## 3rd Grade Math

*Module 3: Multiplication and Division with Units of 0, 1, 6-9, and Multiples of 10*

**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 3 of Eureka Math (Engage New York) covers Multiplication and Division with Units of 0, 1, 6-9 and Multiples of 10.  This newsletter will discuss Module 3, Topic A.

Topic A. Properties of Multiplication and Division

*Vocabulary Words*

- Commutative Property
- Product
- Unknown
- Factors
- Tape Diagram
- n + 1

**Things to Remember!!!**

*What is a tape diagram?*

A tape diagram uses a rectangle(s) with numbers to represent the number in a word problem. Now that numbers are getting bigger a rectangle is used to represent the number instead of drawing dots or pictures.  A tape diagram allows the student to visualize the problem.
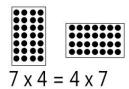
## OBJECTIVE OF TOPIC A

| | |
|---|---|
| 1 | Study commutatively to find known facts of 6, 7, 8 and 9. |
| 2 | Apply the distributive and commutative properties to relate multiplication facts of 5 x n + n to 6 x n and n x 6 where n is the size of the unit. |
| 3 | Multiply and divide with familiar facts using a letter to represent the unknown. |

## Focus Area– Topic A

*Properties of Multiplication and Division*

The **commutative property** of multiplication means that changing the order of **factors** does not change the answer or **product**.  This means that $7 \times 4 = 4 \times 7$.



$$7 \times 4 = 4 \times 7$$

By understanding this property students also learn that a majority of their multiplication facts are already known.

Learning how to solve multiplication problems by using the commutative property and **n + 1** is also taught in this topic.  Solve $8 \times 6$

The commutative property states that factors can change order and still have the same product.  $6 \times 8$ can also be written as $5 \times 8 + 1 \times 8$.  By using a multiplication fact that is already known, solving $6 \times 8$ can be easy.  The n + 1 rule is simply saying to add one more group.  In this case we know $5 \times 8$ is 40 and if 1 more group of 8 is added (repeated addition), then 6 groups of $8 = 6 \times 8 = 42$.

In previous lessons a question mark (?) was used to represent an unknown number.  In this topic using a letter to represent the **unknown** is also introduced.

| | |
|---|---|
| $48 = 8 \times r$ | $48 \div s = 8$ |
| $48 = 8 \times 6$ | $48 \div 6 = 8$ |
| $r = 6$ | $s = 6$ |

Mrs. James has 48 pencils for her library.  Mrs. James placed a pack of 6 pencils on each desk.  How many packs of pencils does Mrs. James have?



How many 6's

Mrs. James has 8 packs of pencils.