



Alberta Math Education Curriculum Component: Unit- STATISTICS AND PROBABILITY (Data Analysis) Chapter 4: Data relationships

General Outcome:

➔ Collect, display and analyze data to solve problems.

Students will able to:

- collect data using a variety of methods and interpret the data
- plot ordered pairs on a grid
- interpret and construct line graphs
- use graphs to solve problems
- communicate about data and graphs

Alberta Math Education Specific Concept (learning outcome): 1 to 3.

Classroom assessment is generally divided into three types: assessment for learning (Diagnostic Assessment: D), assessment of learning (Summative Assessment: S), assessment as learning (F).

➔ For lesson extra practice, please visit:

<http://www.nelson.com/mathfocus/grade6/student/tryout.html>

Lesson Outline:

Lesson	Textbook Lesson Title	Learning Goals	Task **	Done
1	4.1-Creating a Questionnaires	Create a questionnaire, and use the results to answer a question. ➔ Materials: a ruler	Scaffolding for Getting Started (D) <input type="checkbox"/> HW: Workbook (pg. 27) (F) ➔ On line: Extra Practice	
2	4.2-Using Databases	Answer a question by using data from databases.	<input type="checkbox"/> HW: Workbook (pg. 28) (F) ➔ On line: Extra Practice	
3	4.3-Performing an Experiment	Design and perform an experiment to answer a question. ➔ Materials: grid paper and a ruler	<input type="checkbox"/> HW: Workbook (pg. 29) (F) ➔ On line: Extra Practice	
5	Mid-Chapter Review	Preparation for the quiz: Quiz Date: __/__/__ (mm/dd/yyyy)	<input type="checkbox"/> Textbook: Pg. 125 # 1 - 2: DOSO on letter	
6	4.5-Interpreting Line Graph	Interpret and compare line graphs. ➔ Materials: grid paper and a ruler	<input type="checkbox"/> HW: Workbook (pg. 31) (F) ➔ On line: Extra Practice	
7	4.6-Constructing Line Graphs	Construct and interpret line graphs.	<input type="checkbox"/> HW: Workbook (pg. 32) (F) ➔ On line: Extra Practice	
8	4.7-Communicating about Data	Communicate about how data are collected and displayed. ➔ Materials: grid paper	<input type="checkbox"/> HW: Workbook (pg. 33) (F) ➔ On line: Extra Practice	
9	Chapter Review	Preparation for the test: Test Date: __/__/__ (mm/dd/yyyy)	<input type="checkbox"/> Textbook: (F) ➔ Pg. 140 - 142 (1-3, 5-7): DOSO on letter ➔ Workbook (pg. 34) <input type="checkbox"/> Handout: (S) ➔ Chapter 4: Journal Questions ➔ Unit Project (Textbook Pg. 143): Canada Through the Years ➔ Chapter 4: Self-Assessment: Lesson Goals ➔ Review of Essential Skills: Chapter 4	

Here are some of the *Key Words* that are being used in this chapter:

*questionnaire *database *interval *experiment *plot *ordered pair *coordinate grid *origin *line graph
*line segment

** If the class work is not completed during class time, must be done for homework.

I have read and went over this "*STATISTICS AND PROBABILITY (Data Analysis)-Unit 4 Plan (Chapter 4)*" with my child. JazakAllahu khayran

Parent/Guardian name (print)

Parent/Guardian signature

__/__/__ (dd/mm/yyyy)



Address: 14525 127 ST, Edmonton, AB T6V 0B3 Phone: (780) 454-4573

4th Muharram, 1438
September 14, 2018

RE: Chapter 4- Data relationships Information Letter

As-salaamu Alaikum Wa Rahmatu Allahi Wa Barakaatuhu, ("Peace be unto you and so may the mercy of Allah and His blessings"),

Dear Respected Parents and Guardians of Grade 6:

Over the next two weeks, your child will be learning about collecting, displaying, and interpreting data. To collect data, students will create appropriate questions and think about how best to gather the data. Students will collect, organize, and then display data in a variety of ways, depending on the type of data and the purpose of its collection. Once they display a set of data, they will analyze it to look for patterns, make comparisons, draw inferences, predict, and make decisions.

