

Table of Contents**UNIT 1 NUMBER SENSE**

- 1 Place Value
- 2 Comparing and Ordering Integers
- 3 Absolute Value
- 4 Scientific Notation
- 5 Scientific Notation
- 6 Squares and Square Roots
- 7 Exponents
- 8 Exponents
- 9 Fractional and Negative Exponents
- 10 Equivalent Fractions
- 11 Decimals and Fractions
- 12 Finding Percents
- 13 Estimation and Rounding
- 14 Mixed Practice
- 15 Mixed Practice
- 16 Take a Test Drive
- 17 Take a Test Drive

UNIT 2 OPERATIONS WITH WHOLE NUMBERS AND DECIMALS

- 18 Addition
- 19 Adding Whole Numbers
- 20 Adding Whole Numbers
- 21 Adding Decimals
- 22 Adding Decimals
- 23 Adding Integers
- 24 Addition Practice
- 25 Addition Practice
- 26 Subtracting Whole Numbers
- 27 Subtracting Whole Numbers
- 28 Subtracting Decimals
- 29 Subtracting Integers
- 30 Addition and Subtraction Equations

- 31 Subtraction Practice
- 32 Subtraction Practice
- 33 Factors and Multiples
- 34 Factors and Multiples
- 35 Prime and Composite Numbers
- 36 Multiplication
- 37 Multiplying Whole Numbers
- 38 Multiplying Whole Numbers
- 39 Multiplying Whole Numbers
- 40 Multiplying Decimals
- 41 Multiplying Integers
- 42 Dividing Whole Numbers
- 43 Dividing Whole Numbers
- 44 Dividing Decimals
- 45 Dividing Decimals
- 46 Dividing Integers
- 47 Mixed Practice
- 48 Mixed Practice
- 49 Take a Test Drive
- 50 Take a Test Drive

UNIT 3 OPERATIONS WITH FRACTIONS

- 51 Adding and Subtracting Fractions
- 52 Adding and Subtracting Fractions
- 53 Adding and Subtracting Integer Fractions
- 54 Addition and Subtraction of Fractions Practice
- 55 Addition and Subtraction of Fractions Practice
- 56 Multiplying Fractions
- 57 Multiplying Fractions
- 58 Dividing Fractions

Table of Contents

- 59 Dividing Fractions
- 60 Multiplying and Dividing Fractions by Integers
- 61 Multiplication and Division of Fractions Practice
- 62 Multiplication and Division of Fractions Practice
- 63 Take a Test Drive
- 64 Take a Test Drive

UNIT 4 PRE-ALGEBRA

- 65 Order of Operations
- 66 Order of Operations
- 67 Evaluating Mathematical Expressions
- 68 Evaluating Mathematical Expressions
- 69 Solving Equations
- 70 Solving Equations
- 71 Solving Equations
- 72 Solving Inequalities
- 73 Writing Equations
- 74 Take a Test Drive
- 75 Take a Test Drive

UNIT 5 MEASUREMENT AND GEOMETRY

- 76 Elapsed Time
- 77 Measuring Temperature
- 78 Measuring Weight or Mass
- 79 Converting between U.S. Customary and Metric

- 80 Measuring Length
- 81 Measuring Capacity
- 82 Converting Between U.S. Customary and Metric
- 83 Naming Angles
- 84 Complementary and Supplementary Angles
- 85 Perimeter
- 86 Circumference
- 87 Triangles
- 88 Areas of Parallelograms
- 89 Area of a Circle
- 90 Areas of Triangles and Trapezoids
- 91 Areas of Irregular Figures
- 92 Surface Area and Volume of Rectangular Prisms
- 93 Surface Area and Volume of Triangular Prisms
- 94 Surface Area and Volume of Cylinders
- 95 Take a Test Drive
- 96 Take a Test Drive
- 97 Practice Test
- 98 Practice Test
- 99 Practice Test
- 100 Practice Test
- Tracking Sheet
- Answer Key

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Introduction

The Advantage Math Series for grades 3–8 offers instruction and practice for key skills in each math strand recommended by the National Council for Teachers of Mathematics (NCTM), including

- numeration and number theory
- operations
- geometry
- measurement
- patterns, functions, and algebra
- data analysis and probability
- problem solving

Take a look at all the advantages this math series offers . . .

