September Grade 1 Curriculum Planning

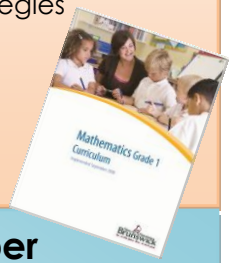
"There is a strongly held belief in the mathematics education community that mathematics is best learned when students are actively engaged in constructing their own understandings. Research is increasingly supportive of this approach." (Marian Small)

The purpose of monthly planning is to help guide instruction while working through the curriculum outcomes. It does not take the place of the **Curriculum Document.** This format is to help students develop a deep understanding of the outcomes. There is a focus on a portion of some outcomes each month. The outcome is revisited throughout the year, a portion at a time, until each outcome is learned in its entirety.

Before teaching each outcome, it is vital to read the **Elaboration** section. It describes the "big ideas" and what students should learn this year in regards to this concept.

Achievement Indicators describe what should be observed to determine whether students have met the specific outcome.

Instructional Strategies/Suggested Activities lists general strategies to assist in teaching this outcome and possible specific activities. There is also a list of various **Whole Class/Group/ Individual Assessment** tasks. The instructional strategies, activities and assessment suggestions from the curriculum document should be the primary source for instruction.



Curriculum Outcomes for September

N1: Say the number sequence, 0 to 100, by:
- **1s forward and backward between any two given numbers (1's to 10 –First Weeks, 1's to 20 after)**
- 2s to 20, forward starting at 0
- 5s and 10s to 100, forward starting at 0. [C, CN, V, ME]

N2: Recognize, at a glance, and name familiar arrangements of 1 to 10 objects or dots. (Only to 5) [C, CN, ME, V]

N3: Demonstrate an understanding of counting by:
- **indicating that the last number said identifies "how many"**
- showing that any set has only one count
- using the counting on strategy
- using parts or equal groups to count sets. **[C, CN, ME, R, V]**

PR1: Demonstrate an understanding of repeating patterns (two to four elements) by:
- **describing**
- **reproducing**
- **extending**
- **creating**

patterns using manipulatives, diagrams, sounds and actions. [C, PS, R, V]

Mathematical Processes

Communication (C): There are several ways students can communicate an understanding of math concepts:
1) Create math stories and record them in various ways
2) Identify, draw, write about, and discuss patterns
3) Write about math ideas in math journals on a daily basis
4) Engage in investigations in which students communicate what they have learned.

Connections (CN): Working with patterns enables students to make connections within mathematics and their environment. Identifying patterns found in their daily lives (ie: days of the week/seasons) and describing these patterns verbally helps students to interpret patterns they experience visually and solidifies their understanding of the concept.

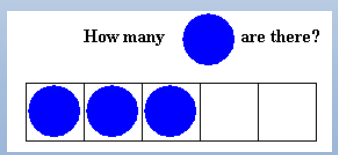
Reasoning (R): Mathematics is about recognizing, describing and working with numerical and non-numerical patterns. Students must learn to recognize, extend, create and use mathematical patterns. Patterns allow students to make predictions and justify their reasoning when solving problems.

Mental Mathematics and Estimation (ME): Subitizing is the ability to recognize the number in a set based on how they are organized. For example, when you roll a five on a die, you don't count the dots; you use the pattern to know what you rolled. This skill is an important foundation for many Mental Math skills.

Problem Solving (PS): A student's earliest experience with mathematics is through solving problems. Engage in open-ended journal questions and investigations on a daily basis to allow students to work through the problem and show their mathematical thinking.

Technology (T): Technology contributes to a learning environment in which the growing curiosity of students can lead to rich mathematical discoveries. The Smart Board **can assist in whole class activities such as the Days of school count and games.**

Visualization (V): Days of School count, Calendar binders as well as Five-Frame flash and dot cards will engage students in visualizing numbers in a variety of ways.



For Your Information

Days of School
Every day, as a class led by the teacher, the students count how many days they have been to school, adding a number to a chart each day. The classroom could include charts that show the number of days in base ten blocks, that number on a number line, that many stars on a chart, etc. The Smart Board lesson (District 8 Math Portal) will assist in discussions of the day count.