To reinforce the concepts your child is learning at school, you and your child can work on some at-home activities such as these:

- Search databases on the Internet or resource books for information of interest to your child. Examples include hockey statistics (the *Internet Hockey Database*) and favourite movies (the *Internet Movie Database*). Discuss how this data might have been collected.
- Look for line graphs in newspapers, in magazines, and on the Internet. Have your child find the title, labels, scale, and units for each axis. Discuss with your child what the graph represents and what trends it shows.
- Have students create a simple experiment to compare their reading speed with that of other family members. Ask students to record each step they took in the experiment, the results, and their conclusions.

You may want to visit the Nelson website at

<http://www.nelson.com/mathfocus/grade6/student/tryout.html> for more suggestions to help your child learn mathematics and develop a positive attitude toward learning mathematics. As well, you can check the Nelson website for links to other websites that provide online tutorials, math problems, brainteasers, and challenges.

Sincerely,

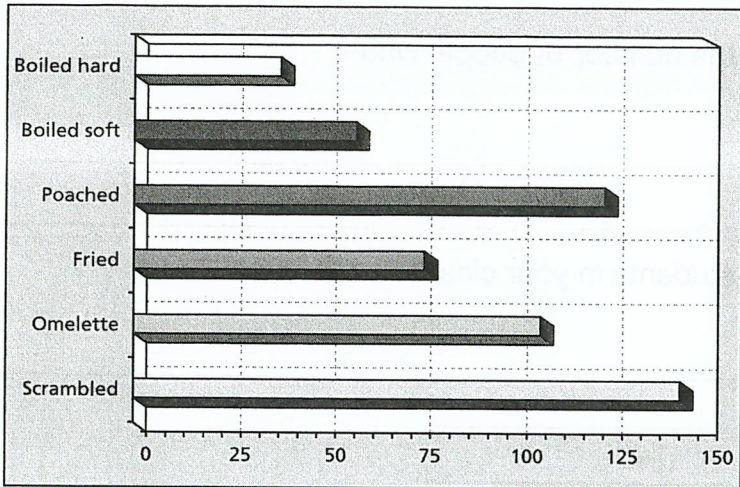
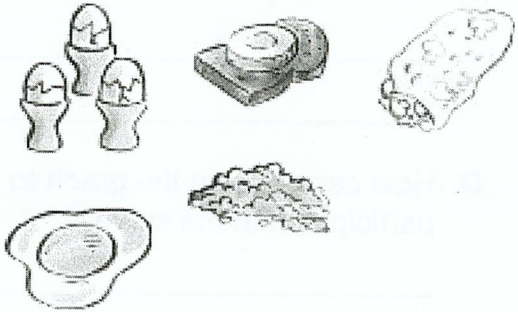
Mustafizur Rahman, **ATA, OPC, OCT**
Ed.D (candidate), **MEd, BEd, BSc**
Grade 6 Math // 6C: Art & Health

Scaffolding for Getting Started Page 1

IDENT BOOK PAGES 110-111

Cracking Data

A group of egg farmers conducted an online survey about cooked eggs. This graph shows some of their results.



? What are some other ways to display similar data?

A. What survey question do you think the egg farmers asked? What kind of question would people respond to by describing one way to cook an egg? Explain your thinking.

B. Does the graph show **first-hand data** (data collected yourself) or **second-hand data** (data collected by someone else and given to you)? Explain how you know.

Scaffolding for Getting Started Page 2

STUDENT BOOK PAGES 110-111

C. How could you improve the graph?

D. How can you use the graph to estimate the number of people who participated in the survey?

E. Conduct a survey about eggs using the students in your class. Record your data in a tally chart.

Question: _____

Response	Tally

F. Display your data in a pictograph, a bar graph, a double-bar graph, or a Venn diagram. If you used a **scale**, describe it and explain why you chose it.

Name: _____ Date: _____

Mid-Chapter Review—Frequently Asked Questions

STUDENT BOOK PAGE 124

Q: How can you choose a method to collect data?

A: _____

Q: How can you plot a point on a grid using ordered pairs?

A: _____

Name: _____ Date: _____

Chapter Review—Frequently Asked Questions

STUDENT BOOK PAGE 139

Q: How can you choose a graph to display collected data?

A: _____

Q: When is a line graph the best way to show data?

A: _____

Chapter 4 Task Page 1

Canada Through the Years

STUDENT BOOK PAGE 143

Your school has been asked to create a display for your local library showing how Canada has changed through the years. You want to make the display as interesting as possible.

? How can you use data to show changes?

Read the Task Checklist before you begin.

Task Checklist

- Was your question clear?
- Did you include all the important parts of your graph?
- Did you explain your thinking?

