# MATH NEWS

Grade 2, Module 4, Topic E — May 2014

## 2nd Grade Math

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

### Math Parent Letter

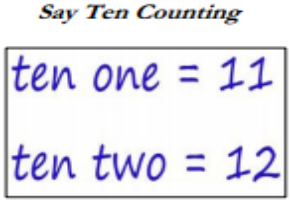
This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 4 of Eureka Math (Engage New York) covers strategies for adding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

**Topic E**: *Strategies for Decomposing Tens and Hundreds*

**Words to Know:**

**Decomposition** means to take numbers apart in a problem to make it easier to understand and solve.

**"Say Ten" way**



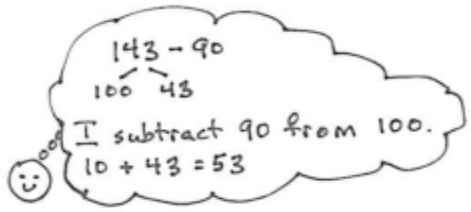

## Objectives of Topic E

1. Use number bonds to break apart three-digit minuends and subtract from the hundred.
2. Use manipulatives to represent subtraction with decompositions of 1 hundred as 10 tens and 1 ten as 10 ones.
3. Relate manipulative representations to a written method.
4. Use math drawings to represent subtraction with up to two decompositions and relate drawings to a written method.
5. Subtract from 200 and from numbers with zeroes in the tens place.

## Focus Area– Topic E

*Strategies for Decomposing Tens and Hundreds*

Topic E begins with an extension of mental math strategies learned in first grade, when students learned to subtract from the ten by using number bonds. They return to this strategy to break apart three-digit minuends and subtract from the hundred.
Restate 143 – 90 as 100 – 90 + 43.

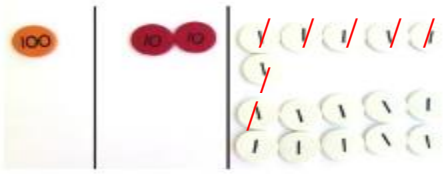



Students use number disks on a place value chart to represent subtraction and develop an understanding of decomposition of tens and hundreds.

***Solve: 136 – 57=***

Set up the problem with number disks by counting out 1 hundred, 3 tens, and 6 ones.


We cannot subtract 7 ones from 6 ones, so we unbundle a ten. (Change 1 ten for 10 ones)




We can now subtract 7 ones from 16 ones.

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Let's move on to the tens. We cannot subtract 5 tens from 2 tens, so we need to unbundle a hundred (Change 1 hundred for 10 ones) leaving you with 0 hundreds. Now you can subtract 5 tens from 12 tens.

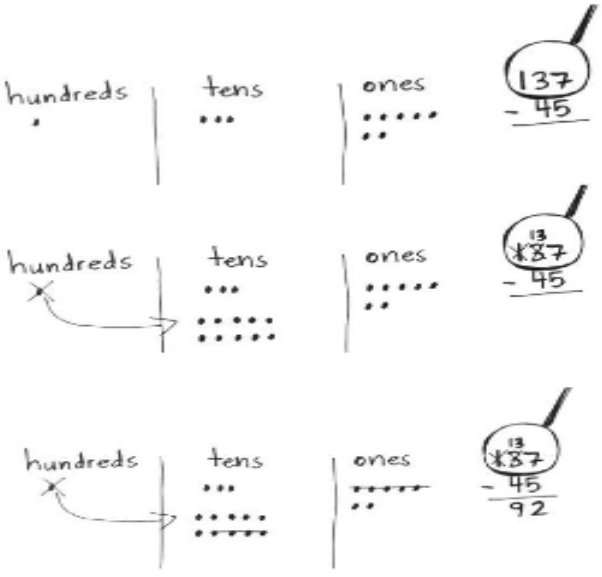
176 – 57 the regular way is 79
The "Say Ten" way is, 7 tens 9

The above concrete model helps students see the answer to the question, "Do I have enough ones?" or, "Do I have enough tens?" When they do not, they exchange one of the larger units for ten of the smaller units. Repeated practice with this exchange solidifies their understanding that within a unit of ten there are 10 ones, and within a unit of a hundred there are 10 tens.

176 – 57= 79

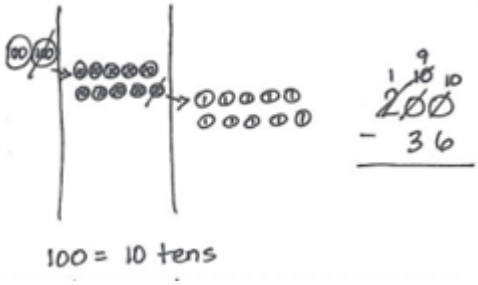
I unbundled the hundred. yes no
I unbundled the ten. yes no

Students move towards the abstract when they model decompositions on their place value chart while simultaneously recording the changes in the written form. Students draw a magnifying glass around the minuend, as they did in Topic C. They then ask the question, "Do I have enough ones?"

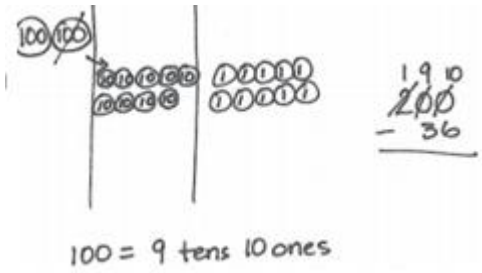



Using number disks on a place value chart, students review the concept that a unit of 100 is comprised of 10 tens. They then model 1 hundred as 9 tens and 10 ones and practice counting to 100 both ways (i.e., 10, 20, 30...100 and 10, 20...90, 91, 92, 93...100). Next, they model the decomposition of a hundred in one of 2 different strategies as they represent subtraction from 200.

Strategy 1: Decompose 100 as 10 tens and then decompose 1 ten as 10 ones.




Strategy 2: Decompose 100 as 9 tens and 10 ones.




Students use this same reasoning to subtract from numbers that have zero tens.