Strong Skill Instruction

- The **teaching component** at the top of the activity pages provides the support students need to work through the book independently.
- Plenty of **skill practice** pages will ensure students master essential math computation skills they need to increase their math fluency.
- A **problem-solving strand** is woven within skill practice pages to offer students an opportunity to practice critical thinking skills.

teaching component

27

Subtraction—Regrouping

When subtracting, look at the ones column first. If the bottom digit is greater than the top digit, you need to regroup.

Circle yes or no to tell if you need to regroup. Then subtract to solve.

1	$\begin{array}{r} 43 \\ -8 \\ \hline \end{array}$	yes	$\begin{array}{r} 28 \\ -16 \\ \hline \end{array}$	no	$\begin{array}{r} 43 \\ -15 \\ \hline \end{array}$	yes	$\begin{array}{r} 57 \\ -28 \\ \hline \end{array}$	no
2	$\begin{array}{r} 80 \\ -57 \\ \hline \end{array}$	yes	$\begin{array}{r} 52 \\ -12 \\ \hline \end{array}$	no	$\begin{array}{r} 71 \\ -29 \\ \hline \end{array}$	no	$\begin{array}{r} 63 \\ -44 \\ \hline \end{array}$	no
3	$\begin{array}{r} 32 \\ -23 \\ \hline \end{array}$	yes	$\begin{array}{r} 87 \\ -48 \\ \hline \end{array}$	no	$\begin{array}{r} 35 \\ -27 \\ \hline \end{array}$	no	$\begin{array}{r} 46 \\ -18 \\ \hline \end{array}$	no
4	$\begin{array}{r} 23 \\ -4 \\ \hline \end{array}$	yes	$\begin{array}{r} 30 \\ -22 \\ \hline \end{array}$	no	$\begin{array}{r} 51 \\ -15 \\ \hline \end{array}$	yes	$\begin{array}{r} 72 \\ -33 \\ \hline \end{array}$	no
5	$\begin{array}{r} 46 \\ -37 \\ \hline \end{array}$	yes	$\begin{array}{r} 60 \\ -26 \\ \hline \end{array}$	no	$\begin{array}{r} 55 \\ -37 \\ \hline \end{array}$	no	$\begin{array}{r} 32 \\ -8 \\ \hline \end{array}$	no

skill practice

31

Addition and Subtraction

Solve.

1 $7 + 4 =$ $8 + 9 =$ $5 + 6 =$ $5 + 8 =$

2 $16 + 12 =$ $8 + 21 =$ $11 - 8 =$ $14 - 6 =$

3 $15 - 8 =$ $18 - 9 =$ $19 - 11 =$ $23 - 12 =$

4	$\begin{array}{r} 21 \\ +38 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ +14 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ +40 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ +60 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ +42 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ +53 \\ \hline \end{array}$
5	$\begin{array}{r} 98 \\ -53 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ -50 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ -42 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ -37 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ -53 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ -50 \\ \hline \end{array}$
6	$\begin{array}{r} 342 \\ +406 \\ \hline \end{array}$	$\begin{array}{r} 732 \\ +253 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ +216 \\ \hline \end{array}$	$\begin{array}{r} 834 \\ +155 \\ \hline \end{array}$	$\begin{array}{r} 930 \\ +58 \\ \hline \end{array}$	$\begin{array}{r} 365 \\ +532 \\ \hline \end{array}$
7	$\begin{array}{r} 735 \\ -314 \\ \hline \end{array}$	$\begin{array}{r} 839 \\ -638 \\ \hline \end{array}$	$\begin{array}{r} 956 \\ -433 \\ \hline \end{array}$	$\begin{array}{r} 648 \\ -521 \\ \hline \end{array}$	$\begin{array}{r} 597 \\ -364 \\ \hline \end{array}$	$\begin{array}{r} 475 \\ -33 \\ \hline \end{array}$

problem solving

43

Multiplication

When you multiply large numbers by a 1-digit number, multiply each digit of the top number by the bottom number, starting with the ones place. Regroup if the product is 10 or above.

