



# April Curriculum Planning Grade 1



*Encouraging student to defend their answers often yields valuable insight into their thinking.* Reys et al.

Conceptual knowledge of mathematics consists of logical relationships constructed internally and existing in the mind as a network of ideas....By its very nature, conceptual knowledge is knowledge that is understood.

John Van de Walle 2004

## Curriculum Outcomes for April

**N9 (cont'd): Demonstrate an understanding of addition of numbers with answers to 20 and their corresponding subtraction facts, concretely, pictorially and symbolically by:**

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

**N10: Describe and use mental mathematics strategies (memorization not intended), such as:**

- counting on and counting back
- making 1
- doubles
- using addition to subtract

to determine the basic addition facts to 18 and related subtraction facts. [C, CN, ME, PS, R, V]

**SS1: Demonstrate an understanding of measurement as a process of comparing by: identifying attributes that can be compared; ordering objects; making statements of comparison; filling, covering or matching.** [C, CN, PS, R, V]

**N1, N4, N6, N7, N9, and PR3 should be revisited through warm-ups, journaling, and other daily activities.**

## Mental Math (N10)

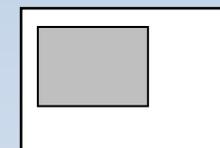
### Thinking Addition for Subtraction

Thinking Addition is one of the most effective strategies for solving subtraction equations. Because many students find subtraction difficult to master, using addition to solve a subtraction equation can make the process easier.

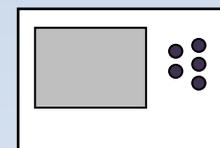
With this strategy, students will learn that there is an inverse relationship between the operations of addition and subtraction. Students will use known addition facts to solve subtraction equations and gain experience with forming fact families. Students will learn that knowing one fact can help them with other related facts.

Using the Think-Addition model for subtraction:

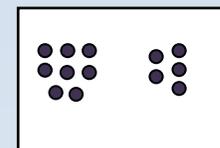
1. Count out 13 counters on the table and cover.



2. Count and remove 5 of the 13 counters. Keep these 5 in view.



3. Say, "Five and what makes thirteen?" (Answer 8) "Right. There are 8 left. So we can say, '13 minus 5 is 8'."



4. Uncover the 8 and say, "8 and 5 make 13."

## Exploring Measurement

Measurement involves a comparison of an attribute of an item or situation with a unit that has the same attribute. Lengths are compared to units of length (e.g. toothpicks, straws, string); areas to units of area (e.g. files, index cards); mass to units of mass (e.g. marbles, Unifix cubes); and volumes to units of volume (e.g. cups of water, cubes and balls). Before anything can be measured meaningfully, it is necessary to understand the attribute to be measured.



Provide students with a variety of measuring tasks where students are required to develop their own approach. Correct ideas about measurement will be developed out of discussion of the results. Key vocabulary: long, longer, longest, heaviest, lightest, tallest, shortest, most, least, etc.

## Investigation Ideas

**Classroom Balances:** Using small classroom balances, have students balance a variety of small items by directly comparing the mass. Then have students compare small items (e.g., eraser, pencil, crayon, plastic insect, button) to pennies or Unifix cubes as units of comparison. Ask, "How many pennies did your eraser weigh?" or "How many pennies did your plastic insect weigh?" Then, "Which one is heavier, the eraser or the insect?" or "Which one will make the balance go down lower, the eraser or the insect?" Then have them test their answer. Ask, "Can you tell me two things that almost weigh the same?" Have students demonstrate how they know this is true. (SS1)

### Beads and Shoes, Making Twos

*Contexts for Learning Mathematics K - 3*, Fosnot. This unit uses the contexts of walking hand in hand in two lines and examining pairs of shoes to explore doubles and one-to-one correspondence. Later in the unit, a story about designing necklace patterns using two colours of beads creates a context for exploring the relationship between doubles and skip-counting and invites students to work with groups as units. (N1–N7, PR1–2)



**Equal or Not?** Provide pairs of students with number cards from 1-20, (MMS Unit 2, p.76), a spinner (numbered 1-10), and a recording sheet. Have students turn over a number card and record it on their sheet as the "Card number". Students then spin the spinner twice, recording each number as "Spin 1" and "Spin 2" on their sheet. Students add the numbers spun and decide whether they equal the card number. If they are equal, students record the equality with an equal sign on their sheet. If unequal, they leave the space blank. See **Portal** for spinner and recording sheet. (N9, N10, PR3, PR4)

## Journal Ideas

Provide students with two bags of counters and ask them to determine if the sets are equal or unequal and to explain how they know. (PR3)

Ellen is selling goldfish. She started with 10 goldfish. She sold some to Paul and some to Mary. How many could they each have bought? Who has the most? Who has the least? (N5, N10)

What can you find in the classroom that is about as long as your arm? (SS1)

Name three things that weigh less than a shoe. Tell how you know. (SS1)

Make up your own story problem about the milk orders for your classroom. (N9)

Which container would hold more Unifix cubes, a student's milk carton or a pencil case box? Show how you know. (SS1)

Sam had 12 seeds. He planted 8. He wants to know how many more he needs to plant. How can he use adding to solve his problem? (N10)

## Interesting Websites

<http://www.k-5mathteachingresources.com/1st-grade-number-activities.html>

[http://www.math1.nelson.com/teachercentre/teachsurf\\_ch09\\_lesson05.html](http://www.math1.nelson.com/teachercentre/teachsurf_ch09_lesson05.html)

## Literature Connections

Ten Beads Tall illustrated by Pam Adams  
Students measure using a string of beads



How Big is It? By Ben Hillman



Use the pictures only to directly compare large objects

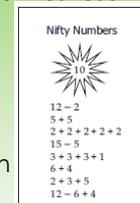
Cats Add Up by Dianne Ochiltree  
Addition and subtraction



## Game/Activity Ideas

**Cookie Sale:** Cookies cost 1¢ each. There are chocolate chip and Oreo cookies. You have 3 pennies, 1 nickel and a dime. Draw the different combinations of cookies you can buy. You must use all your money. (N9, N10)

**Nifty Number Sentences:** Write a number between 0 and 20 at the top of a chart each day. Students take turns writing a number sentence to equal the number on the chart. Encourage students to try to write a sentence that is different from the ones already on the chart. (PR3)



**Draw a Shape:** Give students a trapezoid, or other shape. Ask them to draw another shape with a larger area. Ask them to explain their thinking. (SS1)

**Grouping Game:** Play in partners with a specified number of counters for each student, a (1 to 10) spinner or a 10-sided die. Player A spins the spinner or rolls the die. The student then groups his or her counters into sets of the number. Any leftovers are removed. On Player A's next turn, he or she uses his or her remaining counters. The game continues until a player either runs out of counters or cannot do the grouping. For example: Player A starts with 30 counters.

1st turn - The player rolls a 9 and makes 3 sets/groups with 9 in each. The leftover counters (3) are removed.

2nd turn - The player rolls a 5 and makes 5 sets/groups with 5 in each. The leftover counters (2) are removed.

See **Portal** for Collection Count recording sheet and spinner. (N7)

