least one numerical and at least one categorical variable, and collect data directly from secondary sources (ACMSP228)</p> <ul style="list-style-type: none"> identify and investigate relevant issues involving at least one numerical and at least one categorical variable using information gained from secondary sources, eg the number of hours in a working week for different professions in Australia, the annual rainfall in various parts of Australia compared with that of other countries in the Asia-Pacific region 	<p>Stage 5.1</p> <p><i>With teacher guidance where necessary, students identify issues of interest to them and generate questions about these issues. Teachers could suggest general areas so that students have a variety of questions to investigate, such as:</i></p> <ul style="list-style-type: none"> international issues, eg What is the average number of children in families in different countries of the world? the Australian population, eg How many hours make up a working week for different professions in Australia? What is the difference in the average monthly mortgage repayment for various cities in Australia? characteristics of school students, eg Is there a difference between dominant-hand and non-dominant-hand reaction times for Australian school students? Do males spend more time than females gaming on the internet? What is the general difference between travel time to school for urban and rural school students? sport, eg Which teams are likely to end up in the top four of the cricket competition? What were the differences in the performances of the two teams in the grand final of the football competition that led to one team beating the other? Which sport results in the most hospitalised injuries? weather, eg What is the difference in annual rainfall in various parts of Australia compared to that of other countries in the Asia-Pacific region? TV, eg How much time is spent watching TV or video content in one month by different age groups and/or by males compared to females? social media, eg Do females send more text messages than males on a daily basis? What digital devices are used by different age groups of Australians, and for what purposes? real estate, eg What is the median house price compared to the median apartment price in various Australian cities/suburbs and/or towns? <p><i>Students brainstorm how they will find the secondary sources of the data needed to investigate their questions. Teachers guide students to consider:</i></p> <ul style="list-style-type: none"> the search terms that the students would use in a web search engine to locate the data required a variety of sources of data (see resources), eg: <ul style="list-style-type: none"> census data reports of surveys in the media data collected by various government organisations and companies. 	<p><i>Examples of secondary sources for data and/or reports of data include:</i></p> <ul style="list-style-type: none"> International data, eg OECD Statistics, UN Data, UNESCO Institute for Statistics Australian census data, eg ABS Census Data, ABS Media Releases Reports on various social issues in Australia, eg ABS Assistants Reports of surveys by market research companies, eg Nielsen Reports and Downloads, Sweeney Research Press Releases Australian school student data, eg CensusAtSchool, CensusAtSchool Infographics Sport, eg NRL Stats, Soccer Stats (Worldwide), Cricket Australia Statistics, 2007 Hockey Australia Census, Hospitalised sports injury, Australia 2002-03 Weather data for various locations, eg BOM Climate Data Online TV/radio ratings, eg OzTAM Social media data, eg Sensis 2012 Yellow™ Social Media Report Newspaper reports (paper or online)









Content	Teaching, learning and assessment	Resources
	<p><i>Teachers and/or students need to retain the various reports and secondary data that they collect for use in later parts of the unit of work. However, teachers may need to supplement these materials with other reports and secondary data to suit the content that follows.</i></p>	
<p>Construct back-to-back stem-and-leaf plots and histograms and describe data using terms including 'skewed', 'symmetric' and 'bi-modal' (ACMSP282)</p> <ul style="list-style-type: none"> • construct frequency histograms and polygons from a frequency distribution table 	<p>Stage 5.1</p> <p><i>Teachers model how to construct frequency histograms and polygons, highlighting essential features explicitly, including the importance of:</i></p> <ul style="list-style-type: none"> • naming the horizontal and vertical axes • choosing an appropriate title that describes the data • determining, marking and labelling appropriate scales for the axes • for histograms: <ul style="list-style-type: none"> – correctly placing the columns in relation to the horizontal axis – allowing no gaps between adjoining columns • for polygons: <ul style="list-style-type: none"> – correctly placing points representing the frequencies of the various data values – correctly joining the plotted points from left to right, using straight-line segments, starting from the intersection of the axes and ending on the horizontal axis at the location of what would represent the next data value. <p><i>Students practise constructing frequency histograms and polygons from a variety of frequency distribution tables. Sets of data should include appropriate data collected about the issues of interest identified earlier in the unit of work.</i></p>	<p><i>Online resources</i></p> <ul style="list-style-type: none"> • Article by Naomi Robbins appearing in <i>Forbes</i> magazine, 'A histogram is NOT a bar chart' • Online grid paper creator: select 'graph paper' <p><i>Resources</i></p> <ul style="list-style-type: none"> • Grid paper can assist students in accurately constructing frequency histograms and polygons • Rulers • Pencils
<ul style="list-style-type: none"> • use the term 'positively skewed', 'negatively skewed', 'symmetric' or 'bi-modal' to describe the shape of distributions of data 🗨️ <ul style="list-style-type: none"> ▶ describe the shape of data displayed in stem-and-leaf plots, dot plots and histograms (Communicating) 🗨️ ▶ suggest possible reasons why the distribution of a set of data may be symmetric, skewed or bi-modal (Reasoning) ⚙️ 	<p>Stage 5.1</p> <p><i>The teacher explains the meaning of the following terms in relation to data displays (see the glossary in the Mathematics K–10 Syllabus), providing appropriate visual representations for each term:</i></p> <ul style="list-style-type: none"> • 'shape' of a distribution • 'skewed' distribution – 'tailing off' at one end of the distribution • 'positively skewed' distribution – tailing off to the upper end of the distribution • 'negatively skewed' distribution – tailing off to the lower end of the distribution • 'symmetric' distribution – (roughly) even spread around some central point • 'bi-modal' distribution – distribution that features two distinct modes. 	<p><i>Glossary definitions</i></p> <ul style="list-style-type: none"> • Shape (statistics) • Bi-modal data

