

Math Workshop

March 12, 2009

Avon Public Library

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## Agenda

1. **National Math Standards/Colorado Standards/Curriculum/Testing/Rubrics**  
(10 Minutes Overall View and background)
2. **Standard 1 Number Sense**  
Factors, Multiples, Prime Factorization from Grades 6 to 8
3. **Standard 2 Algebra**  
A look at algebraic expressions and equations from Grade 6-8
4. **Questions**

## Standard 1 Number Sense

**Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.**

**In order to meet this standard, a student will**

- **construct and interpret number meanings through [real world experiences](#) and the use of hands-on materials;**
- **represent and use numbers in a variety of equivalent forms (for example, fractions, decimals, percents, [exponents](#), [scientific notation](#));**
- **know the structure and properties of the [real number system](#) (for example, [primes](#), factors, multiples, relationships among sets of numbers); and**

- use number sense, including estimation and mental arithmetic, to determine the reasonableness of solutions.

**Grade 6 and 7 Questions**

**What is the least common multiple (LCM) of 8, 12, and 18 ?**

- A 24**
- B 36**
- C 48**
- D 72**

**What is the greatest common factor (GCF) of 108 and 420 ?**

- A 6**
- B 9**
- C 12**
- D 18**

**Write the prime factorization of 84 in exponential form.**

*Show your work.*

*Answer* \_\_\_\_\_

**Grade 8**

## Standard 2

**Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems. In order to meet this standard students will...**

1. represent, describe, and analyze patterns and relationships using tables, graphs, verbal rules, and standard algebraic notation;
2. describe patterns using variables, expressions, equations and inequalities in problem-solving situations;

### Examples from Grade 6-8

The table below shows the amounts of money Vince receives for selling bunches of flowers at the farmers' market.

FLOWER SALES

Number of Bunches	20	25	30	35
Amounts of Money	\$120	\$150	\$180	

**Part A** Complete the table to show the amount of money Vince receives for selling 35 bunches of flowers.

**Part B** On the lines below, explain the rule used in the pattern.

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**Part C** Vince pays \$45 each day for a place at the farmers' market. One day, he sold 8 bunches of flowers.

Did Vince receive enough money to pay for his place that day?

In the space below, show your work and explain your reasoning, and write your answer on the line.

Did Vince receive enough money? \_\_\_\_\_

**Mr. Simpson has 5 boxes of paintbrushes in his art room. After the first week of school, he buys 3 more paintbrushes. The expression below shows the total number of paintbrushes in Mr. Simpson's art room when  $p$  represents the number of brushes in each box.**

$$3 + p \times 5$$

**If each box contains 8 paintbrushes, how many total paintbrushes are in Mr. Simpson's art room?**

- A 18**
- B 28**
- C 43**
- D 55**

**Grade 7**

**Hector spent \$17 for a tube of paint and 5 brushes. The tube of paint cost \$8. Which equation can be used to find  $b$ , the cost of each brush?**

- A  $17 = 5b + 8$**
- B  $17 = 8b + 5$**
- C  $17b = 5 + 8$**
- D  $17 = b + 5 + 8$**

**Grade 8**

**What verbal expression is the same as the algebraic expression below?**

$$8 - 3x$$

- A three times a number minus eight**
- B three minus eight times a number**
- C eight times a number minus three**
- D eight minus three times a number**

The table below shows values for  $x$  and  $y$  when  $y = 3x + 2$ .

X	-2	-1	0	1	2
Y	-8	-5	-2	1	

Complete the table by finding the value of  $y$  when  $x = 2$

Plot the ordered pairs shown in the table onto the coordinate plane below. Then draw a line connecting the points.

A point on the line has an  $x$ -coordinate of 3. What is its corresponding  $y$ -coordinate?

Answer \_\_\_\_\_