1 STATISTICS

GRADE ONE MATH: STATISTICS
LONG RANGE PLANNING - CESD

Please note:

- This document may be used to **support planning** for the Grade 1 math curriculum. En Francais
- Financial Literacy has been included here in order to share opportunities for **cross-curricular connections**.
- This document **will be updated throughout the year,** aligning with the *suggested* Grade 1 Long Range Plan. En Francais
- All included resources are **free**, however some may require you to download from an outside source.
- Resources from the Learn Alberta website will require you to login with your google email to access them.

Organizing Ideas:

- Grade 1 Math - NUMBER - Long Range Planning-CESD
- Grade 1 Math - GEOMETRY - Long Range Planning-CESD
- Grade 1 Math - MEASUREMENT - Long Range Planning-CESD
- Grade 1 Math - PATTERNS - Long Range Planning-CESD
- Grade 1 Math - TIME - Long Range Planning-CESD
- Grade 1 Math - STATISTICS - Long Range Planning-CESD
- Grade 1 Math - FINANCIAL LITERACY - Long Range Planning-CESD

Learning Outcomes:
Moved to tabs on left.

- 1ST1 Students investigate and represent data. *Updated February 25, 2025*

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

APLC 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. Webinars • Session 5: "This session was recorded on April 18, 2023." Teaching Combined Classes Webinar Teaching and Learning of Math Verbs Single Point Rubrics • One Point Rubric (Contains Gr ¾ examples) • Single Point Rubric Explanation and Examples
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

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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.

Mathology Kits
Every school in CESD received either one or two Grade 1 Mathology kits. French Immersion schools also received 1 kit.

- These kits are a supplementary kit, and are not intended to be your sole mathematics resource (as is the case with any resource you use).
- These kits are aligned to Alberta curriculum, however, it is still your responsibility to ensure that each activity matches, in case there are errors. (As is the case with any resource you use.)
- Blackline masters can be downloaded from the Pearson website. Make sure you are choosing the Alberta versions! I've also downloaded the Line Masters and placed them within the Grade 1 PLC shared drive. Purchasing schools are allowed to use, print and edit these files. Since every school with Grade 1 received the kits, this shouldn't be an issue around copyright. Please do NOT share them with teachers outside of CESD. Direct them to the Pearson website instead.
- Learning Services will update the Grade 1 Long Range Planning documents with references to the Mathology Kit so you can easily determine where connections exist.
- Access the video from the google meet where we explored the kit here.

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 K-2: Alberta K-3 alignment guide
  - Grades K-8: Alberta K-6 alignment guide
- "Mine the Gap for Mathematical Understanding" by John SanGiovanni et al.
  - Grades K-2: Alberta Grades 1-4 alignment guide

1ST1 investigate and represent data

GRADE ONE MATH: 1ST1
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Statistics (ST)
The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

1ST1 Students investigate and represent data.

UNDERSTANDINGS	KNOWLEDGE	SKILLS & PROCEDURES
1. Data can be answers to questions.	1. Data can be collected information.	1. Share wonderings about people, things, events, or experiences. 2. Gather data by sharing answers to questions.
UNDERSTANDINGS	**KNOWLEDGE**	**KNOWLEDGE**
1. Data can be represented in a graph.	1. A graph is a visual representation of data. 2. A graph can represent data by using objects, pictures, or numbers.	1. Collaborate to construct a concrete graph using data collected in the learning environment 2. Create a pictograph from a concrete graph.

SPECIAL CARE AND ATTENTION

VOCABULARY

Answers* Create **Graph** **Questions** **Share**
Collaborate **Data** **Information** Represent **Visual representation**
Concrete graph **Gather** **Pictograph**

ASSESSMENTS

Formative Assessment
- To what extent are students able to answer simple questions about concrete graphs?

INSTRUCTION

High Leverage Instructional Strategies / Practices
- Provide many opportunities for students to organize, represent and interpret data in concrete forms before progressing to pictographs.

Learning Experiences
APLC
- Curriculum Planning and Assessment Resources
  - Statistics
- Indigenous Culture Based Learning

Warmup
- G1S1 Math WarmUps/MathTalks (Red Deer Public) FRENCH G1S1 Math WarmUps/MathTalks

Learning
- CESD - Teacher Created Resources
  - CESD Lesson Ideas from working group
  - "The cars that pass" recording sheet: English, Les autos qui passent
  - "Birthday graph" English, French
- CoreKnowledge Math Units: (This is an amazing in-depth free resource.)
  - Adding, Subtracting, and Working with Data
    - Focus:
      - Add and Subtract within 10 (1N2)
      - Show us your data

        - What does the data tell us?
    - Adding, Subtracting, and Working with Data
        - Focus:
            - Add and Subtract Within 20 (1N2)
            - Ways to Represent Data
            - Diagrams to Compare
    - 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.
    - Gr 1 Maths Investigate and represent data (Indigenous content)
    - (FI) Gr. 1 Maths- investigate and represent data (Indigenous content)

- Give 5 students each a unifix cube (one of two colours - ie. 3 students get red and 2 get blue). These students then bring them up and clip them together so you have created a concrete graph that everyone can see. Ask questions like: How many altogether? How many in each category? Which has more? How much more? Which has the least? How much less
- Create addition equations following the same progression as LO2 (verbal, teacher writes, students create).
- Provide each student with 5 cubes with two different colors. Have them answer the same questions in partners. Write all the equations on the board. Discuss.
- Give each student a unifix cube and ask a question with only 2 possible answers. (ie. Would you rather eat a sandwich or have soup for lunch?) Students use the unifix cubes to vote. Create the concrete graph by clicking them together. Discuss, using the same questions as before. Writing out addition and subtraction equations as this would be above expectations.
- Graph student responses to questions such as hair color, toy preference, how to get to school, etc. examples
    - Weather graphing (Free TPT)
    - "How long is your name" graphing activity based on book Chrysanthemum by Kevin Henkes (free from outside source)

Math Tasks (Collated by CBE)

- Investigating and representing data
    - Representing Data: Another Open Middle problem to create a graph that meets certain constraints. Note | This is a challenging problem that could be explored using concrete graphs
    - Interpreting Graphs: An Open Middle problem that uses the digits 1-6 to fill in the blanks and make the statements about the graph true. Note | This is a challenging problem that could be explored using concrete graphs.
    - Ladybird Count: This task provides students with some data to explore and prompts for students to share their noticings and questions.

Opportunities to Connect Outcomes:

- Connect to composing and decomposing numbers. (1N1)
- Connect to addition and subtraction. (1N2)
- Connect to money by having students sort two types of coins/bills and graph the results. (1F1)

Resources

Books

- Hedge and Hog (Mathology) Student, Student - French, Student - BIG, Teacher Guide, Teacher Guide - French
- That's 10! (Mathology) Student, Student-French, Teacher Guide, Teacher Guide-French
- Big Buddy Days (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French
- Canada's Oldest Sport (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French
- Graph It! (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French

INDIGENOUS RESOURCES

From ARPDC

- Pulled directly from Infusing Indigenous Knowledge Into Curriculum
    - Survey other classes on a chosen topic.
    - Survey the insects on the playground.

PROFESSIONAL LEARNING

Ideas

- How to teach graphing and data in first grade // graphing and data activities *Introducing graphing*