Kdg PATTERNS

KINDERGARTEN MATH: PATTERNS
LONG RANGE PLANNING - CESD

Please note:

- This document may be used to **support planning** for the Kindergarten 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* Kindergarten 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:

- **Kdg Math - NUMBER - Long Range Planning-CESD**
- **Kdg Math - GEOMETRY - Long Range Planning-CESD**
- **Kdg Math - MEASUREMENT - Long Range Planning-CESD**
- **Kdg Math - PATTERNS - Long Range Planning-CESD**
- **Kdg Math - TIME - Long Range Planning-CESD**
- **Kdg Math - FINANCIAL LITERACY - Long Range Planning-CESD**

Learning Outcomes:
Moved to tabs on left.

- KP1 Children identify and create repeating patterns. *Updated October 30, 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

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

Teaching Combined Classes Webinar

Teaching and Learning of Math Verbs

Webinar Series: Planning for Startup in the new Kindergarten Math Series

- Session 1: The first of 5 sessions. This presentation covers planning for the Months of September/October and includes money, manipulatives, subitizing cards, and shapes. Facilitated and recorded August 22, 2022
- Session 2: This Session 2 of a 5 part series and focuses planning for November/December. It discusses Kindergarten math outcomes and concepts (money) and how they link to assessment. This video was recorded on October 12, 2022.
- Session 3: In session 3 of this series Kindergarten Math outcomes and concepts relating to counting (counting to 10 specifically) are explored. This video was recorded on November 23, 2022.
- Session 4: Session 4 focuses on planning for February – April and explores: Measurement Principles, Counting, Number Lines, 2D Shapes. This session was recorded on February 13, 2023.

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.

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.

The following 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

KP1 identify and create repeating patterns

KINDERGARTEN MATH: KP1
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Patterns (P)
Awareness of patterns supports problem solving in various situations.

KP1 Children identify and create repeating patterns.

UNDERSTANDINGS	KNOWLEDGE	SKILLS & PROCEDURES
1. A pattern is characterized by how the elements change or remain constant.	1. Patterns exist everywhere. 2. A pattern can involve elements such as a. sounds b. objects c. pictures d. symbols e. actions 3. Repeating patterns have one or more elements that repeat.	1. Recognize repeating patterns encountered in daily routines and play, including songs or dances. 2. Recognize change or constancy between elements in a repeating pattern. 3. Predict the next elements in a repeating pattern. 4. Create a repeating pattern with up to three repeating elements.

SPECIAL CARE AND ATTENTION

VOCABULARY

Actions **Change** **(Constant / Constancy)** **Create** **Elements*** **Objects** **Pattern** **Pictures** **Predict** **Recognize** **Repeat** **Repeating pattern** **Sounds** **(Symbols)**

ASSESSMENTS

Formative Assessment
- Can students replicate a pattern using the same materials? Extend?
- Can students recreate the same pattern using different materials?
- Can students recognize a pattern?
- Can students fix a pattern?

INSTRUCTION

High Leverage Instructional Strategies / Practices
- Use a variety of manipulatives, including square tiles, money, students in the classroom, sounds.
- Have students close their eyes and listen while you make a sound pattern.

Learning Experiences

APLC
- Curriculum Planning and Assessment Resources:
  - Patterns

Warmup
- KP1 Math WarmUps/MathTalks (Red Deer Public) FRENCH KP1 Math WarmUps/MathTalks

Learning
- Edmonton Catholic
  - Pacing Guide
    - Year at a Glance (CESD organized)
    - Year at a Glance (ECSD organized with KUSPs)
    - March:
      - Kindergarten March.pdf (Sound and action)
      - Plans: 24/25: MAR Year Plan 24-25 (K).pdf
      - French Plans: 24/25: MARS Plan annuel 24-25 (M).pdf
    - April:
      - Kindergarten April.pdf
      - Plans: 24/25: APR Year Plan 24-25 (K) .pdf
      - French Plans: 24/25: AVRIL Plan annuel 24-25 (M).pdf

