

Grade 9 –12 Atlantic Canada Data Management, Statistics and Probability Curriculum Outcomes and Related Statistics Canada Resources on www.statcan.gc.ca

Grade 9





- See [English](#) and [French](#) versions of the complete 'Data Management Using E-STAT' Unit Grade 9 on the Nova Scotia Learning Resources and Technology website




Specific Grade 9 Curriculum Outcome	Related Statistics Canada Resources
<p>F1 Describe characteristics of possible relationships shown in scatterplots</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Analyzing provincial forestry practices using bar graphs and scatter graphs • Analyzing economic data and seasonality using line graphs and a scatter graphs • The Vitruvian theory – does it apply to you? • Analysing 2001 Census microdata <p>Data Sources:</p> <ul style="list-style-type: none"> • E-STAT • Community Profiles • Census at School • 2001 Census microdata file subsets • National Longitudinal Survey of Children and Youth Ages 16-17 microdata • Other aggregated and microdata files
<p>F2 Sketch lines of best fit and determine their equations</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Linear modelling of the life expectancy of Canadians using E-STAT Data • Linear modelling of the life expectancy of Canadians using E-STAT Data and Fathom • When will the average Canadian live to be 100? • Exploring linear functions • Talking feet • Analyzing provincial forestry practices using bar graphs and scatter graphs • Analyzing economic data and

	<p>seasonality using line graphs and a scatter graphs</p> <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F3 Sketch curves of best fit for relationships that appear to be non-linear</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Quadratic Modelling of Canada's Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs • Exponential modelling of the farm value of potatoes • Sinusoidal modelling of Canada's youth cohorts • Sinusoidal modelling of the number of Marriages by Month Using Fathom <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F4 Select, defend, and use the most appropriate methods for displaying data</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canada at a Glance – Graphing and Analysis • Canada at a Glance - Assessing quality of Life • Graphing in the Information Age <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Graph types • Canada at a Glance booklet • Societal Indicators <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F5 Draw inferences and make predictions based on data analysis and data displays</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canada at a Glance – Graphing and Analysis • Canada at a Glance - Assessing quality of

	<p style="text-align: center;"><u>Life</u></p> <p>Teacher Resources:</p> <ul style="list-style-type: none"> • <u>Canada at a Glance</u> booklet • <u>Societal Indicators</u> <p>Websites:</p> <ul style="list-style-type: none"> • <u>E-STAT</u>
<p>F6 Demonstrate an understanding of the role of data management in society</p>	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • <u>Statistics: Power from Data!: Information: Use in society</u> • <u>The Statistics Act</u> • <u>Statistics Canada: What we do</u>
<p>F7 Evaluate arguments and interpretations that are based on data analysis</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • <u>Using the Statistics Canada <i>Daily</i> to write a newspaper style article</u> <p>Teacher Resources:</p> <ul style="list-style-type: none"> • <u>The Daily</u>

Grade 10

Specific Grade 10 Curriculum Outcome	Related Statistics Canada Resources
GCO C: Students will be expected to explore, recognize, represent, and apply patterns and relationship, both formally and informally	
C2 model real world phenomena with linear, quadratic, exponential and power equations and linear inequalities	<p>Lesson Plans – Linear Modelling:</p> <p> Census at School</p> <ul style="list-style-type: none">• Exploring linear functions (view)• Recycling in Canada (view)• Talking feet (view)• The Vitruvian theory-does it apply to you? (view) <p> E-STAT</p> <ul style="list-style-type: none">• Exploring the correlation between two variables at the census tract level (Education and income) (view)• Linear modelling of the life expectancy of Canadians (view) <p>Lesson Plans – Quadratic Modelling:</p> <p> E-STAT</p> <ul style="list-style-type: none">• Quadratic modelling of Canada's Baby Boom (view)• Quadratic modelling of the number of males registered in apprenticeship programs (view) <p>Lesson Plans – Exponential, Sinusoidal Modelling:</p> <p> E-STAT</p> <ul style="list-style-type: none">• Exponential modelling of the farm value of potatoes (view)• Sinusoidal modelling of Canada's youth cohorts (view)

