

MATH NEWS

Grade 2, Module 4, Topic D

2nd Grade Math

Module 4: Addition and Subtraction within 200 with Word Problems to 100

Math Parent Letter

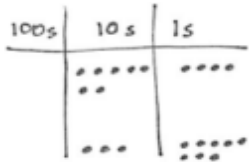
This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 4 of Eureka Math (Engage New York) covers strategies for adding and subtracting within 200. This newsletter will discuss Module 4, Topic D.

Topic D: Strategies for Composing Tens and Hundreds

Words to Know:

Mental Math- Calculations that are done in a student's head without the guidance of pencil and paper, calculators or other aids.

Chip Model- Each dot represents 1 unit of the column that it is in.



Place Value Chart

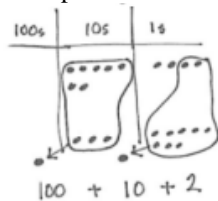
Place Value Chart with Headings
(use with numbers)

hundreds	tens	ones
7	2	6

Place value determines the value of the position of each digit.

6 tens = 60
3 ones = 3

Bundle, unbundle, regroup, rename, change (compose or decompose a 10 or 100)



Focus Area– Topic D

Compare, Order

Having worked with manipulatives to compose 10 ones as 1 ten, students relate this to composing 10 tens as 1 hundred. They use place value language to explain when they make a new hundred. They also relate 100 more from Module 3 to plus (+) 100 and mentally add 100 to given numbers.

Students will use the arrow method and use patterns to solve addition problems mentally. They will recognize that it is easier to add when working with the place value of 10.

Examples of the Arrow Method

$$7 + 8 = 7 \xrightarrow{+3} \underline{10} \xrightarrow{+5} \underline{15}$$

$$70 + 80 = 70 \xrightarrow{+30} \underline{100} \xrightarrow{+50} \underline{150}$$

$$67 + 83 = 67 \xrightarrow{+3} \underline{70} \xrightarrow{+30} \underline{100} \xrightarrow{+50} \underline{150}$$

OBJECTIVES OF TOPIC D

1. Use mental strategies to relate compositions of 10 tens as 1 hundreds to 10 ones as 1 ten.
2. Use manipulatives to represent additions with two compositions.
3. Relate manipulative representations to a written method.
4. Use math drawings to represent additions with up to two compositions and relate drawings to a written method.
5. Solve additions with up to four addends with totals within 200 with and without two compositions of larger units.

Students will write numbers in unit form before solving in standard form.

Solve mentally.

$$2 \text{ ones} + \underline{8 \text{ ones}} = 10 \text{ ones} = 1 \text{ ten}$$

$$2 + \underline{8} = 10$$

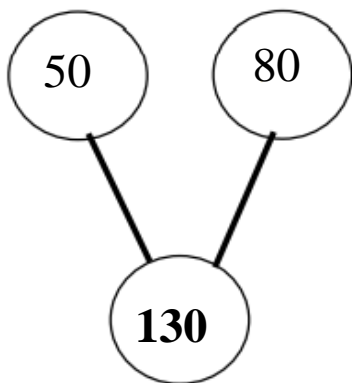
$$2 \text{ tens} + \underline{8 \text{ tens}} = 10 \text{ tens} = 1 \text{ hundred}$$

$$20 + \underline{80} = 100$$

Students use number disks or dots on a place value chart to represent addition with the composition of 1 ten and 1 hundred.

The image shows three different ways to represent the addition of 74 and 38. On the left, number disks are used: 74 is represented by 7 ten disks and 4 one disks, and 38 by 3 ten disks and 8 one disks. An arrow points to a second state where 10 one disks from the 38 are grouped into a ten disk, and one ten disk from the 74 is also grouped into a hundred disk, leaving 100, 10, and 2. In the middle, a place value chart with columns for 100s, 10s, and 1s shows dots representing the numbers. An arrow points to the same regrouped state as the number disks. On the right, the standard algorithm is shown: $74 + 38 = 112$.

There are 50 girls and 80 boys in the after-school program. How many children are in the after-school program?



The image shows the standard algorithm for adding 50 and 80. To the left is the vertical addition: $50 + 80 = 130$. To the right is a place value chart with columns for hundreds, tens, and ones. The number 50 is written in the tens and ones columns, and 80 is written below it. A blue circle highlights the 10 dots in the tens column, with an arrow pointing to a 100 dot in the hundreds column. Below the chart is the equation $100 + 30 + 0$.

Students will have to look for partners of 10 ones or 10 tens to solve, using the associative property to group the numbers. (Associative Property- It doesn't matter how you group the numbers when you add)

Maya bought an outfit for \$29, a book sack for \$15, a binder for \$11, and a pair of shoes for \$25. How much did Melissa spend? Show your work.

Possible strategies students may use:

$$29 + 15 + 11 + 25$$

$$40 + 40 = \$80$$

or

$$29 + 11 + 15 + 25$$

$$1 \wedge 10 \quad 5 \wedge 20$$

$$29 + 1 + 10 + 15 + 5 + 20$$

$$30 + 10 + 20 + 20 = \$80$$