



404238-EB

MATH

GR

6

For College and Career Readiness

Preparation and Practice



- Prerequisite Math Skills
- Job-Specific Concepts
- Age-Appropriate Jobs
- Careers for the Masses
- STEM Careers



Table of Contents

Introduction to the Teacher	1	Unit 6: The Mathematics of Bankers.....	48
Age-Appropriate Jobs		Prerequisite Skill Practice:	
Unit 1: The Mathematics of Lemonade		Integers in the Real World	49
Stands.....	2	Which One Is Greater	50
Prerequisite Skill Practice:		Percent Problems	51
Ratios and Proportions	3	Real-Life Application:	
Operations with Rational Numbers	4	The Mathematics of Bankers	52
Working With Money.....	5	STEM Careers	
Real-Life Application:		Unit 7: The Mathematics of Veterinarians	57
The Mathematics of Lemonade Stands	6	Prerequisite Skill Practice:	
Unit 2: The Mathematics of Dog Walking	11	Writing Equations.....	58
Prerequisite Skill Practice:		Statistical Questions	59
Variable Expressions and Inequalities	12	Graphing Data Sets	60
Least Common Multiple	13	Real-Life Application:	
Statistical Quantities	14	The Mathematics of Veterinarians	61
Real-Life Application:		Unit 8: The Mathematics of Computer	
The Mathematics of Dog Walking	15	Programming	66
Unit 3: The Mathematics of Fundraisers	21	Prerequisite Skill Practice:	
Prerequisite Skill Practice:		Operations With Rational Numbers	67
Writing Ratios	22	Algebraic Equations.....	68
Division With Multi-Digit Numbers	23	Geometric Calculations.....	69
Unit Rates	24	Real-Life Application:	
Real-Life Application:		The Mathematics of Computer	
The Mathematics of Fundraisers	25	Programming	70
Careers for the Masses		Unit 9: The Mathematics of Air Traffic	
Unit 4: The Mathematics of Educators	30	Controllers	75
Prerequisite Skill Practice:		Prerequisite Skill Practice:	
Writing Equations.....	31	Distance, Rate, and Time Problems	76
Area of Rectangles	32	Algebraic Equations	77
Graphing Polygons	33	Substitute to Verify Equations.....	78
Real-Life Application:		Real-Life Application:	
The Mathematics of Educators	34	The Mathematics of Air Traffic	
Unit 5: The Mathematics of Law		Controllers	79
Enforcement.....	39	Answer Keys.....	84
Prerequisite Skill Practice:			
Ratios and Proportions	40		
Statistical Quantities	41		
Percents.....	42		
Real-Life Application:			
The Mathematics of Law Enforcement	43		



Name: _____ Date: _____

Unit 3: The Mathematics of Fundraisers

Prerequisite Skill Practice—Division With Multi-Digit Numbers

Directions: For each of the following, divide the numbers using the standard algorithm. Show your work. The first problem has been worked out as an example.

<p>1. $13,410 \div 47$</p> $\begin{array}{r} 285 \text{ r } 15 \\ 47 \overline{)13410} \\ \underline{- 94} \\ 401 \\ \underline{- 376} \\ 250 \\ \underline{- 235} \\ 15 \end{array}$	<p>2. $2,421 \div 5$</p>
<p>3. $86,450 \div 91$</p>	<p>4. $9,304 \div 19$</p>
<p>5. $3,392 \div 4$</p>	<p>6. $3,168 \div 11$</p>
<p>7. $1,627.2 \div 72$</p>	<p>8. $6,111.6 \div 22$</p>

Name: _____ Date: _____

Unit 3: The Mathematics of Fundraisers

Prerequisite Skill Practice—Unit Rates

Directions: Solve each problem and show your work. The first problem has been worked out as an example.

<p>1. Mitchell wrote 12 pages in 6 hours. At this rate, how many pages will he have written in 10 hours?</p> <p style="text-align: center;">$12 \div 6 = 2$ Mitchell wrote 2 pages per hour. $2 \cdot 10 = 20$ Mitchell will have written 20 pages in 10 hours.</p>	<p>2. Lucy took 9 hours to read a 270-page book. At this rate, how long will it take her to read a 390-page book?</p>
<p>3. Kaniah can type 10 words in 15 seconds. How many words does she type per minute?</p>	<p>4. Nine lemons cost \$3.24. What is the cost of one lemon?</p>
<p>5. Mai earns \$27 for 4.5 hours of babysitting. How much does she make per hour?</p>	<p>6. Davon hikes 2.25 miles in 30 minutes. If he hikes for 7 hours at the same rate, how far will he have gone?</p>
<p>7. Fifteen gallons of gas cost \$37.50. At this rate, how much gas can you get for \$60?</p>	<p>8. You ran 6 miles in an hour. At this rate, how long will it take you to run 18 miles?</p>

- b) Sample answer: I will tell my friend the median because the mean and median are about the same, and the median is a whole number.