	<ul style="list-style-type: none"> • Exploring logistic regression of cable sales <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT • More datasets and lessons related to function modelling using data from E-STAT
<p>C3 gather data, plot the data using appropriate scales, and demonstrate an understanding of independent and dependent variables, and domain and range</p>	
<p>C4 create and analyze plots using appropriate technology</p>	
<p>C5 sketch graphs from words, tables and collected data</p>	<p>Lesson Plans – Graphing:</p> <ul style="list-style-type: none"> • Canada at a Glance – Graphing and Analysis <p> Census at School</p> <ul style="list-style-type: none"> • Bullying-studying it to curb it.... (view) • You are the researcher! <p> Census of Canada</p> <ul style="list-style-type: none"> • Age and Sex (view) • Getting to work (view) <p> E-STAT</p> <ul style="list-style-type: none"> • Analysing provincial forestry practices using bar graphs and scatter graphs (view) • Creating a demographic profile for an urban school neighbourhood using census tract data (view) <p>UPDATED AUG. 28, 2009 TO HERE</p>
<p>C8 identify, generalize and apply</p>	

patterns	
C9 construct and analyze graphs and tables relating two variables	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Linear modelling of the life expectancy of Canadians using E-STAT Data and Excel • Exploring linear functions • Talking feet activity • Analyzing annual forestry practices using bar graphs and scatter graphs
C10 describe real-world relationships depicted by graphs, tables of values and written descriptions	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canada at a Glance – Graphing and Analysis • Assessing Quality of Life • Thank Goodness It's Friday
C28 explore and describe the dynamics of change depicted in tables and graphs	
C32 determine if a graph is linear by plotting points in a given situation	
C33 graph by constructing a table of values, by using graphing technology, and when appropriate, by intercept-slope method	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Linear modelling lessons
F1 Design and conduct experiments using statistical methods and scientific inquiry	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • The Agri-Food Industry — It's Everywhere! III • Household Environment Survey – School Edition
F2 Demonstrate an understanding of the concerns and issues that pertain to the collection of data	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Data collection
F3 Construct various displays of data	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Graphing in the Information Age <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Graph types <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT

<p>F4 Calculate various statistics using appropriate technology, analyse and interpret the displays, and describe the relationships</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • What is the average height of your class?
<p>F5 Analyse statistical summaries, draw conclusions, and communicate results about distributions of data</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canada at a Glance – Graphing and Analysis • Assessing Quality of Life • Thank Goodness It's Friday <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Canada at a Glance booklet <p>Websites:</p> <ul style="list-style-type: none"> • Summary tables
<p>F6 Solve problems by modelling real-world phenomena</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Quadratic Modelling of Canada's Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs • Exponential function modelling with Potatoes data • Household Environment Survey – School Edition <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F7 Explore non-linear data using power and exponential regression to find a curve of best fit</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Quadratic Modelling of Canada's Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs • Exponential function modelling with Potatoes data • Exploring logistic regression of cable

	<p>sales</p> <ul style="list-style-type: none"> • Parabola Power: Youth Crimes in Canada <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F8 Determine and apply the line of best fit using the least squares method and median-median method with and without technology, and describe the differences between the two methods</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Talking feet activity • Exploring linear functions • Analyzing annual forestry practices using bar graphs and scatter graphs • Analyzing economic data and seasonality using scatter graphs
<p>F9 Demonstrate an intuitive understanding of correlation</p>	<p>Data Sources:</p> <ul style="list-style-type: none"> • Number of Earners Who Worked Full Year, Full Time and Their Average Earnings by Sex, Age Groups and Highest Level of Schooling • Earnings versus Income by Age and Sex
<p>F10 Use interpolation, extrapolation and equations to predict and solve problems</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • When will the average Canadian live to be 100?
<p>F11 Describe real-world relationships depicted by graphs and tables of values</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Quadratic Modelling of Canada's Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs • Exponential function modelling with Potatoes data • Exploring logistic regression of cable sales • Parabola Power: Youth Crimes in Canada • Canada at a Glance – Graphing and Analysis • Canadian Reading Habits • Catches and landed value of fish • Figures don't lie, but ... IIIa

	<ul style="list-style-type: none"> • Thank Goodness It's Friday <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT • Canada at a Glance booklet • Family Studies Kit <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT • Societal Indicators • Summary tables • Canada Year Book Historical Collection
F12 Explore measurement issues using the normal curve	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Data collection
F13 Calculate and apply mean and standard deviation using technology to determine if a variation makes a difference	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • What is the Average Height of Your Class? <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Measures of central tendency • Statistics: Power from Data!: Measures of spread
F14 Make and interpret frequency bar graphs while conducting experiments and exploring measurement issues	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • The Perfect Principal • Ontario Youths <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Organizing data • Statistics: Power from Data!: Bar graphs

