

# MATH NEWS

Grade 2, Unit 4, Topic D

## 2nd Grade Math

Unit 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 the Common Core. Unit 4 of Engage New York covers strategies for adding and subtracting within 200. This newsletter will discuss Unit 4, Topic D.

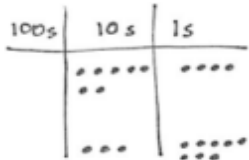
*Topic D: Strategies for Composing Tens and Hundreds*

#### 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 **Place value** determines the

1 unit of the column that it is in.



Place Value Chart

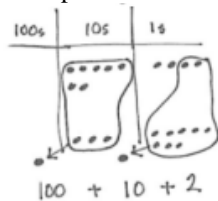
Place Value Chart with Headings  
(use with numbers)

hundreds	tens	ones
7	2	6

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.*

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

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

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

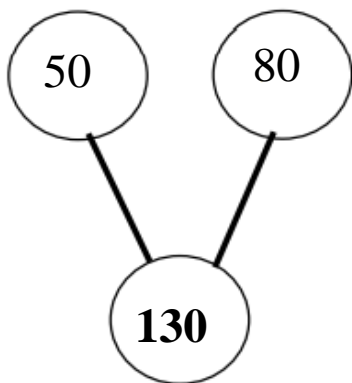
$$20 + \underline{80} = 100$$

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:

- Number Disks:** The top left shows 74 (7 tens disks, 4 ones disks) and 38 (3 tens disks, 8 ones disks). The bottom left shows the result after exchanging 10 ones for 1 ten, resulting in 10 tens and 2 ones.
- Place Value Chart:** The top middle shows a chart with columns for 100s, 10s, and 1s. The bottom middle shows the same chart after exchanging 10 ones for 1 ten, with the equation  $100 + 10 + 2$  written below.
- Standard Algorithm:** The top right shows the vertical addition:
 
$$\begin{array}{r} 74 \\ + 38 \\ \hline \end{array}$$
 The bottom right shows the result after carrying:
 
$$\begin{array}{r} 74 \\ + 38 \\ \hline 112 \end{array}$$

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



	hundreds	tens	ones
50			
<u>+ 80</u>			
130			
	•••••	•••••	•
	•••••	•••••	•••
	•	•••	•••
	$100 +$	$30 +$	$0$

*Note: A blue circle highlights the 100, 30, and 0 in the bottom row, with an arrow pointing to the 100.*

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 ^ 10      5 ^ 20

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

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