MATH NEWS

4th Grade Math Unit 2

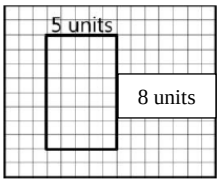
Volume 2 — 1st 9 Weeks

UNIT 2 GOALS:

- Find the area and perimeter of rectangles.
- Find area of rectilinear figures by decomposing into non-overlapping rectangles and adding the areas of the non-overlapping parts.
- Understand factors and multiples of a number.
- Determine if a number is prime or composite.
- Multiply and divide using place value strategies.

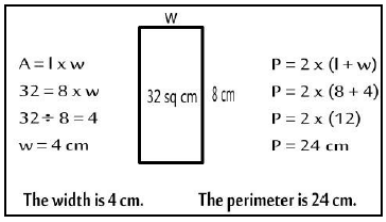
Knowing the formula for area and perimeter:

The rectangle below is 5 units wide by 8 units long.



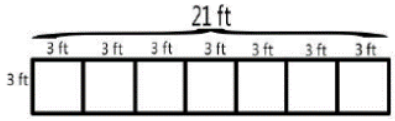
Perimeter:	Area
P = 2 x (l + w) P = 2 x (8 + 5) P = 2 x (13) P = 26 units	A = l x w A= 8 x 5 A = 40 square units

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 is 3 feet long. It is 7 times as wide as it is long. Draw a diagram and label its dimensions. What is the perimeter?



P = 48ft.

VOCABULARY

Unit 2

Product- the answer to a multiplication problem.

Factors- numbers that are multiplied to get a product.

Multiples- the product of a whole number and any other whole number.

Quotient- the answer to a division problem.

Prime- a number that has exactly two factors, 1 and itself.

Composite- a number that has more than two factors.

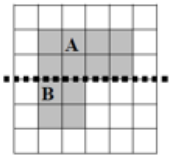
Dividend- a quantity to be divided.

Divisor- the quantity by which another quantity is to be divided.

Finding the area of rectilinear figures:

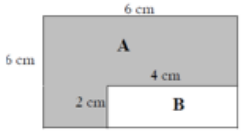
There is more than one way to find the unknown area.

1. **Break Apart Strategy**



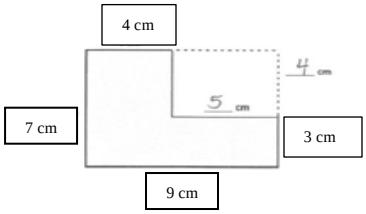
Area A + Area B = Area of figure
(2 x 4) + (2 X 2) = 8 + 4 = 12 sq. units

2. **Subtract to Find Area**



Area of figure - Area B = Area A
(6 x 6) – (4 x 2) = 36 -8 = 28 sq. cm.

3. **Subtract to find Area with missing sides**



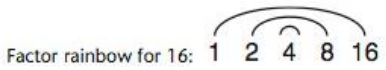
Label the missing sides.
Big rectangle
7 x 9 = 63 sq. cm.
Small rectangle
4 x 5 = 20 sq. cm
Shaded region:
63 – 20 = 43 sq.cm.

Finding Factors and Multiples of Whole Numbers 1-100

Students will find factor pairs for whole numbers in the range of 1-100. Students will use skip counting and multiplication to find multiples of a number.

In the following example, **students use the factor rainbow to find the factors of 16.**

factor rainbow A way to show factor pairs in a list of all the factors of a number. A factor rainbow can be used to check whether a list of factors is correct.

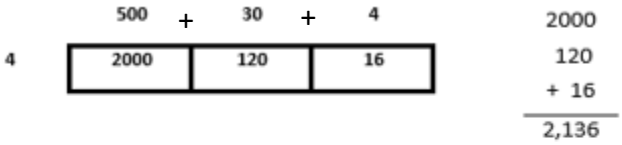


In the following example, **students skip count to find the first ten multiples of 9.**

9	18	27	36	45	54	63	72	81	90

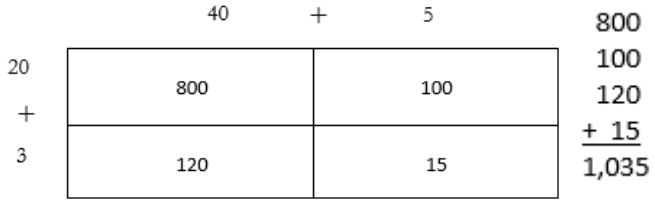
Multiplying Multi-Digit Whole Numbers

Students will multiply whole numbers using multiple written methods. For example, students will learn how to use an area model to find partial products. In the example below, we see two different written methods for 534 x 4.



534
x 4
2000 4 x 500
120 4 x 30
+ 16 4 x 4
2,136

This example shows 23 x 45.



Identifying Prime and Composite Numbers:

Students will determine whether a given whole number in the range 1-100 is prime or composite.

In order to determine if a number is prime or composite students will need to find all the factors of a given number.

Example:

1. **Is the number 6 prime or composite?**

Factor pairs for 6 (1 x 6, 2 x 3).

The number 6 has more than 2 factors (1, 2, 3, and 6) therefore, it is a composite number.

2. **Is the number 11 prime or composite?**

Factor pairs for 11 (1 x 11 and 11 x 1).

The number 11 only has 2 factors (1 and 11) therefore, it is a prime number.

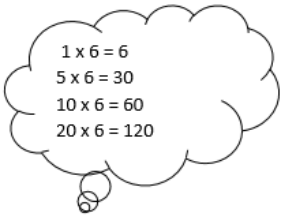
Dividing Multi-Digit Whole Numbers

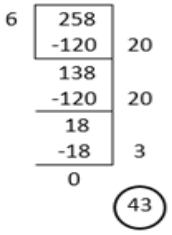
Partial Quotient

Students will divide whole numbers with up to four-digit dividends by one-digit divisors using strategies based on place value.

Example: The 258 students in fourth grade are separated into 6 groups. How many students are in each group?

Before beginning to divide students should take the time to create a think box that will help them with their division.





Using the information from my think bubble I see that 20 x 6 is 120. When I subtract 120 from 258 I have 138 left over. Because I know that 20 x 6 is 120, I can subtract 120 from 138. I have 18 left over. Because 1 x 2 is 6, I try 3 x 6 which is 18. I subtract 18 from 18 and there are no students leftover. Therefore, I add 20+20+3

Resources for Unit 2