Grade 11

Specific Outcome – Statistics Strand	Related Statistics Canada Resources
GCO C: Students will explore, recognize, represent and apply	



patterns and relationships, both informally and formally.	
C1 model real-world phenomena using quadratic functions	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Quadratic Modelling of Canada's Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs
C2 model real-world phenomena using exponential functions	<p>Lesson Plan:</p> <ul style="list-style-type: none"> • Exponential function modelling with Potatoes data
C3 sketch graphs from descriptions, tables and collected data	
F1 Draw inferences about a population from a sample	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Investigating sampling • The effect of sample size on data analysis <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Sampling methods <p>Data Sources:</p> <ul style="list-style-type: none"> • Census at School International Database
F2 Identify bias in data collection, interpretation and presentation	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Using the Statistics Canada Daily to write a newspaper style article • Bias or No Bias? <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Data collection • The Daily
F4 Demonstrate an understanding of how the size of a sample affects the variation in sample results	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Sampling methods • Sampling and Weighting notes from the 2001 Census

<p>F6 Explore periodic data to determine the equations of sinusoidal curves using regression analysis</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canada and its trading partners • Sinusoidal Modelling of Youth Cohorts • Sinusoidal Modelling of the Number of Marriages by Month using E-STAT Data and Fathom  <p>Data sets:</p> <ul style="list-style-type: none"> • Sinusoidal datasets • Dataset for the lesson Sinusoidal Modelling of Marriages by Month using E-STAT Data and Fathom  <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Function Modelling Using Secondary Data from E-STAT
<p>F7 Draw inferences from graphs, tables, and reports</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Ontario Youths
<p>F9 Construct, interpret, and apply 90% box plots</p>	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Measures of spread • Statistics: Power from Data!: Constructing box and whisker plots • National Longitudinal Survey of Children and Youth Ages 16-17: Analysis Ideas for Teachers • Analysing 2001 Census Microdata <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F10 Interpret and apply histograms and probability bar graphs</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • Canadians Your Age: Analysis of the 10-to-14 age group using E-STAT <p>Websites:</p> <ul style="list-style-type: none"> • E-STAT
<p>F11 Determine, interpret and apply confidence intervals</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • How weird is our class?

Specific Outcome – Probability Strand	Related Statistics Canada Resources
<p>G1 Construct and apply 90% box plots and normal probability distributions, and determine confidence intervals</p>	<p>Lesson Plan:</p> <ul style="list-style-type: none"> • Investigating sampling and confidence intervals <p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Measures of spread • Statistics: Power from Data!: Constructing box and whisker plots
<p>G3 Graph sample distributions and interpret them using 90% box plots, probability bar graphs, and the language of probability</p>	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • Statistics: Power from Data!: Measures of spread • Statistics: Power from Data!: Constructing box and whisker plots

Grade 12

Specific Outcome – Statistics Strand	Related Statistics Canada Resources
<p>F1 Create and analyze scatter plots and determine the equations for the curves of best fit, using appropriate technology</p>	<p>Lesson Plans:</p> <ul style="list-style-type: none"> • The Vitruvian theory – does it apply to you? • Analyzing annual forestry practices using bar graphs and scatter graphs • Analyzing economic data and seasonality using scatter graphs • Quadratic Modelling of Canada’s Baby Boom • Quadratic Modelling of the Number of Males Registered in Apprenticeship Programs • Function modelling with Potatoes data • Exploring logistic regression of cable sales • Parabola Power: Youth Crimes in Canada • Sinusoidal Modelling of Marriages by

	<p style="text-align: center;"><u>Month using E-STAT Data and Fathom</u></p>  <p>Data Sources:</p> <ul style="list-style-type: none"> • <u>E-STAT</u> • <u>Census at School</u> • <u>2001 Census microdata</u> • <u>National Longitudinal Survey of Children and Youth Ages 16-17 microdata</u> • <u>Datasets</u> from the Teacher resource, Function Modelling Using Secondary Data from E-STAT • <u>Dataset for the lesson Sinusoidal Modelling of Marriages by Month using E-STAT Data and Fathom</u> 
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<p>Specific Outcome – Probability Strand</p>	<p>Related Statistics Canada Resources</p>
<p>G2 Demonstrate an understanding of the fundamental counting principle and apply it to calculate probabilities</p>	<p>Teacher Resources:</p> <ul style="list-style-type: none"> • <u>Statistics: Power from Data!: Measures of spread</u> • <u>Statistics: Power from Data!: Constructing box and whisker plots</u>