

MATH 6

Unit 1

The collage features several overlapping worksheet pages. Visible content includes:

- WHOLE NUMBERS** and **PLACE VALUE**: A table for place value with columns for Hundred Millions, Ten Millions, and Millions. A handwritten '1' is in the Millions column. Below it, a number line shows $1,000,000 +$.
- DIVISIBILITY**: A section titled "A number is divisible by and Shade or highlight the". It lists divisibility rules for 2, 3, and 4 with circles containing numbers like 18, 25, 16, 24, 22, 36, 15, and 27.
- ADDITION Applications**: A word problem about text messages: "1. Carl bought... Since he purchased... has increased in value... Find the value of the home...".
- POWERS & Exponents**: A section with bullet points: "In the case of repeated multiplication... product is called a power using a base and an exponent." and "For example, we can write... Label the base and exponent." It includes a small diagram of a power.
- READING Powers**: A section asking to "Write each expression in words" with examples like 3^1 , 3^2 , 3^3 , 3^4 , 3^5 .
- PERFECT SQUARES**: A section with bullet points: "The result of squaring a number is called a... For example, $1^2 = \dots$, $2^2 = \dots$, and $3^2 = \dots$ are examples of perfect squares." and "Why are they called perfect squares? When do perfect squares create a perfect square? Draw below."
- NUMERICAL Expression**: A section with bullet points: "An expression that contains only... and..." and "Give three examples of numerical expressions below:".

WHOLE NUMBERS & OPERATIONS

NOTES • HOMEWORK • QUIZZES • TEST

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Unit 1 - Whole Numbers & Operations: Sample Unit Outline

	TOPIC	HOMEWORK
DAY 1	Whole Numbers: Place Value, Standard Form, Expanded Form, Rounding, Comparing	HW #1
DAY 2	Adding and Subtracting Whole Numbers	HW #2
DAY 3	Multiplying and Dividing Whole Numbers; Divisibility Rules	HW #3
DAY 4	Applications with Whole Number Operations (Mixed- All Operations)	HW #4
DAY 5	Quiz 1-1	None
DAY 6	Powers and Exponents	HW #5
DAY 7	Perfect Squares (includes extension with perfect cubes)	HW #6
DAY 8	Order of Operations	HW #7
DAY 9	Properties: Commutative, Associative, and Distributive (more properties coming in later units)	HW #8
DAY 10	Quiz 1-2	None
DAY 11	Prime vs. Composite Numbers; Prime Factorization	HW #9
DAY 12	Greatest Common Factor	HW #10
DAY 13	Least Common Multiple	HW #11
DAY 14	GCF and LCM Applications	HW #12
DAY 15	Quiz 1-3	None
DAY 16	Unit 1 Review	Study For Test
DAY 17	UNIT 1 TEST	None

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples									
WHOLE NUMBERS										
PLACE VALUE	Each digit in a whole number has a position in the number. The position of a digit in a whole number determines its value.									
	<table border="1"> <thead> <tr> <th colspan="3">MILLIONS</th> </tr> <tr> <th>Hundred Millions</th> <th>Ten Millions</th> <th>Millions</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>1</td> </tr> </tbody> </table>	MILLIONS			Hundred Millions	Ten Millions	Millions			1
MILLIONS										
Hundred Millions	Ten Millions	Millions								
		1								
	A number such as 1,423,700 is written using place value.									
	$1,000,000 + 400,000$									

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
ADDITION Applications	<p>1. Carl bought a house for \$192,950. Since he purchased the home, it has increased in value by \$28,270. Find the value of the home.</p> <p>2. Mya sent 4,329 text messages in September. This was 1,305 messages less than she sent in August. How many text messages did she send in August?</p>

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
POWERS & Exponents	<ul style="list-style-type: none"> In the case of repeated multiplication with the same factor, the product is called a power and can be written in exponential form using a base and an exponent. For example, we can write $3 \times 3 \times 3 \times 3$ as the power 3^4.

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
PERFECT SQUARES	<ul style="list-style-type: none"> The result of squaring a number is called a perfect square. For example, $1^2 = 1$, $2^2 = 4$, and $3^2 = 9$. These are examples of perfect squares. Why are they called perfect squares? When drawn geometrically, they are squares.

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
DIVISIBILITY	<p>A number is divisible by another number if the division results in a whole number. Shade or highlight the numbers that are divisible by the given number.</p> <p>Divisible by 2: 18, 25, 37, 54</p> <p>Divisible by 3: _____</p> <p>Divisible by 4: _____</p>

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
NUMERICAL EXPRESSION	<ul style="list-style-type: none"> An expression that contains only numbers and operations. Give three examples of numerical expressions below: _____
ORDER OF OPERATIONS	To simplify a numerical expression means to find its value. When there are several operations, there is a certain order they are done in to make sure everyone gets the same answer. We use the order of operations to find the value of a numerical expression with more than one operation.