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	<p><i>Students use these terms to describe the shape of a variety of data distributions, including those represented by:</i></p> <ul style="list-style-type: none"> • frequency histograms • dot plots • stem-and-leaf plots and back-to-back stem-and-leaf plots • sets of data collected about the issues of interest identified earlier in the unit of work. <p><i>Students suggest reasons why particular data distributions may be symmetric, skewed or bi-modal with reference to the issue for which the data was collected.</i></p>	
<ul style="list-style-type: none"> • construct back-to-back stem-and-leaf plots to display and compare two like sets of numerical data, eg points scored by two sports teams in each game of the season  <ul style="list-style-type: none"> ▶ describe differences in the shapes of the distributions of two sets of like data (Communicating)  	<p><i>Review how to construct stem-and-leaf plots previously studied in Stage 4.</i></p> <p>Stage 5.1 <i>The teacher models how to construct back-to-back stem-and-leaf plots (unordered plots could be constructed prior to ordered plots) to display two like sets of numerical data and highlight essential features explicitly, including the importance of:</i></p> <ul style="list-style-type: none"> • choosing an appropriate title to describe the data • choosing an appropriate stem for the sets of data • aligning data values • ordering data values. <p><i>Students practise constructing back-to-back stem-and-leaf plots from a variety of sets of data. Sets of data could include secondary data collected about the issues of interest identified earlier in the unit of work.</i></p> <p><i>Students describe and compare the shape of two like sets of numerical data represented in back-to-back stem-and-leaf plots (including those the students have constructed themselves):</i></p> <ul style="list-style-type: none"> • using the terms 'symmetric', 'positively skewed', 'negatively skewed' and 'bi-modal' appropriately • drawing appropriate conclusions to compare the two sets of data. <p>Note: Students' results in two successive assessments (without name identifiers)</p>	<p><i>Scottle resources</i></p> <ul style="list-style-type: none"> • L5912 Stem-and-leaf plots: an introduction (focuses on back-to-back stem-and-leaf plots) • L5906 Graph investigator: hand preference • L10339 Graph investigator: hand preference (ESL) • L5905 Graph investigator: reaction time • L10338 Graph investigator: reaction time (ESL) • M009386 Back-to-back stem-and-leaf plot of sex vs concentration time (uses CensusAtSchool data)

