



# MATH NEWS



Grade 4, Module 3, Topic A

October 2013

## 4<sup>th</sup> Grade Math

*Module 3: Multi-Digit Multiplication and Division*

### 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 Multi-Digit Multiplication and Division. This newsletter will discuss Module 3, Topic A.

Topic A. Multiplicative Comparison Word Problems

### Words to know

- Area (A)
- Perimeter (P)
- Unknown Factor
- Units
- Area Model
- $A = l \times w$
- $P = 2(l + w)$
- $l$  (length)
- $w$  (width)
- Compare

### Things to Remember!!!

- The formula for area is  $A = l \times w$
- The area is always in square units.
- Perimeter is the distance around the figure. (The rim of the figure.)
- Perimeter of a shape can be found using 3 different formulas:
  - $P = 2(l + w)$
  - $P = l + w + l + w$

## OBJECTIVE OF TOPIC A

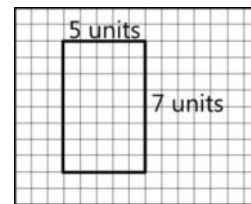
- 1 Investigate and use the formulas for area and perimeter of rectangles.
- 2 Solve multiplicative comparison word problems by applying the area and perimeter formulas
- 3 Demonstrate understanding of area and perimeter formulas by solving multi-step real world problems.

## Focus Area- Topic A

*Multiplicative Comparison Word Problems*

*Knowing the formula for area and perimeter*

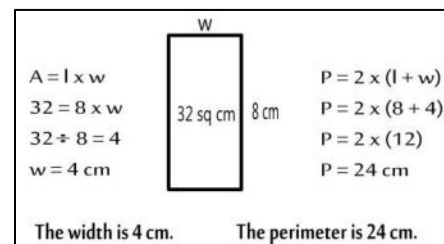
The rectangle below is 5 units wide by 7 units long.



Perimeter:  $P = 2 \times (l + w)$   
 $P = 2 \times (7 + 5)$   
 $P = 2 \times (12)$   
 $P = 24$

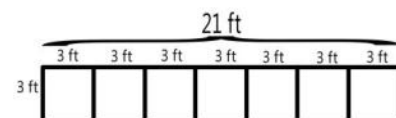
Area:  $A = l \times w$   
 $A = 7 \times 5$   
 $A = 35$  square units

The area is 32 square units. The length is 8. What is the width? What is the perimeter?



*Perimeter and Area Word Problems*

The banner on the Homecoming float was 3 feet long. It is 7 times as wide as it is long. Draw the diagram and label its dimensions. What is the perimeter?



$P = 2 \times (l + w)$   
 $P = 2 \times (21 + 3)$   
 $P = 2 \times (24)$   
 $P = 48$  ft

Cindy, Marcus and Sarah received gifts for their birthday. Cindy's gift was 3 inches wide with an area of 12 square inches. Marcus' gift was twice as long and twice as wide as Cindy's gift. Sarah's gift was 3 times as long and 3 times as wide as Cindy's gift. Draw a picture to represent each gift. Find the perimeter and area of each gift.

Cindy's Gift



Area

$$A = l \times w$$

$$12 = l \times 3$$

$$12 \div 3 = 4$$

$$l = 4 \text{ inches}$$

Perimeter

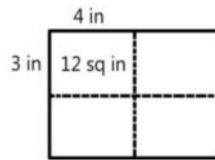
$$P = 2 \times (l + w)$$

$$P = 2 \times (3 + 4)$$

$$P = 2 \times 7$$

$$P = 14 \text{ inches}$$

Marcus' Gift



Area

$$A = l \times w$$

$$A = 6 \times 8$$

$$A = 48 \text{ sq in}$$

Perimeter

(The perimeter is twice as long and wide)

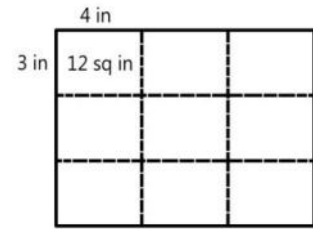
$$P = 2 \times (l + w)$$

$$P = 2 \times (6 + 8)$$

$$P = 2 \times 14$$

$$P = 28 \text{ inches}$$

Sarah's Gift



Area

$$A = l \times w$$

$$A = 9 \times 12$$

$$A = 108 \text{ sq in.}$$

Perimeter

(The perimeter is 3 times as long and wide)

$$P = 2 \times (l + w)$$

$$P = 2 \times (9 + 12)$$

$$P = 2 \times 21$$

$$P = 42$$

The screen at the movie theater is 5 times as long and 5 times as wide as the projection screen at school. The projection screen at school is 3 feet wide with a perimeter of 16 feet. What is the perimeter of the screen at the movie theater?

First find the length (l) of the school screen. The width is 3 ft. To find the perimeter use the formula  $P = l + w + l + w$ . So if the perimeter is 16 ft subtract  $16 - 3 - 3 = 10$ . Next divide 10 by 2. Therefore, the missing length is 5. Now, use the knowledge of the width and length of the school screen to find the perimeter of the movie theater screen.

School Screen

$P = 16 \text{ ft}$

$16 - 3 - 3 = 10$

$10 \div 2 = 5$

$l = 5$

$5 \times 5 = 25 \text{ ft}$

$P = 2 \times (l + w)$

$P = 2 \times (25 + 15)$

$P = 2 \times (40)$

$P = 80 \text{ feet}$

The perimeter for the screen at the movie theater is 80 feet.

Larry and Troy went on a camping trip. The campsite was 30 feet by 15 feet. They set up a tent that was 10 feet by 8 feet. How much room will they have to set up the rest of their camping gear?

To find the answer to this problem find the area of the camp site and the area of the tent. Then subtract the area of the tent from the area of the campsite.

Larry and Troy's Campsite

|   |                        |
|---|------------------------|
| <b>Area of Campsite</b>   | <b>Area of Tent</b>    |
| $A = 30 \times 15$  | $A = 8 \times 10$      |
| $A = 450 \text{ sq ft}$   | $A = 80 \text{ sq ft}$ |
| <b>Campsite Area - Tent Area = Empty Area</b>                               |                        |
| $450 - 80 = 370 \text{ sq ft}$  |                        |
| <b>Larry and Troy have 370 sq ft left to set up the rest of their gear.</b> |                        |