Solve.

1	$\begin{array}{r} 45 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ \times 1 \\ \hline \end{array}$
2	$\begin{array}{r} 19 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 152 \\ \times 9 \\ \hline \end{array}$	$\begin{array}{r} 261 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 350 \\ \times 2 \\ \hline \end{array}$
3	$\begin{array}{r} 428 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 579 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 920 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 387 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 206 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 713 \\ \times 6 \\ \hline \end{array}$
4	$\begin{array}{r} 179 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 803 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 263 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 3917 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5782 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 14279 \\ \times 5 \\ \hline \end{array}$

5 At Panchito's Restaurant, 310 burritos are sold each year. Panchito's has been open for 5 years. How many burritos have been sold since Panchito's opened?

6 Plane tickets from Miami, Florida to Denver, Colorado, cost \$522 each. The 4 members of the Wilson family are buying tickets from Miami to Denver. How much will the tickets cost?

7 Megan bought 5 large bags of peanuts. There are 210 peanuts in each bag. How many peanuts does she have in all?

Introduction

- **Mixed-practice pages** include a variety of math concepts on one workbook page. This challenges students to think through each problem rather than rely on a predictable format.

Assessment

- The “Take a Test Drive” pages provide practice using a **test-taking** format such as those included in national standardized and proficiency tests.
- The **tracking sheet** provides a place to record the number of right answers scored on each activity page. Use this as a motivational tool for students to strive for 100% accuracy.

Answer Key

- Answers for each page are provided at the back of the books to make **checking answers quick and easy**.

Name _____

Mixed Practice

53 Solve.

1 $\frac{47}{\times 3}$ $6\overline{)72}$ $\frac{26.37}{+ 3.9}$ $\frac{29}{\times 63}$ $2\overline{)58}$ $7\overline{)105}$

2 $\frac{40}{-53}$ $\frac{34}{\times 25}$ $8\overline{)168}$ $7\overline{)322}$ $\frac{5763}{-3294}$ $\frac{3709}{-34.5}$

3 $5\overline{)370}$ $\frac{53}{\times 23}$ $\frac{146}{\times 13}$ $\frac{453}{\times 84}$ $\frac{351}{+873}$ $5\overline{)3415}$

4 $9\overline{)7038}$ $\frac{746}{\times 207}$ $4\overline{)388}$ $\frac{287}{\times 32}$ $\frac{2974}{+1098}$ $\frac{472}{\times 965}$

5 The band called the Screeners is playing in town for the next 4 nights. There are 42 seats in the club and all 4 shows are sold out. How many tickets were sold in all?

6 Billy, Martha, and Tom just won \$72. If they split the money evenly, how many dollars will each friend have?

mixed practice

Name _____

Take a Test Drive

16 Fill in the bubble beside the correct answer.

1 Which is $1,63,000,000,000 + 7,500,000 + 4,700 + 6$ in standard form?
 A 163,754,706
 B 163,750,476
 C 163,007,504,706
 D 163,070,504,706