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	<p>can be used to create a back-to-back stem-and-leaf plot, such as comparing pre-test and post-test results for a particular topic. This can also provide feedback to the students to affirm the extent of the learning that has taken place.</p>	
<p>Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread (ACMSP283)</p> <ul style="list-style-type: none"> • interpret two sets of numerical data displayed in back-to-back stem-and-leaf plots, parallel dot plots and histograms  • calculate and compare means, medians and ranges of two sets of numerical data displayed in back-to-back stem-and-leaf plots, parallel dot plots and histograms  <ul style="list-style-type: none"> ▶ make comparisons between two like sets of data by referring to the mean, median and/or range, eg 'The range of the number of goals scored in the various weeks of a competition for Team A is smaller than that for Team B, suggesting that Team A is more consistent from week to week than Team B' (Communicating, Reasoning)   	<p><i>Review the following from Stage 4:</i></p> <ul style="list-style-type: none"> • the meaning and use of the terms 'measure of location (centre)' and 'measure of spread' • how to calculate the mean, median and range for a variety of data displays. <p>Stage 5.1</p> <p><i>For a variety of back-to-back stem-and-leaf plots, parallel dot plots and histograms, students interpret each of the two sets of data, and the data as a whole, determining measures such as:</i></p> <ul style="list-style-type: none"> • the total number of data values represented • the number of data values less or greater than, and less or greater than or equal to, a particular value. <p><i>The teacher models, and students practise, calculating the means, medians and ranges of each of the two sets of data, and the data as a whole, for a variety of back-to-back stem-and-leaf plots, parallel dot plots and histograms. Sets of data could include secondary data collected about the issues of interest identified earlier in the unit of work.</i></p> <p><i>Students compare the means, medians and ranges of two like sets of data for a variety of back-to-back stem-and-leaf plots, parallel dot plots and histograms in order to:</i></p> <ul style="list-style-type: none"> • draw conclusions with justification, such as which set of data: <ul style="list-style-type: none"> – indicates a more consistent pattern in a particular context – has a higher or lower mean or median • provide possible explanations for why one set of data has a higher or lower mean or median than the other in a particular context, eg 'The median number of text messages sent by school students per day is lower during the school term than it is during the holidays. This is because mobile phones are banned from use during school days, so students have fewer hours in which they can send text messages.' 	<p><i>Scottle resources</i></p> <ul style="list-style-type: none"> • L3513 Box plot/histogram: Select the histogram option – this interactive automatically generates a histogram and calculates mean and median as data values are entered • A comparison of the mean and median for up to three dot plots can be demonstrated at http://illuminations.nctm.org/activitydetail.aspx?ID=160

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<ul style="list-style-type: none"> • analyse graphical displays to recognise features that may have been manipulated to cause a misleading interpretation and/or support a particular point of view ❄️ <ul style="list-style-type: none"> ▶ explain and evaluate the effect of misleading features on graphical displays (Communicating, Reasoning) ❄️ 	<p>Stage 5.1 <i>The teacher outlines the various ways in which data displays can be misleading using appropriate examples to demonstrate the effect of using:</i></p> <ul style="list-style-type: none"> • a title that is too general, is inaccurate, or tells the reader what to think, or using no title at all • an axis or axes that are not labelled, or are incorrectly or inadequately labelled, eg a label that does not indicate the units of measurement being used • a scale on the vertical axis that does not start at zero, eg to make differences between values appear much larger than they actually are • scale(s) on the axis or axes that are not uniform, eg markings on the axis or axes that are not evenly spaced and/or values that do not increase by constant amounts • the same symbol or picture to represent different values on the same data display, eg a given symbol represents a particular value for one category, and the same symbol represents a different value for another category in the same display • symbols or pictures of different sizes that result in inaccurate comparisons between categories, eg using pictures of different sizes that may make it appear that there are more of the items represented by the larger pictures than there actually are • three-dimensional imagery that results in distortion, eg through the use of an oblique axis • volumes or areas that result in inaccurate comparisons between categories, eg using cylinders of different diameter and different height in the place of columns to make differences between categories appear larger than they are; using circles for each category where the reader does not know if the value is represented by the diameter or area of the circle • an inappropriate display for the type of data, eg a line graph to represent the median house price in a particular year for major cities in Australia. <p><i>For a variety of data displays, including some misleading displays, students:</i></p> <ul style="list-style-type: none"> • identify any misleading features of the displays • explain the effect of any misleading features on the interpretation of the display • suggest reasons why the creator of a misleading display may have wanted to mislead 	<p><i>Online resources</i></p> <ul style="list-style-type: none"> • Use Google and/or Google Images to search for terms such as ‘misleading graphs’ • Articles by Naomi Robbins appearing in <i>Forbes</i> magazine: <ul style="list-style-type: none"> – ‘Misleading graphs: figures not drawn to scale’ – ‘Misleading graphs: displaying a change in one variable using area or volume’ – ‘A histogram is NOT a bar chart’ • Article from Arkansas Tech University, ‘Misleading graphs and statistics’ <p><i>Scottle resources</i></p> <ul style="list-style-type: none"> • M009072 Misleading graphs resource from ABS • L2393 Media report 1 (incorporates L2625, L2626, L2627) – requires students to identify and fix misleading features of graphs. • L2628 Media report 2 (incorporates L2629, L2630, L2631) – requires students to identify and fix misleading features of graphs.