A. Create a questionnaire to help you find out what people would like to learn about how Canada has changed. Ask a variety of people to complete your questionnaire. What did you find out?

1. Question:

- Choice A:
- Choice B:
- Choice C:
- Choice D:

2. Question:

- Choice A:
- Choice B:
- Choice C:
- Choice D:

B. Use the results of your questionnaire to choose a topic to research. Create a question about this topic that you can answer.

Name: _____ Date: _____

Chapter 4 Task Page 2

Canada Through the Years

STUDENT BOOK PAGE 143

- C. Choose a method for collecting data to answer your question.
Explain your choice.

- D. Collect the data to answer your question. Record and display it.
Explain why you chose the display you did.

Name: _____ Date: _____

Chapter 4 Task Page 3

Canada Through the Years

STUDENT BOOK PAGE 143

How did you display your data? Why?

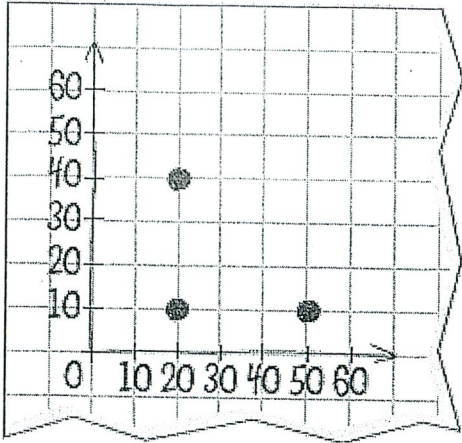
E. Write a report telling what you learned about how Canada has changed.



Unit: STATISTICS AND PROBABILITY (Data Analysis)
Chapter 4: Data relationships

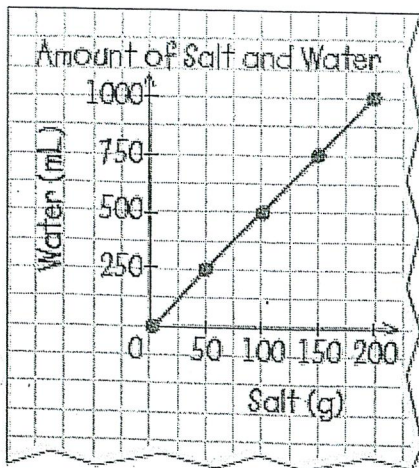
Journal Questions (Hint: Make sure to show all your work.):

1. Marcy is plotting points to make a square, as shown at the left. Which point should she plot next?
A. (50, 50) B. (50, 40) C. (40, 10) D. (40, 50)



2. Which would be the most efficient way to collect data about the types of video games your classmates prefer?
A. questionnaire B. observation C. interviews D. database

3. The graph at the right shows how much salt you should add to water if you want to make an egg float. How much salt should you add to 750 mL of water?
A. 125 g B. 100 g C. 150 g D. 200 g





Unit: STATISTICS AND PROBABILITY (Data Analysis)

Chapter 4: Data relationships

Chapter Task: Canada Through the Years

A. For example, I asked, “What kind of changes in Canada would you like to learn about?”

- changing people
- changing places
- changing arts
- changing technology

I surveyed 30 people. I put the results in a data chart.

What kind of changes in Canada would you like to learn about?

People	Places	Arts	Technology
12	6	9	3

I found out that many people wanted to find out how Canadian people have changed.



Chapter 4: Canada Through the Years

Term: R 1 R 2

Date: ___/___/___ (dd/mm/yyyy)