Calendar Binder
Each student is provided with a calendar binder in which they will record the number of days of school in a variety of ways. The teacher will probably need to spend a week or two with the students completing this daily record at the beginning of the year in order to establish the routine. Eventually this activity will be done quickly and independent of the teacher. (Binder insert pages District 8 Portal)

Investigations, Discussions and Journaling
Students engage in mathematical investigations in order to attempt to solve problems. They discuss their ideas with each other and as a class. Students reflect on their ideas by writing and drawing about them in journals. Teachers may wish to circulate around the classroom as students are writing to oversee written ideas in order to formatively assess student comprehension. (See Fosnot Investigative Kits for great ideas!)

Literature Connections

Students' early understanding of saying the number sequence and counting can be reinforced through literature. Here are two great books: *The Wonderful Pigs of Jillian Jiggs* by Phoebe Gilman and *Two Ways to Count to Ten* by Dee.

Problem of the Day/Math Stories

These open ended problems allow students to develop a conceptual understanding of addition and subtraction. The symbols can be introduced by saying "A quick way to write "five blue fish and three red fish is eight fish", is 5 + 3 = 8. That's how mathematicians, like you, do it!"
(See the Math Workshop on the District 8 Portal)

Investigation Ideas

Place cube-a-links at one table, pattern blocks at one table, attribute blocks at one table, base ten blocks at one table, money at one table. Have students go to centers to make patterns. Share patterns and name them as AB,ABB,ABC, ABBC patterns. (PR1)

Place cube-a-links at one table, pattern blocks at one table, attribute blocks at one table, base ten blocks at one table, money at one table. Have students go to centers to make patterns with errors. As students move to a new center, ask them to see if they can see the error in the pattern at the new center. (PR1)

Graffiti Map: Divide large pieces of paper into four sections, write AB in one section, ABB in another, ABC, AABB. Have students make a pattern to make each "Pattern Name".(PR1)

Investigate creating different patterns using fruit loops cereal (necklace or on table) (PR1)

Counter Drop Investigation: Students count out ten- 2 sided counters (can be differentiated for less). Student will drop counters and record how many of each colour. (N3)

Show 10 using pictures, models, and words on a Graffiti Map (see portal for Graffiti Map template) (N3)

Hand Estimation Investigation- How many units will fit on your hand? (N3)

For each of the numbers 1 to 10, have students find objects in the classroom that represent that number. (e.g. eight – there are eight windows in the classroom, four there are four students wearing glasses) (Learn Alberta) (N3)

Journal Ideas

Create a pattern with one error and circle the error with a red crayon. (PR1)

Draw the number of cube-a-links you can pick up in one hand. Show how you counted them. (N3)

Show 10 in as many ways as you can. (N4)

What is your favourite number? Why? (N4)

Make an ABC pattern using stickers, bingo dabbers, stamps and name it. (PR1)

Build a tower that is one more than 9. Draw it in your journal. Build a tower that is two less than five. Draw it in your journal. (N1)

In my bowl I have apples and bananas. There are seven pieces of fruit. How many apples are there? Draw a picture of the fruit. (N1, N3)

Interesting Websites

http://www.learnalberta.ca/MyFolderWebLink.aspx?FolderID=600&lang=en (Curriculum Planning Guides)
http://www.jmeacham.com/calendar/calendar.htm (Mrs. Meacham's Calendar Math)
https://portal.nbed.nb.ca/sites/district08/math8/Pages/,DanaInfo=portal.nbed.nb.ca,SSL+Grade%201.aspx (District 8 Portal Site for Grade 1: Math Stories, Days of School, Calendar Binder insert pages, Subitizing Smart Lessons)

Game Ideas

Fill Ten Frame Game - Students take turns rolling a dice and filling a ten frame. Student must roll exact amount needed to fill the frame. (N1, N2, N3)
Partner Pull - In pairs, students take a group of 10 cube-a-links between them (5 of 1 colour and 5 of another). Each partner pulls one side. One partner will hide what they pull and the other partner will determine what is behind their partner's hand by looking at how many cubes they have. (N3)
Dot card/Numeral card Memory Game (N1, N2, N3)
Build a Tower - Roll dice and build a tower with connecting cubes. (N3)
Hide the Pattern Rule- one partner can create a pattern with manipulative and then hide part of it under a cup. Their partner must tell them what is missing under the cup. (PR1)
Two Card Flip- one partner has numeral cards the other has dot cards. Each flip a card and see who can count on (from the numeral card) to find the sum of the two cards first. (N1)
Subitizing with a Five Frame and Van de Walle Dot Cards- Display slides for 3 seconds have students record how many dots they saw on individual white boards and ask: "How do you know?" - Smart Lessons on Portal (N2)
Secret Number – Students try to guess the teacher's secret number by asking yes or no questions about the number. (N1, N2)