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	<ul style="list-style-type: none"> suggest ways to revise any misleading features. <p><i>Students examine any data displays in the reports or articles that they have collected prior to and during this unit of work, and present to the class how each data display is (or is not) misleading.</i></p>	
<p>Evaluate statistical reports in the media and other places by linking claims to displays, statistics and representative data (ACMSP253)</p> <ul style="list-style-type: none"> interpret media reports and advertising that quote various statistics, eg media ratings, house prices, sports results, environmental data 📰🌿 critically review claims linked to data displays in the media and elsewhere ⚙️ <ul style="list-style-type: none"> suggest reasons why data in a display may be misrepresented in the accompanying text (Communicating, Reasoning) ⚙️ consider, informally, the reliability of conclusions from statistical investigations, taking into account issues such as factors that may have masked the results, the accuracy of measurements taken, and whether the results can be generalised to other situations ⚙️ 	<p>Stage 5.1</p> <p><i>For a variety of the reports or articles* collected prior to and during this unit of work, students:</i></p> <ul style="list-style-type: none"> interpret data displays and text in order to answer a variety of questions posed by the teacher and/or by other students identify which statistics are used in the reports or articles identify the main claims of the reports or articles critically evaluate the evidence presented to support the main claims, including: <ul style="list-style-type: none"> Are the claims made in the text an accurate representation of the data in any accompanying data displays? If not, what are the differences? Are the data displays (if any) misleading? If so, how? What is the effect on the reader? Are the measurements taken and/or the statistics used accurate? Is there enough evidence to support the claims made? Are there any considerations that have not been taken into account that could affect the claims made? decide if the claims made can be generalised and explain the reason(s) for their decisions in general terms. <p>* <i>The teacher may need to supplement the reports or articles collected by students to ensure that students have an appropriate variety of data displays.</i></p>	<p><i>Resources</i></p> <ul style="list-style-type: none"> Reports and articles collected prior to and during this unit of work
<p>Investigate reports of surveys in digital media and elsewhere for information on how data was obtained to estimate population means and medians (ACMSP227)</p> <ul style="list-style-type: none"> investigate survey data reported in the digital media and elsewhere to critically evaluate the reliability/validity of the source of the data and 	<p><i>Review the definitions of, and the differences between, a population and a sample studied in Stage 4.</i></p> <p>Stage 5.2</p> <p><i>For a variety of media reports/articles* that generalise the results of a survey</i></p>	<p><i>Resources</i></p> <ul style="list-style-type: none"> Reports or articles collected prior to and during this unit of work

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<p>the usefulness of the data   </p> <ul style="list-style-type: none"> ▶ describe bias that may exist due to the way in which the data was obtained, eg who instigated and/or funded the research, the types of survey questions asked, the sampling method used (Reasoning)  • make predictions from a sample that may apply to the whole population <ul style="list-style-type: none"> ▶ consider the size of the sample when making predictions about the population (Reasoning)  	<p><i>conducted to estimate population means and medians, and with teacher guidance where necessary, students:</i></p> <ul style="list-style-type: none"> • investigate and determine how the survey data was obtained, including: <ul style="list-style-type: none"> – Who instigated and/or funded the survey? – What types of survey questions were asked? – What was the sampling method used? – What was the size of the sample? – Who collected the data? – How was the data collected? – When was the data collected? • in general terms, discuss, determine and describe any issues in relation to the way in which the data was obtained that may have resulted in bias in the data • make predictions for the whole population using the percentages or proportions quoted in a report of the survey, eg if a report of a survey states that 15% of Australians own a tablet PC, predict how many tablet PCs there are in Australia, given its population. <p><i>* Reports or articles could include those collected prior to or during this unit of work. The teacher may need to supplement the reports or articles collected by students to ensure that students have an appropriate variety of materials.</i></p>	
<p>Investigate reports of studies in digital media and elsewhere for information on their planning and implementation (ACMSP277)</p> <ul style="list-style-type: none"> • investigate and evaluate the appropriateness of sampling methods and sample sizes used in reports where statements about a population are based on a sample  <ul style="list-style-type: none"> ▶ determine whether a sample used enables inferences or conclusions to be drawn about the relevant population (Reasoning)  • critically review surveys, polls and media reports  <ul style="list-style-type: none"> ▶ identify, describe and evaluate issues such as the misrepresentation of data, apparent bias in reporting, sampling techniques used, 	<p>Stage 5.3</p> <p><i>For at least two media reports or articles* that contain statements about recommendations or policy changes that will result from a survey, students:</i></p> <ul style="list-style-type: none"> • discuss and evaluate whether the sampling method and sample size used are appropriate for representing the views or features of the relevant population, including: <ul style="list-style-type: none"> – Is the size of the sample large enough to be representative? – Does the nature of the sampling method maximise the opportunity to survey people who represent the variety of views or features of the population? – Are the survey questions clear, concise and unambiguous, so that the data collected is likely to appropriately represent the views or features that it is intended to? • evaluate the inferences and conclusions drawn from the data, including: <ul style="list-style-type: none"> – Does the collected data support the inferences or conclusions drawn in 	<p><i>Resources</i></p> <ul style="list-style-type: none"> • Reports or articles collected prior to and during this unit of work