Name: _____

Assessment type: R D R F R S

Overall: Mark://Level: ___//___; Class Average: ___ Parent Signature: _____

Criteria	Level	Excellent Level 4	Proficient Level 3 79% 72% 65%	Adequate Level 2	Limited* Level 1	Insufficient/ Blank*
Prompts A, B & C SP2. Select, justify, and use appropriate methods of collecting data, including <ul style="list-style-type: none"> • questionnaires • experiments • databases • electronic media. [C, PS, T]		<ul style="list-style-type: none"> • develops a thorough plan for solving the problem • chooses an efficient and effective strategy; may demonstrate creativity and innovation in his/her approach 	<ul style="list-style-type: none"> • develops a workable plan for solving the problem • chooses an appropriate and workable strategy 	<ul style="list-style-type: none"> • develops a basic plan for solving the problem • chooses a simplistic and/or routine strategy 	<ul style="list-style-type: none"> • develops a minimal and/or flawed plan for solving the problem • chooses an inappropriate or unworkable strategy 	No score is awarded because there is insufficient evidence of student performance based on the requirements of the assessment task.
	Prompts D & E SP3. Graph collected data and analyze the graph to solve problems. [C, CN, PS]	<ul style="list-style-type: none"> • provides a precise and insightful explanation of mathematical concepts and/or procedures • organizes and displays results in effective and clear ways that enhance interpretation 	<ul style="list-style-type: none"> • provides a clear and logical explanation of mathematical concepts and/or procedures • organizes and displays results in appropriate and reasonably clear ways that assist interpretation 	<ul style="list-style-type: none"> • provides a partially clear explanation of mathematical concepts and/or procedures • organizes and displays results in somewhat appropriate and partially clear ways that make inferring necessary by the reader 	<ul style="list-style-type: none"> • provides a vague and/or inaccurate explanation of mathematical concepts and/or procedures • organizes and displays results in haphazard and/or unclear ways that impede interpretation 	
Days Late	(_/2) (_/1)	0	1	2	3++	--Not Hand In

Teacher's Comments - Area for Growth and Action Plans (if below "Level 2"):

please use the given time in the classroom wisely by asking questions to further clarify the assignment or focus on the task at hand. Also, you need to follow the sample work shown in the class (if applicable) as a guideline to achieve level 3 in this rubric.

Chapter 4: Data Relationships

First-hand data is data collected by you. **Second-hand data** is data that other people have collected. You can collect first-hand data using a variety of methods, including interviews, surveys, experiments, and observations.

1. Would you use first-hand data or second-hand data to answer each question? Explain your choice.

a) What is the favourite activity among Canadian children?

b) How many students in your class exercise every day?

2. a) Suppose you want to gather data to compare three NHL teams. Write a question you can answer using second-hand data.

b) Explain why you should use second-hand data to answer your question.

3. a) Write a question you can answer using first-hand data.

b) Explain why you should use first-hand data to answer your question.

Double-Bar Graphs

To construct a double-bar graph

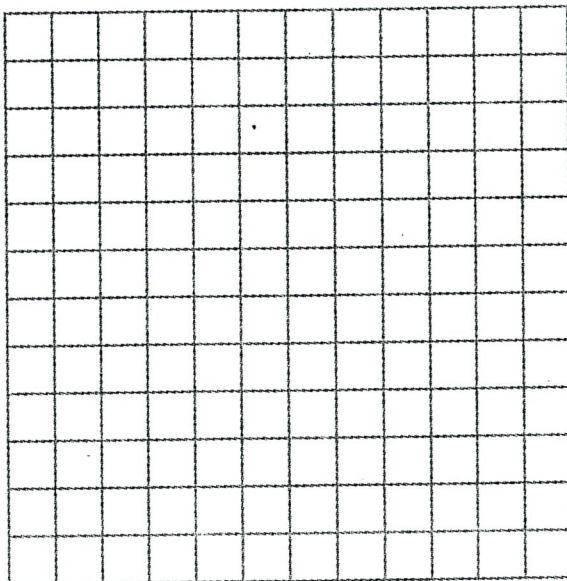
- decide if the data are appropriate for a double-bar graph
- decide whether to use vertical or horizontal bars
- create a legend
- choose a scale so the bars will fit
- use skip counting to label the numbers

4. Éric asked Grade 5 and Grade 6 students which type of music is their favourite. His results are shown in the chart.

Favourite Type of Music

	Pop	Hip hop	Alternative	Classical
Grade 5	40	23	12	6
Grade 6	32	27	15	4

a) Make a double-bar graph to display the data.



b) What scale did you use? Explain your choice.

Chapter 4 Self-Assessment: Lesson Goals

Place a check mark in the box that best describes your work.

Lesson Goals	Yes, on my own	Yes, with help	Sometimes/ Not sure	Not yet
I can create a questionnaire, and use the results to answer a question.				
I can answer a question by using data from databases.				
I can design and perform an experiment to answer a question.				
I can describe relationships between points on a coordinate grid.				
I can interpret and compare line graphs.				
I can construct and interpret line graphs.				
I can communicate about how data are collected and displayed.				
<p>Choose one of your answers from above. Give your evidence.</p> <p>My evidence for _____ is</p> <p>_____</p> <p>_____</p> <p>_____</p>				