Unit 3: Fundraisers

Writing Ratios (p. 22)

Answers will vary. The following answers represent a sample of possible answers.

- 2) The ratio of green apples to red apples is 9:7. Out of 16 apples in Maurice's cart, 9 are green.
- 3) The ratio of Wii games to PS3 games is 8:6. For every 3 PS3 games Sarah has, she has 4 Wii games.
- 4) The ratio of black circles to gray circles is 1:1. The ratio of white circles to total circles is 4:12.
- 5) For every 7 girls in Ms. Holt's classroom, there are 5 boys. The ratio of girls to boys in Ms. Holt's classroom is 14:10.
- 6) Out of 30 ice cream cones sold, 12 were vanilla. The ratio of vanilla cones to chocolate cones is 2:3.
- 7) The ratio of red squares to blue triangles is 3:4. The ratio of blue triangles to total shapes is 4:7.
- 8) For every 25 bags of popcorn sold, 42 boxes of candy were sold. The ratio of bags of popcorn to boxes of candy sold is 125:210.

Division With Multi-Digit Numbers (p. 23)

$$\begin{array}{r} 2) \quad 484 \text{ r } 1 \\ 5 \overline{)2421} \\ \underline{-20} \\ 42 \\ \underline{-40} \\ 21 \\ \underline{-20} \\ 1 \end{array}$$

$$\begin{array}{r} 3) \quad 950 \\ 91 \overline{)86450} \\ \underline{-819} \\ 455 \\ \underline{-455} \\ 00 \end{array}$$

$$\begin{array}{r} 4) \quad 489 \text{ r } 13 \\ 19 \overline{)9304} \\ \underline{-76} \\ 170 \\ \underline{-152} \\ 184 \\ \underline{-171} \\ 13 \end{array}$$

$$\begin{array}{r} 5) \quad 848 \\ 4 \overline{)3392} \\ \underline{-32} \\ 19 \\ \underline{-16} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

$$\begin{array}{r} 6) \quad 288 \\ 11 \overline{)3168} \\ \underline{-22} \\ 96 \\ \underline{-88} \\ 88 \\ \underline{-88} \\ 0 \end{array}$$

$$\begin{array}{r} 7) \quad 22.6 \\ 72 \overline{)1627.2} \\ \underline{-144} \\ 187 \\ \underline{-144} \\ 432 \\ \underline{-432} \\ 0 \end{array}$$

$$\begin{array}{r} 8) \quad 277.8 \\ 22 \overline{)6111.6} \\ \underline{-44} \\ 171 \\ \underline{-154} \\ 171 \\ \underline{-154} \\ 176 \\ \underline{-176} \\ 0 \end{array}$$

Unit Rates (p. 24)

- 2) Lucy read $270 \div 9$ or 30 pages each hour. It will take Lucy $390 \div 30$ or 13 hours to read 390 pages.
- 3) There are four 15-second periods in 1 minute. So Kaniah can type $10 \cdot 4$ or 40 words per minute.
- 4) $3.24 \div 9 = 0.36$
The cost for one lemon is \$0.36.
- 5) $27 \div 4.5 = 6$
Mai earns \$6 per hour.
- 6) There are two 30-minute periods in 1 hour. So Davon can hike $2.25 \cdot 2$ or 4.5 miles per hour. If he hikes for 7 hours, then David will hike $4.5 \cdot 7$ or 31.5 miles.
- 7) If it costs \$37.50 for 15 gallons, then the unit cost is $37.50 \div 15$ or \$2.50/gallon. Then, since $60 \div 2.50$ is 24, I can get 24 gallons of gas for \$60.
- 8) I can run 6 miles in 1 hour and $6 \cdot 3$ is 18. So it will take me $1 \cdot 3$ or 3 hours to run 18 miles.