Content	Teaching, learning and assessment	Resources
<p>and the wording of questions used to collect data (Communicating, Problem Solving, Reasoning) ✨ 📊</p> <p>▶ discuss issues to be considered in the implementation of policies that result from studies reported in the media or elsewhere (Communicating, Problem Solving) ✨ 📊</p>	<p>the report? Why or why not?</p> <ul style="list-style-type: none"> – Is there any further data that could be collected to clarify the inferences or conclusions drawn? If so, what is its nature and how should it be collected? – Is there any apparent bias in the reporting of inferences or conclusions drawn from the data? <p>* <i>Reports or articles could include those collected prior to or during this unit of work. The teacher may need to supplement the reports or articles collected by students to ensure that students have an appropriate variety of materials.</i></p>	
<ul style="list-style-type: none"> • investigate the use of statistics and associated probabilities in shaping decisions made by governments and companies, eg the setting of insurance premiums, the use of demographic data to determine where and when various facilities may be built ✨ ▶ use Australian census data to identify issues for the local area or state and suggest implications for future planning in the local area or state (Problem Solving, Reasoning) ✨ 📊 	<p><i>Students recognise and investigate how statistics and associated probabilities are used by governments (and their agencies) and by companies in shaping decisions about type, location and/or funding of services and facilities, by finding examples from:</i></p> <ul style="list-style-type: none"> • local governments, such as in upgrading or constructing new local facilities, eg recreational facilities, car parks • state governments, such as in determining major infrastructure needs, eg public transport, hospitals, schools • insurance companies, such as in setting premiums • other companies, such as in determining how to target the correct market via advertising or packaging, eg market research, monitoring website traffic. <p><i>Students obtain and examine Australian census data for their local area (or state) over a period that includes several censuses in order to:</i></p> <ul style="list-style-type: none"> • identify trends in the population for the particular local area (or state), such as an increasing number of younger children and/or older people in the area, a decrease in average household income, changes in the mode of transport people use to get to work • suggest implications for future planning in the local area (or state) for each of the trends identified. 	<p><i>Online resources</i></p> <ul style="list-style-type: none"> • Survey data and reports from websites of: <ul style="list-style-type: none"> – local, state and federal governments and their departments and agencies – international organisations, eg UNESCO, the OECD, aid agencies – company websites, including those of insurance companies • Australian census data, eg ABS Census Data

Assessment overview

Assessment activities should be differentiated for each group of students according to the content that they have studied and their ability levels.

- Students complete a short pre-unit test on the Stage 4 content related to this unit of work. The results can be used by the teacher to guide the teaching and learning of this unit of work.
- Students complete an in-class post-unit test to assess their ability to:
 - interpret and construct frequency histograms and polygons, back-to-back stem-and-leaf plots, and parallel dot plots and histograms
 - describe the shape of a data distribution
 - compare two sets of data using summary statistics.
- Students use raw data from a secondary source to create two separate misleading displays of the same data. They present their misleading displays to the class, describe how each is misleading, and demonstrate how to revise the misleading features by comparing to a third data display that represents the data fairly and accurately.
- Students are given an unseen media article or report that includes descriptive text with some statistical measures, and at least one data display. Students are asked a series of questions about the article or report, including questions related to:
 - identification of statistics and/or features of the data display(s)
 - interpretation of the data display(s)
 - identification of the main claim(s) of the article or report
 - identification of any misleading features of the data display(s) and their effect on the interpretation of the data display(s)
 - evaluation of whether the evidence given supports the main claim(s)
 - identification and evaluation of the source of the data, including any perceived bias.
- Students create a presentation in which they:
 - identify and describe a trend for a particular area (or state) over time using census data
 - discuss implications of this trend for future planning by local (or state) governments.