

GRADE FIVE MATH: STATISTICS LONG RANGE PLANNING - CESD

Please note:

- These documents may be used to **support planning** for the [Grade 5 math curriculum](#). [En Francais](#)
- Financial Literacy has been included here in order to share opportunities for **cross-curricular connections**.
- These documents **will be updated throughout the year**, aligning with the *suggested* [Grade 5 Long Range Plan](#). [En Francais](#)
- All included resources are available **at no cost**, however some may require you to download from an outside source.
- Resources from the New [Learn Alberta website](#) will require you to login with your google email to access them.

Organizing Ideas:

In order to reduce the size of these documents, each of the Organizing Ideas have their own documents, which you can access below.

- [Grade 5 Math - NUMBER - Long Range Planning-CESD](#)
- [Grade 5 Math - ALGEBRA - Long Range Planning-CESD](#)
- [Grade 5 Math - GEOMETRY - Long Range Planning-CESD](#)
- [Grade 5 Math - COORDINATE GEOMETRY - Long Range Planning-CESD](#)
- [Grade 5 Math - MEASUREMENT - Long Range Planning-CESD](#)
- [Grade 5 Math - PATTERNS - Long Range Planning-CESD](#)
- [Grade 5 Math - STATISTICS - Long Range Planning-CESD](#)
- [Grade 5 Math - FINANCIAL LITERACY - Long Range Planning-CESD](#)

Vocabulary Legend:

Student language - Important to know

NEW to Grade

Student language

NEW to Grade

Tier 2 words*

Hyperlinked with example or definition

(Professional Language - for the teacher)

Resource Legend:



Teacher Lesson plan



A book in Learning Services or IMC



Video



Printable

ARPD SUPPORTING DOCUMENTS

[Statistics Scope and Sequence K-6](#)

This resource provides the Scope and Sequence of outcomes for the Organizational Idea Statistics for Alberta K-6 Mathematics.

Misc

- [Grades 4-6 Resources to Support the Teaching and Learning of Math Verbs](#)

Curriculum Planning and Assessment Resources

- [Statistics](#)

REMEMBER

Rote memorization focuses on memorizing facts in isolation. This often leads to the belief that math is about memorization and seldom leads to long term retention.

Fluency with facts is developed when students are provided with many opportunities to

- work with facts in a variety of situations, using a variety of models and manipulatives
- connect unknown facts to known facts
- explore patterns within the facts

Other

Important note about LearnAlberta Resources

In order to access LearnAlberta resources, *you must be logged into your LearnAlberta account and have added your teacher certificate number*. If you have not logged in or you have not added your teacher certificate number, you will end up with a "Page not found" error when clicking on one of the links.


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Other:

[Math Tasks/Manipulatives/Resources](#)

General Manipulatives

Relational Rods

-  Relational Rods
 - Slide 1: Each of these 4 images show the number of relational rods in one bag.
 - Slide 2: Images of the relational rods that can be printed or used when making slideshows or handouts.
- [Polypad](#) (make a teacher account and make a copy!)
 - This is a simple interactive page that displays each relational rod that is infinitely cloned.

Assessment

Students need opportunities to demonstrate conceptual understanding in a variety of ways, both in formative and summative situations. High quality assessment practices provide opportunities for this when data is triangulated through observations, conversations and product.

Two book series that focus on identifying and analyzing student misconceptions are:

- “Uncovering Student Thinking About Mathematics” Cheryl Rose Tobey et al.
 - In the Common Core Grades 3-6: [Alberta Grades 3-6 alignment guide](#)
 - Grades K-8: [Alberta K-6 alignment guide](#)
- “Mine the Gap for Mathematical Understanding” by John SanGiovanni et al.
 - Grades 3-5: [Alberta Grades 3-6 alignment guide](#)
 - Grades 6-8: [Alberta Grades 4-6 alignment guide](#)

**GRADE FIVE MATH: STATISTICS
LONG RANGE PLANNING - CESD**

Statistics (ST)

The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

5ST1 Students analyze frequency in categorical data.

UNDERSTANDINGS	KNOWLEDGE	SKILLS & PROCEDURES
<p>1. Frequency is a count of categorized data, but it is not the data value itself.</p>	<p>1. Frequency can be compared across categories to answer statistical questions. 2. The mode is the category with the highest frequency.</p>	<p>1. Examine categorized data in tables and graphs. 2. Determine frequency for each category of a set of data by counting individual data points. 3. Identify the mode in various representations of data. 4. Recognize data sets with no mode, one mode, or multiple modes. 5. Justify possible answers to a statistical question using mode.</p>
<p>1. Frequency can be a count of categorized responses to a question. 2. Frequency can be used to summarize data. 3. Frequency can be represented in various forms.</p>	<p>1. Data can be collected by asking closed-list and open-ended questions. 2. Closed-list response survey questions provide a list of possible responses. 3. Open-ended response survey questions allow any response. 4. Survey responses can be categorized in various ways. 5. Representations of frequency can include</p> <ul style="list-style-type: none"> • bar graphs • dot plots • stem-and-leaf plots 	<p>1. Discuss potential categories for open-ended response survey questions and closed-list response survey questions in relation to the same statistical question. 2. Formulate closed-list response survey questions to collect data to answer a statistical question. 3. Categorize data collected from a closed-list response survey. 4. Organize counts of categorized data in a frequency table. 5. Create various representations of data, including with technology, to interpret frequency.</p>

