



# MATH NEWS



Grade 1, Module 4, Topic A

## Lessons 1-6

### 1<sup>st</sup> Grade Math

Module 4: Place Value, Comparison, Addition & Subtraction to 40

#### Math Parent Letter

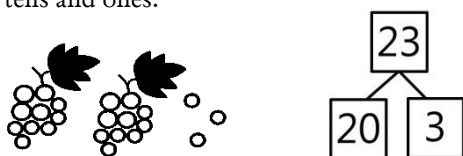
This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 4 of Eureka Math (Engage New York) covers Place Value, Comparison, Addition and Subtraction to 40. This newsletter will discuss Module 4, Topic A.

Topic A. Tens And Ones

#### Words to know

- Compose
- Decompose
- Place Value
- Place Value Chart
- Same As
- Tens
- Ones

Students are presented with a collection of 20 to 40 items. They will discuss and decide how to count the items and compare the efficiency of counting individual ones with counting tens and ones.



### OBJECTIVE OF TOPIC A

- 1 Compare the efficiency of counting by ones and counting by tens.
- 2 Use the place value chart to record and name tens and ones within a two-digit number.
- 3 Interpret two-digit numbers as either tens and some ones or as all ones.
- 4 Write and interpret two-digit numbers as addition sentences that combine tens and ones. (Lesson 4)
- 5 Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number. (Lesson 5)
- 6 Use dimes and pennies as representations of tens and ones.

### Focus Area– Topic A

Tens and Ones

Throughout this Topic students will **decompose** 2-digit numbers as tens and ones then record their findings on a **place value chart**.

36	
$\begin{array}{c c} T & O \\ \hline 3 & 6 \end{array}$	3 tens 6 ones

They will also gain a better understanding of **place value** when they are asked to **compose** and decompose 2-digit numbers as addition equations.

36 is the **same as** 30 + 6

3 **tens** 6 **ones** is the same as 36 ones

Students will also begin to use **arrow notation** or the arrow way.

$\begin{array}{c c} T & O \\ \hline 3 & 6 \end{array}$	-10	$\begin{array}{c c} T & O \\ \hline 2 & 6 \end{array}$
→		
$\begin{array}{c c} T & O \\ \hline 1 & 6 \end{array}$	+10	$\begin{array}{c c} T & O \\ \hline 2 & 6 \end{array}$
→		

Students will make the connection between the representation of tens and ones to dimes and pennies.



Kayla has 3 bags of 10 sticker and 6 stickers. She gives 1 bag of 10 to her friend. How many stickers does she have left? *Kayla has 26 stickers left.*

$\begin{array}{c c} T & O \\ \hline 3 & 6 \end{array}$	-10	$\begin{array}{c c} T & O \\ \hline 2 & 6 \end{array}$
→		

Angela has 16 stickers. How many more stickers does she need to have as many as Kayla does now? *Angela needs 10 more stickers to have the same as Kayla.*

$\begin{array}{c c} T & O \\ \hline 1 & 6 \end{array}$	+10	$\begin{array}{c c} T & O \\ \hline 2 & 6 \end{array}$
→		



# MATH NEWS



Grade 1, Module 4, Topic B

## Lessons 7-10

### 1<sup>st</sup> Grade Math

*Module 2: Place Value, Comparison, Addition & Subtraction to 40*

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Topic B. Comparison of Pairs of 2-Digit Numbers

#### Words to know

- Numerals
- Greater Than ( $>$ )
- Greatest
- Equal To ( $=$ )
- Less Than ( $<$ )
- Lesser

Students will identify **greater** (G) or **lesser** (L) numbers and compare **numerals** using their understanding of place value.

Circle the greater number:

17  
**G**

14  
**L**

1 ten 6 ones  
**L**

2 tens 8 ones  
**G**

### Focus Area– Topic B

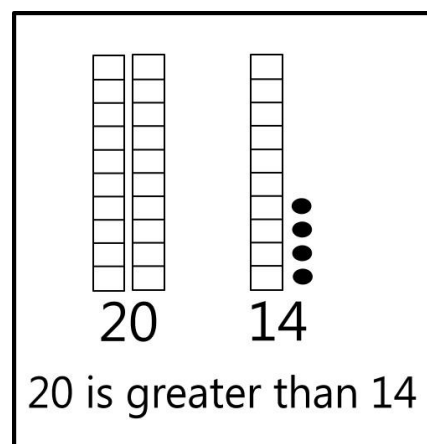
*Comparison of 2-Digit Numbers*

Students will order a group of numbers from least to greatest and from greatest to least always reading from left to right.

Least to Greatest 12, 15, 24, 32

Greatest to Least 32, 24, 15, 12

They will also begin to use sentences to compare two numbers.



Topic B will introduce symbols that represent **less than** ( $<$ ), **greater than** ( $>$ ), and **equal to** ( $=$ ) and recognize and compare numerals in order to determine which one is greater and less than the other.