        - June:
            - Plans: Kindergarten June.pdf
            - French Plans: JUIN Plan annuel 24-25 (M).pdf
    - Curriculum Crates: These are amazing in-depth resources.
        - Kinder Math - Children Identify and Create Repeating Patterns (Let the Beat Drop!)
        - Kinder Math - Children identify and create repeating patterns (Playing with Patterns)
- Create a pattern. Have students duplicate it (either directly above yours - using one to one correspondence or in front of them). Have them close their eyes and
    - turn a piece so it is noticeably different. Can they find the change and fix it?
    - Replace a piece with one of the other elements. Can they find the change and fix it?
    - Remove a piece. Can they place the correct piece?
- Using loose parts or classroom items to create patterns - set up a table, center, station, etc with classroom materials/manipulatives/loose parts and have students make a pattern. You can have pattern cards or pictures of patterns for students to recreate.
    - Students can draw their pattern.
    - Build patterns using playdough
    - Use marshmallows and fingerpaint to create patterns (like a bingo dauber).
    - Use coins and bills to create patterns. (heads/tails, loonie/toonie, etc.)
- Patterns during calendar time - example: Create a pattern as you are adding dates to your calendar. (ie. the 1 is in a square, the 2 is in a circle, the 3 is in a square. Say the pattern on the number cards. Square, circle, square, circle, etc Now put actions to it. For example: whenever you say square, clap your hands once. Whenever you say circle, stomp your feet once. It should go like this: clap, stomp, clap, stomp, clap, stomp while you are saying square, circle, square, circle. Can you think of more actions? Free Shape Calendar Numbers Pattern (TPT Free)
- First Nations, Métis or Inuit connection
    - Metis Weaving - Students can practice weaving using different materials to practice patterning. Basic patterns can be taught through weaving. Think about the process of weaving, over, under, over under, this represents an AB pattern. Students can also investigate the colour patterns. The horizontal patterns may be AB, AB if you go over/under or they could be AAB, AAB if you go over two and under one. The vertical colour patterns can also be examined once the weaving is done. If you use one colour on each row and cycle through three colours in order, this may represent an ABC pattern. The math conversations are endless!
    - NVSD44's Unit Plan: Weaving
    - Weaving with a DIY loom - create a loom using popsicle sticks and string. Give students strips of cloth or paper and have them make a pattern on the loom.

Math Tasks (Collated by CBE)

- Repeating patterns
    - Sorting: Multiple youcubed lessons to sort emojis, shapes and patterns by noticing similarities and differences. Note | Identifying attributes and sorting are foundational skills for identifying and creating patterns
    - Cube Bricks and Daisy Chains: Examples of repeating patterns to use in identifying and describing patterns. The questions in the problem could be used to introduce skip counting using the core of repeating patterns.
    - Repeating Patterns: This NRICH math task offers students the "opportunity to recognize, make and describe repeating patterns of triangles, and then challenges them to create repeating patterns of their own."
    - Patterns in a Circle: Students explore repeating colour patterns in a circle.
    - 1 Pattern = Many Patterns: Challenging picture prompt to engage children in mathematical discussions about replacing elements to complete patterns.
    - Biscuit Decorations: A challenging task that could be solved modelled with concrete materials to explore the pattern.

Opportunities to Connect Outcomes:

- Use pony beads and pipe cleaners to create a pattern for a specific number (ie. 5). Students can then use this to practice composing and decomposing 5. (KN2)

Resources

Books

- We Can Bead! (Mathology) Student, Student - French, Student - BIG, Teacher Guide, Teacher Guide - French
- A Lot of Noise (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French
- The Best in Show (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French
- To Be Long (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French
- Midnight and Snowfall (Mathology) Student, Student - French, Teacher Guide, Teacher Guide - French

IMC Kit

- Pattern/Fraction Blocks

PROFESSIONAL LEARNING

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Learn Alberta Planning Documents:
The following Planning Guide was developed for the 2007 AB Mathematics Program of Studies (PoS). However, the planning process and many of the tasks and assessments still align with the 2022 AB Mathematics Curriculum. Please ensure that the Learning Outcome and Knowledge, Understanding, and Skills and Procedure statements are kept in mind as tasks are selected.

- Repeating Patterns Planning Guide: Step 3 includes sample activities to explore repeating patterns, including one looking at patterns in Indigenous drum songs (Activity #4).
- Repeating Patterns (Gr. 1)