



December Grade 1 Curriculum Planning



"The best and most valued assessments happen when teaching and learning are going on."

-Catherine Twomey Fosnot, Young Mathematicians at Work

Curriculum Outcomes December

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]

N3- Demonstrate an understanding of number 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]

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 20**) [C,R,V]

N9- Demonstrate an understanding of addition of numbers with answers to 20 and their corresponding subtraction fact, concretely, pictorially and symbolically by:

- using familiar and mathematical language to describe additive and subtractive action from their experience
- creating and solving problems in context that involve addition and subtraction
- modelling addition and subtraction using a variety of concrete and visual representations, and recording the process symbolically. [C,CN,ME,PS,R,V]

SS2- Sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule. [C,CN,R,V]

SS3- Replicate composite 2-D shapes and 3-D objects. [CN,PS,V]

SS4- Compare 2-D shapes to parts of 3-D objects in the environment. [C,CN,V]

Mathematical Processes

Communication (C): As students use mathematical language such as cube, sphere, cone and faces to describe various shapes in their many hands on experiences, they will move from using informal language such as box to the more formal language. The focus is not on identifying 2-D shapes and 3-D objects but on using the attributes such as number of faces or vertices to compare the various shapes and objects.

Connections (CN): Students should be aware that every time they encounter addition or subtraction situations, the other operation is implied. Teaching addition and subtraction at the same time helps students see the relationship between the operations. For example, for $9 - 5$, think "5 and how many more to make 9?"

Reasoning (R): As students develop mathematically, they are increasingly able to identify and name an object by examining its properties and using reasoning. Use questioning to focus student thinking, for example: "What other shapes are similar to this one?", "In what ways are they alike?", "What does this object look like?"

Mental Mathematics and Estimation (ME): Mental math strategies at this level are highly linked to visualizing a number broken into parts as well as comparing the number to 5 and 10. (For example, 6 is 5 and 1 more; 8 is 2 away from 10). Students need to be given many opportunities to explore these number relationships using concrete and visual materials, such as ten frames, rekenreks and number lines.

Problem Solving (PS): It is important to build on students' natural problem solving inclinations and to preserve and encourage an attitude towards learning that values problem solving. As a teacher, you can capitalize on opportunities that come from rich problem solving experiences by talking with the student and observing, listening to and questioning the student. Be sure to allow students plenty of time to work out the problems and share alternative ways of solving them.

Technology (T): Although it is best to have young students working with physical models when engaged in geometry, computer models that are used to build geometric thinking are very engaging for students. Programs are available that have electronic geoboards and pattern blocks. See National Library of Virtual Manipulatives at http://nlvm.usu.edu/en/nav/category_g_1_t_3.html.

Visualization (V): Sorting and building activities help to develop visual discrimination. Students should be given many opportunities to sort and build 3-D objects using a variety of materials as it increases their visualization skills.

Math Activities/Projects

Roll a Snowperson (see portal)

Students can draw or paint a snowperson but can only use the parts of a snowperson that correspond with the number they roll. (N3)



Hat	1
Head	2
Top Body	3
Bottom Body	4
Eyes & mouth	5
Carrot Nose	6

Snowflake Puzzle (see portal)

The goal for students is to place all of the snowflake cards onto the board. Each time a card is placed it must cover 2 spaces that total the same as the number on the board, e.g. the 13 card could cover 9 and 4. See if you can cover all of the board leaving only the middle square not covered. (HINT: Cards can be paced horizontally or vertically). (N9)

"I Spy" Shapes

Teacher says "I spy with my little eye something that (rolls, slides, is pointy)". Students take turns looking around the room and guessing. Winner gets to take on the teacher's role in the next round. (SS2)

Create an ornament!

Have students build 3-D objects using glittery pipe cleaners and marshmallows. Students will need access to a model. Have students describe their ornament. (SS3)



Shape Riddles

Students write a riddle about a 2-D shape or 3-D object, such as: "I am curvy" or "I can roll". "Who am I?" Students may wish to include a lift up flap that reveals the answer. (SS2)

Investigation Ideas

Count It a Different Way: Fill a container with a quantity, between 1 and 100, of a particular item (e.g. Cheerios). Ask students to count out the objects and record the number found. Ask students "How did you count out the objects?" "Is there another way to count the objects?" After discussing different ways to count the objects (e.g. by 1s, 2s, 5s, 10s) instruct students to do a recount of their objects using a different way than they had used before. Ask "Did you get the same amount? Why? What about if you counted another way?" Students could chart their results on a class chart for whole group discussion. (N3)

Silly Stuff Sale: Set up a store with items priced 5¢ to 9¢. Give each student 20¢ to shop for two items. Students will determine the cost of the two items and how much money they will have left. (N9)

Journal Ideas

- Draw your favourite toys. Count them. How many? (N3)
- How do you know how many without counting by 1s? (N3)
- The answer is ____. What is the question? (N9)
- I had ____ pieces of gum. Mom gave me some more. How many could I have now? (N9)
- Grab some Unifix cubes with both hands. Write a story telling how many you grabbed with each hand. Tell how many more you had in one hand, or tell whether you had the same amount in each. (N9)
- Tell what would happen if you put a sphere on top of a cone. (Substitute other shapes). (SS2)

Spatial Sense

Spatial sense involves visualization, mental imagery and spatial reasoning. It is developed through a variety of experiences and interactions within the environment. This enables students to solve problems involving 3-D objects and 2-D shapes. Students must build their understanding of the attributes or characteristics of 2-D shapes. They should focus on the number of sides and vertices and how shapes can be put together and taken apart to make other shapes. Students should use accurate language when naming shapes. They should be able to distinguish between shapes such as squares and rectangles and also to see that the squares are rectangles. Students need many opportunities to manipulate 3-D objects. They should be encouraged to identify how these objects are alike and how they differ. They may study how many faces and edges the object has. They may identify how some have sides that come to a point or how some might slide while others can roll.

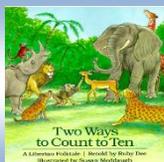
Interesting Websites

<http://www.youtube.com/watch?v=GTyxfltyPgg>
Skip counting 2, 5, 10
http://www.youtube.com/watch?v=srPktd4k_O8
Count down from 20
<http://www.edu.gov.mb.ca/k12/cur/math/games/index.html> (Scroll down for activities for home)

Literacy Links

Two Ways to Count to Ten, Dee 1988

Animals on Board, Stuart J Murphy



Games

Hide the Dots- Students work with a partner using part-part-whole dot cards. One student will hide part of the dots and the other must determine how many dots are unseen. (N7) See portal.

How Many Counters- One player secretly arranges some counters on a ten-frame. The other player asks questions that can be answered yes or no, trying to gain enough clues to work out the arrangement of counters. For example: Is the top row full? Are there 8 counters? Is there an empty box in the bottom row? (N3) See portal.