Table of Contents

Introduction
NCTM Standards
Summary of Concepts and Materials
Unit 1: Casting Out Nines
Facts and Reminders—Divisibility by 9—Word Problems—Using the Calculator
Unit 2: No Leftovers
Facts and Reminders—Divisibility by 10, 100, and 1000—Divisibility by 2, 5, and 25—Divisibility by 3 and 4
Unit 3: Dynamic Decimals
Facts and Reminders—Decimal Values—Adding and Subtracting Decimals—
Multiplying Decimals
Unit 4: Great Googols
Facts and Reminders—Working with Large Numbers—Multiplying with Large Numbers—Dividing with Large Numbers
Unit 5: The Powers That Be
Facts and Reminders—Computing with Exponents—Applications—Calculator Applications
Unit 6: Scientific Notation
Facts and Reminders—Converting Large Numbers to Scientific Notation—Converting Scientific Notation to Large Numbers—Using Scientific Notation with Negative Exponents
Unit 7: Be Square
Facts and Reminders—Calculating Square Roots—Approximate Square Roots—Working with Square Roots
Unit 8: As Big As
Facts and Reminders—Working with Ratios—Working with Proportions—Proportions
Unit 9: Chances Are
Facts and Reminders—Flipping Pennies—Flipping Three Pennies—Rolling Dice
Unit 10: Pascal's Triangle
Facts and Reminders—Upside-down Triangles—Working with Pascal's Triangle—Sequences with Pascal's Triangle
Unit 11: PEMDAS
Facts and Reminders—Easy Applications—Parentheses and Exponents—Using the Calculator
Unit 12: The Rules
Facts and Reminders—Function Tables—Applying Function Rules—Graphing Functions
Unit 13: Interesting Integers
Facts and Reminders—Adding Signed Numbers on the Number Line—Adding Signed Numbers—Multiplying Signed Numbers
Unit 14: Introducing Algebra
Facts and Reminders—Evaluating Expressions—Solving Equations—Working with Equations
Unit 15: The Super Sieve
Facts and Reminders—Prime Numbers to 100—Using the Sieve—Working with Larger Primes
Unit 16: Secret Sequences
Facts and Reminders—Simple Sequences—Harder Sequences—Fibonacci Sequence

Table of Contents (cont.)

Unit 17: Fancy Factors
Facts and Reminders—Factors and Common Factors—Greatest Common Factor (GCF)—Using the Greatest Common Factor
Unit 18: Mighty Multiples
Facts and Reminders—Working with Common Multiples—Least Common Multiple (LCM)—Lowest Common Denominator (LCD)
Unit 19: Flat Faces
Facts and Reminders—Assembling the Geometric Solids—Characteristics of Geometric Solids—Applications
Unit 20: Time and Again
Facts and Reminders—Creating a Time Line—Working with Time Lines
Unit 21: Calendar Computation
Facts and Reminders—A Calendar Month—Computing on a Calendar—Leap Year
Unit 22: Piggy Bank Math 91
Facts and Reminders—Coin Combinations Less Than a Dollar—Coin Combinations More Than a Dollar—Coin Combinations and Dollar Bills
Unit 23: Looks Like
Facts and Reminders—Identifying Congruent and Similar Figures—Working with Congruence and Similarity—Creating Similar Figures
Unit 24: What's Your Percentage?
Facts and Reminders—Computing Percents Under 100—Computing Percents Over 100—Converting Fractions to Percents
Unit 25: Who's the Smartest?
Facts and Reminders—Using Charts—Applications—Extensions
Unit 26: Cute Quadrilaterals
Unit 27: Dot to Dot
Facts and Reminders—Plotting Coordinates (Positive Numbers)—Coordinates (Positive and Negative)—Working with Four Quadrants
Unit 28: Tantalizing Tessellations
Facts and Reminders—Regular Tessellations—Tessellating Polygons—Tessellation Techniques
Unit 29: Shapely Numbers
Facts and Reminders—Square Numbers—Triangular Numbers—Hexagonal Numbers (Centered)
Unit 30: Measures of Central Tendency
Facts and Reminders—Range and Mode—Determining the Median—Determining the Arithmetic Mean
Unit 31: How Hot Is It? 127
Facts and Reminders—Fahrenheit Scale—Celsius Scale—Using and Comparing Temperature Scales
Unit 32: Oddball Patterns
Facts and Reminders—Palindromes—Unusual Number Patterns—Puzzles and Patterns
Answer Key

What's Your Percentage?



Facts and Reminders

Percents

The math term *percent* means "of one hundred." A percent is a fraction in which the denominator is 100 and the numerator expresses some part of the 100. A percent can be expressed as a fraction, a decimal, or with the percent sign (%).

Table of Equivalent Values

Fraction	Decimal	Percent
200/100	2.00	200%
150/100	1.50	150%
100/100	1.00	100%
90/100 (9/10)	.90	90%
75/100 (3/4)	.75	75%
60/100 (3/5)	.60	60%
50/100 (1/2)	.50	50%
25/100 (1/4)	.25	25%
10/100 (1/10)	.10	10%
1/100	.01	1%

The table above shows the equivalent values of percents, decimals, and fractions—in terms of 100 and in reduced form. (*Note:* Decimals under 10% must have a zero after the decimal point and before the other digit, as in .01.)

Computing Percentages

To compute a percentage of a specific number, follow the steps below.

- 1. Change the percent to the decimal form.
- 2. Multiply the decimal form times the specific number.
- 3. Count all places to the right of the decimal points in the problem.
- 4. Place the decimal the same number of places to the right of the decimal in the answer.

Percentages less than 100:
$$30\% \text{ of } 80 = 80$$

 $\frac{\text{x} \cdot 30}{24.00}$ Answer: 30% of 80 = 24
 $20\% \text{ of } 62 = 62$
 $\frac{\text{x} \cdot 20}{12.40}$ Answer: 20% of 62 = 12.4

Percentages greater than 100:
$$200\% \text{ of } 75 = 75$$

 $\frac{\text{x } 2.00}{150.00}$ Answer: 200% of 75 = 150 (larger than 75)

(*Note*: All percentages greater than 100 will yield a number larger than the value with which you started.)

Cute Quadrilaterals

Perimeters of Quadrilaterals

One way to compute the perimeter of a quadrilateral is to add the lengths of all four sides. This figure has a perimeter of 10 cm.

3 cm

$$3 \text{ cm} + 2 \text{ cm} + 3 \text{ cm} + 2 \text{ cm} = 10 \text{ cm}$$

 $P = 10 \text{ cm}$

Directions: Use the Facts and Reminders page for this unit. Label each geometric figure by the most precise name. Compute the perimeter of each figure. Remember to name the units—inches, centimeters, meters, etc.











