Place Value, Comparison, Addition and Subtraction to 100

In this final module of the school year, students synthesize their learning from all the other modules, working with the most challenging Grade 1 content. In the first several lessons, students identify and solve various types of word problems. Next, they extend their skills with tens and ones to numbers to 120, both counting and performing addition and subtraction. Finally, they are introduced to nickels and quarters, having already worked with dimes and pennies. The module concludes with fun fluency activities to celebrate their year of mathematical learning.

Number bonds with coins

Two different methods for two-digit addition:

$$47 + 23 = 70$$
$$20 \quad 3$$
$$47 + 20 = 67$$
$$67 + 3 = 70$$

$$47 + 23 = 70$$
$$3 \quad 20$$
$$47 + 3 = 50$$
$$50 + 20 = 70$$

What Came Before this Module:

In Module 5, students worked to sort, analyze, and compare both two- and three-dimensional shapes. They also learned how to combine shapes to create new, composite shapes. Finally, as in their work with number bonds and addition and subtraction, they examined the part-whole relationship through this new geometric lens.

Key Terms, Symbols, and Strategies in this Module:

Comparison Problem Type:
In these word problems, students compare two quantities to find the part that makes them different from each other.
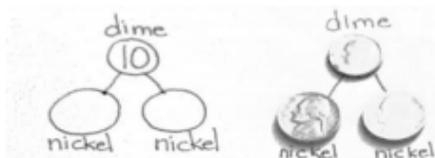*(See reverse for a sample problem)*

< less than symbol
> greater than symbol
= equal to symbol

Penny	1 cent
Nickel	5 cents
Dime	10 cents
Quarter	25 cents

+ How you can help at home:

- Using loose change around the house, invite your student to count and compare the coins

- Continue to practice 10 more/10 less questions, e.g., "What is 10 less than 40?" "What is 10 more than 52?"

- Ask your student to compare and find the difference between two quantities, and note the strategy used
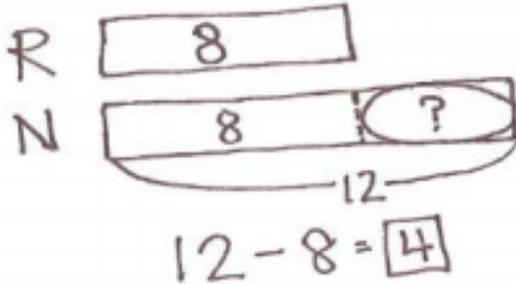
Key Common Core Standards:

- *Represent and solve problems involving addition and subtraction*
  - Use addition and subtraction within 20 to solve word problems
- *Extend the counting sequence*
  - Count to 120, starting at any number less than 120
- *Understand place value*
  - Understand that the two digits of a two-digit number represent amounts of tens and ones
  - Compare two two-digit numbers based on meanings of the tens and ones digits
- *Use place value understanding and properties of operations to add and subtract*
- *Tell and write time and money*

Prepared by Erin Schweng, Math Coach

The problem to be solved:
Rose wrote 8 letters. Nikil wrote 12 letters. How many more letters did Nikil write than Rose?

The Tape Diagram

Rose's "tape" shows the 8 letters she wrote. Nikil's shows 12 total, with the known amount of 8 marked off. Students learn to solve for the missing part, and to show their answer as a subtraction equation.

Spotlight on Math Strategies:

Tape Diagrams

Students will use this strategy to solve problems in this module of *A Story of Units*.

A Story of Units has several key mathematical strategies that will be used throughout a student's elementary years.

The tape diagram is a powerful model that students can use to solve various types of problems. At this point in first grade, we will introduce it as another way to conceptualize addition and subtraction word problems. Tape diagrams are especially powerful visual models for comparing two quantities, which students will do quite extensively in Module 6. These diagrams are also called "bar models" and consist of simple bar drawings that students make and adjust to fit a word problem. They then use the drawing to discuss and solve the problem.

As students move through the grades, tape diagrams will continue to be used and later will provide an essential bridge to algebra. Below is a sample word problem from Module 6 solved using a tape diagram to show the parts of the problem.

Sample Problem from Module 6:
(Example taken from Module 6, Lesson 7)

Shanika has 6 roses and 7 tulips in a vase. Maria has 4 roses and 8 tulips in a vase.

Who has more flowers? How many more flowers does she have?

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