2 Which is the standard form for 6.3×10^{-2} ?
 A 0.0063
 B 0.00063
 C 0.000063
 D 0.0000063

3 Which is greater than 1,743,863?
 A 1,743,801
 B 1,743,871
 C 1,743,638
 D 1,743,781

4 Which is the square root of 25?
 A 3
 B 4
 C 5
 D 9

5 Which is equivalent to $-[(4)^2]^2$?
 A -8
 B 8
 C -16
 D 16

6 $8^2 \cdot 8^{-2} =$
 A 8
 B 8⁻⁷
 C 8²
 D 8⁻³

7 Which is equivalent to $35,700,000$?
 A 35.7×10^4
 B 357×10^4
 C 3.57×10^7
 D 0.357×10^7

8 Which is equivalent to $3^2 \times (2^2)^2$?
 A 48
 B 63
 C 64
 D 65

test-taking format

Name _____

Math Grade 3 Tracking Sheet

Activity	Possible	My Score	Activity	Possible	My Score	Activity	Possible	My Score
Unit 1								
1	8		26	27		53	12	
2	16		27	20		54	10	
3	14		28	30		55	8	
4	18		29	18		56	8	
5	26		30	30		57	6	
6	19		31	20		58	6	
7	19		32	18		59	8	
8	20		33	8		60	10	
9	24		34	8		61	8	
10	24		35	11		62	4	
Unit 2								
11	8		36	12		63	8	
12	8		37	32		64	8	
13	36		38	32		65	8	
14	36		39	32		66	9	
15	27		40	32		67	9	
16	27		41	33		68	7	
17	20		42	33		69	6	
18	30		43	33		70	6	
19	18		44	33		71	5	
20	30		45	33		72	5	
Unit 3								
21	8		46	23		73	7	
22	8		47	23		74	6	
23	36		48	23		75	8	
24	36		49	33		76	8	
25	27		50	33		77	7	
Unit 4								
Unit 5								
Unit 6								
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Unit 93								
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Unit 96								
Unit 97								
Unit 98								
Unit 99								
Unit 100								

tracking sheet

1

Place Value

Billions			Millions			Thousands			Hundreds					
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
10^{11}	10^{10}	10^9	10^8	10^7	10^6	10^5	10^4	10^3	10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}
1	8	4	5	2	7	3	6	9	1	4	6			
												1	8	3
													5	

- ★ Standard form: 184,527,369,146
1.835
- Short word form: 184 billion, 527 million, 369 thousand, 1 hundred, 46
1 and 835 thousandths
- Expanded form: $1 \times 10^{11} + 8 \times 10^{10} + 4 \times 10^9 + 5 \times 10^8 + 2 \times 10^7 + 7 \times 10^6 + 3 \times 10^5 + 6 \times 10^4 + 9 \times 10^3 + 1 \times 10^2 + 4 \times 10^1 + 6 \times 10^0 + 1 \times 10^{-1} + 8 \times 10^{-2} + 3 \times 10^{-3} + 5 \times 10^{-4}$

Write each number in standard form.

- 105 thousand, 9 hundred, 32 _____
- six hundred forty-two billion, three hundred thousand _____
- $150,000,000 + 8,000,000 + 6,000 + 5$ _____
- 437 billion, 3 million _____
- fifty-three million, two hundred five thousand _____
- $797,000,000,000 + 619,000,000 + 132$ _____
- eleven million, six thousand, seven _____
- 84 billion, 37 thousand, 8 hundred _____

Write the value of the 4 in each number.

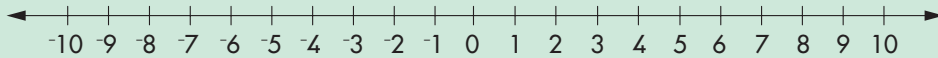
- 234,789 _____ 747,365,207 _____
- 67,827,412 _____ 436,823,706,001 _____
- 43,625,103 _____ 693,584,321,787 _____
- 154,600,327,000 _____ 270,386,431 _____

Comparing and Ordering Integers

2

Integers are all the counting numbers (1, 2, 3, 4 . . .), their opposites (-1, -2, -3, -4 . . .) and zero (0).

Comparing numbers on a number line will help you tell if one is greater than or less than another.



The opposites of the counting numbers are the negative integers.

Zero is the center.

The counting numbers are the positive integers.

If a number is to the left of a number on the number line, it is less than the other.

If it is to the right, it is greater than the other.

Complete the number sentence.