### OBJECTIVE OF TOPIC B

- 1 Compare two quantities, and identify the greater or lesser of the two given numerals.
- 2 Compare quantities and numerals from left to right.
- 3 Use the symbols  $>$ ,  $=$ , and  $<$  to compare quantities and numerals.

1 ten 7 ones

is greater than  
is less than  
is equal to

16

17  $>$  16



# MATH NEWS



Grade 1, Module 4, Topic C

## Lessons 11-12

### 1<sup>st</sup> Grade Math

Module 4: Place Value, Comparison, Addition & Subtraction to 40

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Topic C. Addition and Subtraction of Ten

#### Words to know

- Numeral Form
- Unit Form

Student represent the addition of 10 more with concrete objects and number bonds using both the numeral form and unit form. They should recognize the relationship with adding one more ten.

$3 + 1 = 4$ 	
$3 \text{ tens} + 1 \text{ ten} = 4 \text{ tens}$ 	
$30 + 10 = 40$	

### Focus Area– Topic C

Addition and Subtraction of Ten

Students will also represent the subtraction of 10 less with concrete objects and number bonds using both the numeral form and unit form.

$4 - 1 = 3$ 	
$4 \text{ tens} - 1 \text{ ten} = 3 \text{ tens}$ 	
$40 - 10 = 30$	

They will also add multiples of 10 to 2-digit numbers that include both ones and tens.

<table border="1" style="display: inline-table; text-align: center;"> <tr><td>tens</td><td>ones</td></tr> <tr><td>1</td><td>5</td></tr> </table>	tens	ones	1	5	+	<table border="1" style="display: inline-table; text-align: center;"> <tr><td>tens</td><td>ones</td></tr> <tr><td>2</td><td>0</td></tr> </table>	tens	ones	2	0	=	<table border="1" style="display: inline-table; text-align: center;"> <tr><td>tens</td><td>ones</td></tr> <tr><td>3</td><td>5</td></tr> </table>	tens	ones	3	5
tens	ones															
1	5															
tens	ones															
2	0															
tens	ones															
3	5															
$15 \xrightarrow{+10} 25 \xrightarrow{+10} 35$ $15 \xrightarrow{+20} 35$																

### OBJECTIVE OF TOPIC C

- 1 Add and subtract tens from a multiple of 10.
- 2 Add tens to a two-digit number.

Numeral Form = 35

Unit Form = 3 ten 5 ones



# MATH NEWS



Grade 1, Module 4, Topic D

## Lessons 13-18

### 1<sup>st</sup> Grade Math

Module 4: Place Value, Comparison, Addition & Subtraction to 40

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Topic D. Addition of Tens or Ones to a 2-digit Number

#### Words to know

- Count On
- Make Ten

**Make ten** is a strategy for addition facts. Students should ask “How many more are needed to make a ten?” and “How many are left over?”

$$\begin{array}{r} 8 + 7 = ? \\ \swarrow \searrow \\ 2 \quad 5 \\ 10 + 5 = 15 \end{array}$$

Start with 8. How many more are needed to make 10? 2

If 2 is taken from 7, how many are left over? 5

$$8 + 7 = 10 + 5 = 15$$

Start with 24. How many more are needed to make 10? 6  
If 6 is taken from 8, how many are left over? 2

$$\begin{array}{r} 24 + 8 = ? \\ 24 \xrightarrow{+6} 30 \xrightarrow{+2} 32 \end{array}$$

$$24 + 6 = 30 \text{ and } 30 + 2 = 32, \text{ so } 24 + 8 = 32$$

### OBJECTIVE OF TOPIC D

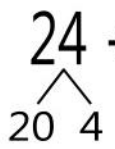
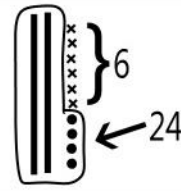
- 1 Use counting on and the make ten strategy when adding across a ten.
- 2 Use single-digit sums to support solutions for analogous sums to 40.
- 3 Add ones and ones or tens and tens.
- 4 Share and critique peer strategies for adding two-digit numbers.

### Focus Area– Topic D

Addition of Tens or Ones to a 2-digit Number

Students will begin to use the make ten strategy and the count on strategy to add larger numbers.

Students will begin to notice that smaller addition problems can help with larger ones. Look at Part A of the image below. Remember the two questions asked when using the make ten strategy? In this case a 24 already has a numeral in the tens place, so use a number bond to show the tens and left over ones. Part A shows a number bond for 24 as 20 and 4. Now there is a smaller addition problem 4 + 6 that can be used to solve this problem. The student will solve 4 + 6 then add that sum to the 20 left.

<h2>24 + 6 = ?</h2>	
A	 $24 + 6$ $4 + 6 = 10$ $20 + 10 = 30$
B	 <p>Draw to solve. Draw 2 tens and 4 ones, then draw 6 more ones. Count to solve.</p>

**Counting on** is another math strategy for addition facts. Students are given an addition problem  $24 + 6 = ?$  In Part B of the image above the students has a visual tool to see what count on means. Start with 24 (circled), then count on 6 times. 25, 26, 27, 28, 29, 30.

