



November Grade 1 Curriculum Planning



“Do not worry too much about your difficulties in mathematics, I can assure you that mine are still greater.” Albert Einstein

Mental Math- Subitizing

Subitizing is a very efficient strategy to tell how many are in a group without specifically counting each item. It depends on an immediate recognition of arrangements or configurations of certain numbers of items. It is a valuable skill for success in mathematics. For example, most people immediately recognize, or subitize, the arrangements for 1 to 6 as these configurations of dots are commonly used on dice, cards, and other game materials. Grade 1 students are subitizing numbers to 10. Which numbers are immediately recognizable varies with students' experiences. There is a lesson on the portal titled “What is Subitizing” that can be accessed by teachers to help introduce/reinforce this mental math strategy with students. <https://portal.nbed.nb.ca/sites/district08/math8/Pages/Grade%201.aspx>

Curriculum Outcomes for November

N1: Say the number sequence, 0 to 100, by:

- 1s forward and backward between any two given numbers (1's to 100 • Forward by 2s to 20 • 5s to 100 and 10s to 100). [C, CN, V, ME]

Revisit N2: Recognize, at a glance, and name familiar arrangements of 1 to 10 objects or dots. [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]

N4: Represent and describe numbers to 20 concretely, pictorially and symbolically. [C, CN, V]

N5: Compare sets containing up to 20 elements to solve problems using: referents; one-to-one correspondence. [C, CN, R, ME, PS, V]

N7: Demonstrate, concretely and pictorially, how a given number can be represented by a variety of equal groups with and without singles. Focus on numbers to 10 [C, R, V]

N8: Identify the number, up to 20, that is 1 more, 2 more, 1 less and 2 less than a given number. [C, CN, ME, R, V]

PR2: Translate repeating patterns from one representation to another. [C,R,V]

Mathematical Processes

Communication (C): Opportunities to explain students thinking and reasoning through questions and discussion will strengthen their connections and deepen their sense of number concepts.

Connections (CN): Number sense develops naturally as students connect numbers to their own real life experiences and use numbers as benchmarks and referents. Making connections is the heart of doing mathematics. With larger numbers, students will make connections to their prior knowledge and experiences working with smaller numbers. They will make connections with other mathematical concepts and procedures. As well, students will make connections with their daily life experiences and see connections with mathematics across the curriculum. As students make these connections, they will build a deeper, richer understanding of number concepts.

Reasoning (R): Good questions to help students develop reasoning skills include: Why do you think it happened? Does anyone have a different reason? What is it? Will this always happen? Why do you think that? How are these alike? Different? What would happen if...?

Mental Mathematics and Estimation (ME): To avoid the misconception that an arrangement can only represent a specific quantity if it is arranged in a certain way, it is very important to vary the orientation of the objects, dots, or pictures.



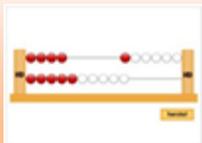
Problem Solving (PS): While daily word problems help students develop some problem solving strategies, investigations help students problem solve in more complex and realistic mathematical situations.

Technology (T): There is no replacement for hands-on counting work for young children, but technology can provide immediate feedback as well as audio and visual support for learning about numbers.

Visualization (V): Dot cards, ten frames, dice, cards, dominoes, number lines, 100 charts, calendars, and rekenreks will engage students in visualization of numbers in a variety of ways.

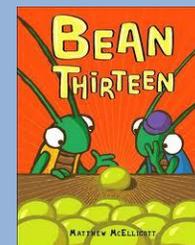
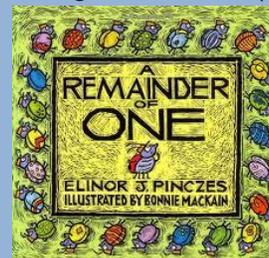
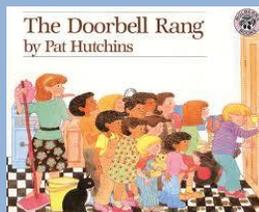
What the Heck is a Rekenrek?

Directly translated, rekenrek means calculating frame, or arithmetic rack. It is used to support the natural mathematical development of children- to encourage children to use strategies like double plus or minus, work with the structure of five, use compensation, and make tens; and to stretch children toward using these strategies in place of counting. See portal for additional information and resources related to rekenreks.



Literature Connections

Read a story such as *Bean Thirteen* by Matthew McElligott, *A Remainder of One* by Elinor J. Pinczes, or *The Doorbell Rang* by Pat Hutchins. Have students act out the story using counters or beans. Give small groups of students each a different collection of counters/beans. Have students organize their materials into groups of 2, 3, 4, 5, etc. and record their findings on a chart. (N7)



Investigation Ideas

Solve the Mystery- MMS Unit 2 Teacher's Guide p.60-64 (PR2, N3, N2)

Monkeys at the Zoo- Tell students, "There are 15 monkeys at the zoo. Where they live, there is one big tree and one small tree. When it rains, the monkeys like to climb up a tree. One day when I visited the zoo, all the monkeys were in the trees. How many monkeys could be in the big tree and in the small tree? Are there other answers?" Draw two trees on the board and have construction paper monkeys to place in the trees. Change the position of the monkeys as students offer alternative answers. (N4) See portal.

Journal Ideas

-Prepare a set of pictorial patterns and their letter descriptions. Have students match the picture to the correct letter description. During these learning experiences ask questions such as:

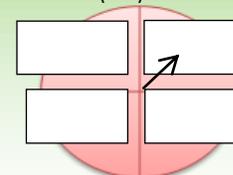
- Can you make a new pattern using the same materials? (PR2)
- What other materials could you use to make the same pattern? (PR2)
- Can you make a sound pattern to match this pattern? (PR2)
- Are the patterns the same? (PR2)
- How is one pattern different from another pattern? (PR2)
- There are 8 pieces of candy hidden under a cup and 4 pieces of candy beside the cup. How would you know how much candy you had in total? Show your thinking. (N3)
- How many ways can you show the number 11? (N7)

Teachers could follow up by reading "12 Ways to Get to 11" by Eve Merriam.



Game Ideas

Bucket Pull- You will need a container with numeral cards 1 to 20, a spinner or teacher-created die. Spin the spinner to determine the game rule (e.g., give the number that is 1 more). Students take turns drawing a numeral card from the container, applying the rule and giving the new number. (N8)

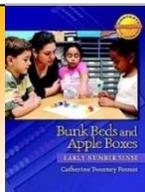


Dice and Dominoes- You will need two (1 to 6) dice and dominoes with totals to 6. Place the dominoes face up on the table. Roll the dice. Be the first to find the domino that matches the dice representation. The player with the greatest number of dominoes is the winner. (N2)

Yes or No - Label two paper bags, one with "Yes" and one with "No." Ask students a yes or no question such as "Do you like strawberries?" To answer the question, students place a cube in either the "Yes" or the "No" bag. The cubes are then counted and the numbers are compared using the comparative language more, fewer, and as many as. (Consider including students from other classes for this activity to compare larger numbers). (N5)

Contexts for Learning Mathematics

Bunk Beds and Apple Boxes
by Catherine Twomey Fosnot



In *Bunk Beds and Apple Boxes* children learn about compensation and equivalence within the context of a pyjama party during which eight excitable girls confound their babysitter by continually changing places on their bunk bed and also in a grocery store where a grocer arranges apples in different-sized trays. The arithmetic rack is introduced as a model for exploring part-whole relations. (N7)

Interesting Websites

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=75>

<https://portal.nbed.nb.ca/sites/district08/math8/Pages/Grade%201.aspx>