1 1,257 1,572

9,800 7,327

2 65,382 73,721

10,121 10,114

3 827,561 622,871

1,786,521 1,973,804

4 167,256,121 17,658,910

986,420 73,987,969

5 38,176,200 24,298,783

15,627,984,120 15,631,256

Order the numbers from least to greatest.

6 987 897 879 978 _____

7 83,586 58,683 68,638 _____

8 107,432,014 423,413,201 407,210,740 _____

9 8,400,327,937 8,437,293,310 8,400,325,831 _____

10 73,627,003 73,603,270 73,302,670 _____

Solve.

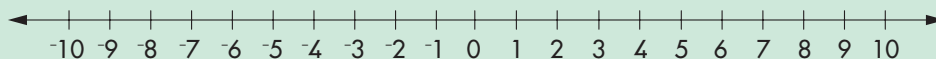
11 The attendance for the Yankees game was 37,284 on Tuesday, 37,842 on Wednesday, and 34,873 on Thursday. Which day had the lowest attendance?

12 Which day had the highest?

Absolute Value

3

The absolute value of an integer is equal to its distance from 0 on a number line.



The absolute value of 3 is 3. The absolute value of -3 is also 3.

$|3| = 3$ because 3 is three units to the right of 0.

$|-3| = 3$ because -3 is three units to the left of 0.

Keep in mind that the absolute value bars work differently from parentheses.

$-(-3) = +3$. However, $-|-3| = -3$. Here's why:

The absolute value of -3 is 3. The negative of an absolute value is a negative number. Try these:

Simplify $|-7|$.

$$|-7| = |7|$$

Simplify $-|(-2)^2|$.

$$-|(-2)^2| = -|4| = -4$$

Simplify $|0-6|$.

$$|0-6| = |-6| = 6$$

Simplify $|2+3(-4)|$.

$$|2+3(-4)| = |2-12| = |-10| = 10$$

Simplify.

1 $|-5| =$ _____ $|0-3| =$ _____ $|7| =$ _____

2 $|3-6| =$ _____ $|10-5| =$ _____ $|157-37| =$ _____

3 $|0(-2)| =$ _____ $|6(3)| =$ _____ $|-2(-6)| =$ _____

4 $-|-3| =$ _____ $-|7| =$ _____ $-|6(-2)| =$ _____

5 $-|(-5)^2| =$ _____ $|(-8)^3| =$ _____ $-|(-6)^4| =$ _____

6 $-|-2|^2 =$ _____ $-|4|^3 =$ _____ $(-|3|)^3 =$ _____

Scientific Notation



★ Scientific notation is used in place of very large or very small numbers. Numbers in scientific notation are written as the product of two factors—a number (either an integer or a decimal) and a power of 10.

$$1,500,000 = 1.5 \times 10^6$$

The number has only one digit to the left of the decimal point.

The power of 10 indicates how many places the decimal point was moved.

Write these numbers using scientific notation.

- | | | |
|---------------------|------------------------|------------------------|
| 1 700 = _____ | 650 = _____ | 1,300 = _____ |
| 2 137,000 = _____ | 98,700 = _____ | 1,400,000 = _____ |
| 3 8,000,000 = _____ | 10,000,000 = _____ | 37,600,000 = _____ |
| 4 9,875,000 = _____ | 68,000,000,000 = _____ | 25,930,000,000 = _____ |

Write these numbers in standard form.

- | | | |
|------------------------------|----------------------------|----------------------------|
| 5 $1.5 \times 10^2 =$ _____ | $8 \times 10^4 =$ _____ | $6.3 \times 10^1 =$ _____ |
| 6 $1.6 \times 10^3 =$ _____ | $1.78 \times 10^5 =$ _____ | $1.04 \times 10^2 =$ _____ |
| 7 $7.69 \times 10^7 =$ _____ | $2.2 \times 10^9 =$ _____ | $1.4 \times 10^6 =$ _____ |
| 8 $4.78 \times 10^4 =$ _____ | $2.76 \times 10^5 =$ _____ | $1.87 \times 10^8 =$ _____ |