SPECIAL CARE AND ATTENTION

VOCABULARY

Analyze	Compare	Dot plot	Interpret	Representation
Answer	Count	Examine	Justify	Statistical questions
Bar graph	Create	Formulate	Mode	Stem-and-leaf plots
Categorized data / Categories	Data points	Frequency / Frequency table	Open-ended questions	Summarize
Closed-list questions	Data sets	Graphs	Organize	Survey
Collect	Determine	Identify	Recognize	Table
	Discuss			Value

ASSESSMENTS

Formative Assessment

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INSTRUCTION

High Leverage Instructional Strategies / Practices

-

Learning Experiences

Warmups

-



Math Tasks ([Collated by CBE](#))

- Frequency

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- [Letter Frequency \(Alphabet probability\)](#) A multi-lesson activity examining the frequency in which letters appear in common text found in the classroom or library. This can help strengthen an ability to determine frequency of a category within a set of data by counting/collecting data points.
- [Beans and Scoops](#) An activity examining the frequency of different variables when sampling a larger population. Note | The concept of median is not part of the learning outcome in Grade 5.
- [Strength in Numbers](#) Student data is collected based on estimations and frequency of responses is recorded in graphs. The student results can be used as an opportunity to discuss mode. Note | Slide 13 discusses the concepts of mean and median, which are not part of this learning outcome in Grade 5 and can be omitted from the activity.
- Open-ended and closed-list questions
 - [Reaction Timer](#) A hands-on task aimed at collecting data in real time to help develop an understanding of frequency and the various ways to represent data.
 - [The Lives of Presidents](#) This task examines the relationship between statistical data and wonderings students have about the data. A unique connection between readily available data and the idea that data can be collected by asking closed-list and open-ended questions.
 - [Real Statistics](#) This task will develop an understanding of how frequency can be used to summarize data collected through closed-list questions. Open-ended questions are provided in the task to encourage students to consider possible reasons for trends.

Learning

-  CoreKnowledge Math Units: (This is an amazing in-depth free resource.)
 - [Measuring Length, Time, Liquid Volume, and Weight](#)
 - Focus:
 - Measurement Data on Line Plots (5N5, 5ST1)
 - Note: Line Plots are not part of AB curriculum but you could remake them into graphs we would use - or show the connection to dot plots which is in this outcome.
 - ~~Weight and Liquid Volume~~ (Grade 6)
 - ~~Problems Involving Time~~ (Grade 3)
 - Measurement Problems in Context (There might be some related to this grade)
 - If you download the entire unit, you will find
 - Teacher Guide: lesson plans, student tasks, family support materials, assessments, cool downs, and instructional masters.
 - Student Book: Student Tasks
 - Other: PowerPoints
-  Edmonton Catholic's Curriculum Crates: These are amazing in-depth resources.
 - [\(FI\) Gr 5 Maths- La fréquence et les questions ouvertes](#)
 - [\(FI\) Gr. 5 Math - Diagramme à tiges et à feuilles \(septembre\)](#)
 - [Gr. 5 Math Lesson 1 Students examine the effect of motivation on physical activity](#)
 - [Gr. 5 Maths Lesson 2 Students examine the effect of motivation on physical activity](#)
 - [Gr. 5 Maths PEW Cultural Sources of Nutrition](#)
 - [Gr. 5 Maths Stem and Leaf Plot September](#)
 - [Gr. 5 Maths Students analyze frequency in categorical data](#)
- [5.9 LS3 Day 1 Line Plots BLM Examples](#)

Gizmos on LearnAlberta

- [Graphing Skills \(Bar, Line, Pie and Scatter Plot\)](#) Students analyze and create graphs, specifically working with bar graphs, line graphs, pie charts, and scatter plots.
 - [Teacher version with answer key](#)
- [Mascot Election \(Pictographs and Bar Graphs\)](#) Students learn to read and interpret tally charts, pictographs, and bar graphs.
 - [Teacher version with answer key](#)

Opportunities to Connect Outcomes:

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Resources

Books

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INDIGENOUS RESOURCES

**GRADE FIVE MATH: STATISTICS
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From ARPDC

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PROFESSIONAL LEARNING

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