Grade 2 Unit 4
Applying Base Ten Understanding

Volume 1 Issue 4

References

Helpful Links:

Math Magician (Fact Practice)
http://oswego.org/ocsd-web/games/mathmagician/maths1.html

ABCYa (Counting Money)
http://www.abcya.com/counting_money.htm

Learning Box (Place Value)
http://www.learningbox.com/Base10/BaseTen.html

Johnnie's Math Page (Facts & Operations Practice)
http://jmathpage.com/topics/jmp2ndgradeoperations.html

Johnnie's Math Page (Developing Number Sense)
http://jmathpage.com/topics/jmp2ndgradenumbersense.html

Math Grade 2 Textbook Connection:

Ch. 6, Lessons 6.1-6.3, 6.8
Ch. 7, Lessons 7.1-7.3
Ch. 8, Lessons 8.1-8.3

Textbook Online:

http://connected.mcgraw-hill.com/connected/login.do

Student User ID:
ccsd(student ID)
Password: cobbmath1

Dear Parents,

During this unit your child will be exploring addition and subtraction of two and three-digit numbers and will get to try many different strategies based on place value and understanding. Please keep in mind that while these strategies may be different from the way you are familiar with adding and subtracting, the purpose of these strategies is to build a strong foundation of place value when computing so students will understand why the traditional methods of addition and subtraction work but will have a variety of strategies than can use for flexibility and efficiency. Students will also be working with money and they use their place value understanding to solve simple word problems involving money.

Concepts Students will Use and Understand

- Continue to represent and solve problems involving addition and subtraction.
- Add up to 4 two-digit numbers.
- Understand and apply properties of operations and the relationship between addition and subtraction (inverse operations).
- Become fluent with mentally adding or subtracting 10 or 100 to a given three-digit number.
- Know the multiple meanings for addition (combine, join, and count on) and subtraction (take away, remove, count back, and compare)
- Recognize and use place value to manipulate numbers.
- Count with pennies, nickels, dimes, and dollar bills.
- Solve problems using mental math strategies.

Vocabulary

expanded form: A multi-digit number is expressed in expanded form when it is written as a sum of single-digit multiples of powers of ten. For example, 643 = 600 + 40 + 3.
base ten blocks: A manipulative used to build numbers and to help with addition and subtraction at the conceptual level.
place value: The value of a digit based on its place in a number.
symbols: +, -, =,
join: to put together (add)
separate: to take apart (subtract)
total: The number when sets are combined.
sum: The total when numbers are added.
inverse operations: the inverse operations for addition is subtraction; the inverse operation for subtraction is addition.
difference The result when one number is subtracted from another.
equation A mathematical expression where one part is equal to the other part. Example: 50 + 26 = 70 + 6.
Fluently is accurately and efficiently.

Symbols

+ addition

- subtraction

= equal

Example 1

Students are going to use their understanding of place value and expanded form from unit 1 to help them add and subtract within 100 fluently and within 1000 using strategies based on place value. The following is a common way students might add 2 or 3-digt numbers.

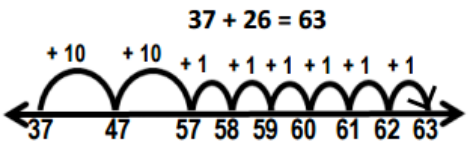
248 + 345 =	248
500 + 80 + 13	+345
500 + 80 = 580	500
580 + 13 = 593	80
	+ 13
	593

2nd grade students need to understand that they can group hundreds, tens and ones and the order does not matter. Drawing Base Ten blocks to help them solve this problem is also common.

Keep in mind that "naked" numbers are abstract and given a context can help students conceptualize the numbers more easily. Instead of using numbers such as 248 and 345, say 248 pencils and 345 pencils.

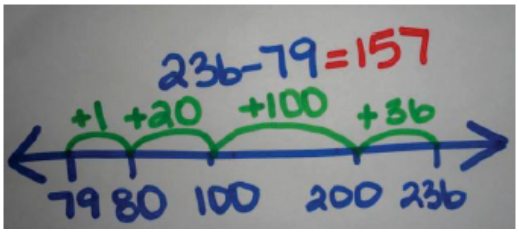
Example 2

An *open number line* allows students to add or subtract in chunks and serves as a visual recording method to keep track of the computation. Students are encouraged to use this strategy in a way that makes sense to them – numbers may be broken apart in many different ways. This is one example of using an open number line to model addition. Students become more efficient in their models as their knowledge solidifies.



Example 3

Students can also use an open number line to model adding up to find the difference between 236 and 79.



Example 4

Students start to work with two-step word problems using simple numbers. Promote students reading, thinking about and visualizing 1 sentence at a time:

Jose had 24 tickets after playing ski ball. He used 7 of tickets to buy a rubber ball and some more to buy an eraser. Jose has 9 tickets left. How many tickets did the eraser cost?

Activities at Home

- Let your child count the change from your pockets or purse.
- Encourage your child to practice skip counting by 5's, 10's, and 100's starting at numbers other than 0. For example, skip count by 5's from 35 to 50 or skip count by 10's from 78 to 128.
- Have students mentally add up to four 2-digit numbers. For example, add 20 + 30 + 10. Progress to adding more difficult 2-digit numbers such as 27 + 15 + 10 + 12. Students
- Check out the websites from page 1.