In different lessons within this topic, students will represent the answer to each problem in a place value chart.

$$24 + 6 = 30$$

tens	ones
3	0



# MATH NEWS



Grade 1, Module 4, Topic E

## Lessons 19-22

### 1<sup>st</sup> Grade Math

Module 4: Place Value, Comparison, Addition & Subtraction to 40

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Topic E. Varied Problem Types Within 20

#### Words to know

- Tape Diagram
- Addition Sentence

In this topic students will begin to see addition and subtraction word problems. They will learn how to solve problems using a **tape diagram**. A tape diagram is a model to help students visualize the addition or subtraction problem they are trying to solve. Students will learn how to draw and label a tape diagram. They will also have to write an addition sentence explaining the tape diagram, and create their own word problem by looking at a tape diagram. This newsletter will explain different types of word problems; however, the students will be learning to solve a variety of word problems throughout Topic E.

**Helpful Hint:** In the images on this page notice there are two different circles drawn on the tape diagram. The first ten circles are one color and then the color changes. This is done so students can visually see the groups of ten. If the answer is larger than 20 after the second group of ten the color changes again.

### OBJECTIVE OF TOPIC E

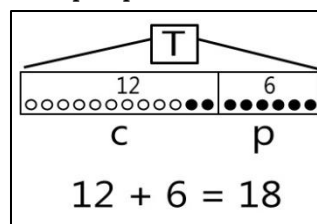
- 1 Use tape diagrams as representations to solve put together/take apart with total unknown and add to with result unknown word problems.
- 2 Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.
- 3 Write word problems of varied types.

### Focus Area– Topic E

Varied Problem Types Within 20

*Tammy saw 12 carrots and 6 pumpkins growing in her garden. How many vegetables did she see growing in her garden?*

Begin by drawing the tape diagram. There are 12 carrots and 6 pumpkins and the total of both is what is needed to solve the problem. Draw a

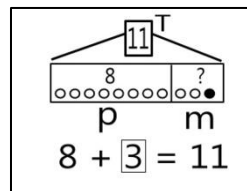


rectangle divided into two sections. In one section draw 12 circles, and in the second section draw 6 more circles. Above the circles

write the number of circles in each section. Below each section label them with letters. (in the image the “c” represents the carrots and the “p” represents the pumpkins) The lines above the tape diagram represents that the numbers should be combined to find the total (T). Then students will write an **addition sentence**.

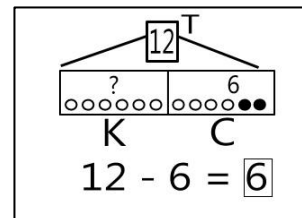
$$12 + 6 = 18$$

*8 kids were playing at the park. Some more kids came. Then there were 11 kids. How many more kids came to the park?*



Notice the “T” at the top of the image. The **total** is always labeled. The “p” shows how many **played**, the “m” shows how many **more**.

*There are 12 strawberries in a basket for Kerry and Cindy. Cindy ate 6 strawberries. How many strawberries did Kerry eat?*







# MATH NEWS



Grade 1, Module 4, Topic F

## Lessons 23-29

### 1<sup>st</sup> Grade Math

Module 4: Place Value, Comparison, Addition & Subtraction to 40

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Topic E. Addition of Tens and Ones to a Two-Digit Number

Students will begin to focus on interpreting numbers with two-digit such as 25 as 1 ten and 15 ones.

25 = 2 tens 5 ones  
1 ten 15 ones  
0 tens 25 ones

Students will gain an understanding of place value and how numbers can be represented in various ways.

38

tens	ones	tens	ones
2	18	3	8

### OBJECTIVE OF TOPIC F

- 1 Interpret two-digit numbers as tens and ones including cases with more than 9 ones.
- 2 Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.
- 3 Add a pair of two-digit numbers when the ones digits have a sum greater than 10.
- 4 Add a pair of two-digit numbers with varied sums in the ones.

### Focus Area– Topic F

Addition of Tens and Ones to a Two-Digit Number

Students interchangeably add sets of two-digit numbers where the ones digit produces a sum less than or equal to 10. For example, when adding  $24 + 16$ , students decompose the second addend into 10 and 6. They then add 10 to 24, making 34, and then add the remaining ones. Students will also practice adding ones to the first addend and then adding the remaining 10.

$$24 + 16 = ?$$



$$24 + 10 = 34$$

$$34 + 6 = 40$$

$$24 + 16 = ?$$



$$30 + 10 = 40$$

Students add tens and ones when the one-digit has a sum greater than 10 such as  $19 + 15$ . Students continue to decompose the second addend alternating between adding on the ten first and making the next ten.

$$19 + 15 = ?$$



$$19 + 10 = 29$$

$$29 + 5 = 34$$

$$19 + 15 = ?$$



$$19 + 1 = 20$$

$$20 + 14 = 34$$

Students will practice adding two-digit problems using the arrow way.

$$19 + 15 = ?$$

$$19 \xrightarrow{+1} 20 \xrightarrow{+10} 30 \xrightarrow{+4} 34$$