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples						
MATH PROPERTIES	Sometimes changing the order or regrouping numbers in an expression makes calculations simpler. Math properties define rules that create equivalent expressions , that is two expressions with the same value. This is very useful when simplifying expressions!						
COMMUTATIVE PROPERTY (Ordering)	The commutative property defines rules for the ORDER of numbers when adding or multiplying.						
	<table border="1"> <thead> <tr> <th>Property</th> <th>Examples</th> </tr> </thead> <tbody> <tr> <td>Commutative Property of Addition Changing the order of numbers does not change their sum.</td> <td> <ul style="list-style-type: none"> _____ _____ </td> </tr> <tr> <td>Commutative Property of Multiplication Changing the order of numbers does not change their product.</td> <td> <ul style="list-style-type: none"> _____ _____ </td> </tr> </tbody> </table>	Property	Examples	Commutative Property of Addition Changing the order of numbers does not change their sum.	<ul style="list-style-type: none"> _____ _____ 	Commutative Property of Multiplication Changing the order of numbers does not change their product.	<ul style="list-style-type: none"> _____ _____
Property	Examples						
Commutative Property of Addition Changing the order of numbers does not change their sum.	<ul style="list-style-type: none"> _____ _____ 						
Commutative Property of Multiplication Changing the order of numbers does not change their product.	<ul style="list-style-type: none"> _____ _____ 						
	Use the commutative property to write an equivalent expression. Prove your result by simplifying each expression.						
	1. $15 + 12$ 2. $15 \cdot 3$						

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples						
COMMON FACTORS	<p>List the factors of 32: _____</p> <p>List the factors of 40: _____</p> <p>Factors shared by two or more numbers are called common factors of 32 and 40 in the Venn diagram. Show the factors of 32 and 40 in the Venn diagram.</p> <p>Factors of 32: _____ Factors of 40: _____</p>						
GREATEST COMMON FACTOR (GCF)	<p>The greatest common factor of a set of numbers is the largest number that divides each of the numbers. Using your lists or Venn diagram, what is the greatest common factor (GCF) of 32 and 40?</p> <p>Find the GCF of each set of numbers using factor lists.</p> <table border="1"> <tr> <td>1. 60 and 36</td> <td>2. 15 and 45</td> </tr> <tr> <td>3. 27 and 63</td> <td>4. 9 and 14</td> </tr> <tr> <td>5. 12, 20, and 56</td> <td>6. 36, 54, and 72</td> </tr> </table>	1. 60 and 36	2. 15 and 45	3. 27 and 63	4. 9 and 14	5. 12, 20, and 56	6. 36, 54, and 72
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3. 27 and 63	4. 9 and 14						
5. 12, 20, and 56	6. 36, 54, and 72						

Name: _____ Date: _____
 Topic: _____ Class: _____

Main Ideas/Questions	Notes/Examples
GCF Applications	<p>1. Molly is making party bags filled with her friends at her birthday party. She wants the maximum number of bags that have the same number of balloons and glow sticks.</p> <p>2. The seating at a local theater has 16 rows. The general admission section and the orchestra section and 243 seats. How many seats are in the general admission section?</p>
LCM Applications	<p>3. There are two traffic lights on a street. One light changes every 30 seconds and the other changes every 45 seconds. After how many minutes will the lights change together?</p> <p>4. Ray has wood blocks that are 3 inches tall. He wants to build a tower that is 48 inches tall. How many blocks does he need?</p>
MIXED Applications	<p>Determine whether you will use a greatest common factor or least common multiple to solve.</p> <p>5. Troy has a 45-inch piece of wire that he wants to cut into smaller pieces. What is the longest length he can cut each piece so that each piece is equally sized?</p>

Name: _____ Date: _____

Unit 1 Test Study Guide (Whole Numbers & Operations)

Topic 1: Place Value & Rounding
Directions: Write each number in standard form.

- Sixty-eight thousand, five hundred four
- Seventeen million, three hundred fifty-two thousand

Directions: Write each number in word form.

- 4,070
- 5,320,291

Directions: Round each number to the place indicated.

5. 16,473; thousands	6. 839,195,002; ten millions
7. 2,463,297; hundred thousands	8. 5,483; tens

Topic 2: Whole Number Operations
Directions: Find each sum, difference, product, or quotient.

9. $3,498 + 532,162$	10. $10,032 - 6,784$
11. $728 \cdot 16$	12. $4,728(63)$

Name: _____ Date: _____

Unit 1 Test Whole Numbers & Operations

1. Write the number below in standard form.
 "Six hundred four thousand, seven hundred twenty-three"

2. Which statement about the number below is true?
 752,348,106
 A. There is a 3 in the thousands place.
 B. There is a 4 in the hundreds place.
 C. There is a 7 in the hundred thousands place.
 D. There is a 5 in the ten millions place.

Use the number 12,814,072 for questions 3 and 4.

3. Round the number to the nearest ten thousand.

4. Round the number to the nearest million.

5. Find the product of 1,823 and 29.

6. The population of a city was 32,062 in 2010. This was 4,517 less than the population in 2000. Find the population of the town in 2000.

7. A school has a budget of \$3,500 to spend on calculators. If each calculator costs \$16, how many can they purchase?

8. The size of each of the Great Lakes, in square miles, is given in the table below. How much bigger is Lake Huron than Lake Erie?

Lake	Size
Lake Erie	9,940
Lake Huron	23,012
Lake Michigan	22,394
Lake Ontario	7,320
Lake Superior	31,700

A. 217
 B. 218
 C. 219
 D. 220