

SPECTRUM[®]

MATH

Grade 5

On select pages, you will see a QR code for an instructional video that corresponds to the skills. Videos are also available on carsondellosa.com and YouTube @CarsonDellosaPublishingGroup.

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Spectrum[®]

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Spectrum Introduction

For more than 20 years, Spectrum® workbooks have been the solution for helping students meet and exceed learning goals. Each title in the Spectrum workbook series offers grade-appropriate instruction and reinforcement in an effective sequence for learning success.

Spectrum partners with you in supporting your student's educational journey every step of the way! This book will help them navigate Grade 5 math and will give you the support you need to make sure your student learns everything they need to know. Inside you will find:

Chapter Introductions

These introductions provide useful information about the chapter. They may include:

Helpful Definitions

These terms either appear in the chapter or are important for the skills being taught.

Skills Checklist

This checklist helps ensure your student is practicing grade-level skills.

Chapter 5: Expressions and Equations

Helpful Definitions

exponent: a number that represents repeated multiplication of the number by itself

base: the number that is multiplied

$2^3 = 2 \cdot 2 \cdot 2 = 8$
2 is the base
3 is the 3th power

expression: a combination of numbers, variables, and of at least one operation

equation: a number sentence that contains an equal sign

term: a number, variable, product, or quotient in an algebraic expression

variable: a symbol, usually a letter of the alphabet, that stands for an unknown number or quantity

coefficient: a number that multiplies a variable

constant: a term that contains only a number

order of operations: the rule that tells the sequence of operations that should be followed in a multi-step problem (the acronym PEMDAS can be used to help remember the order)

P	E	MD	AS
1	2	3	4
Parentheses	Exponents	Multiply or Divide	Add or Subtract

() **a^2** **\times** **\div** **$+$** **$-$**

inequality: a number sentence that contains a greater than (>), less than (<), greater than or equal to (\geq), or less than or equal to (\leq) sign

dependent variable: the value that is affected by the other values in a problem

independent variable: the value that affects the outcome of the dependent variable

Skills Checklist

- Identify the opposite of a number
- Write a power as the product of factors; use exponents to rewrite expressions showing repeated multiplication
- Evaluate expressions using exponents
- Identify the parts of an expression or equation
- Write a mathematical phrase as an expression or equation, and vice versa
- Evaluate expressions when given a value for the variable(s)
- Simplify values and combine like terms to identify and create equivalent expressions
- Solve one-step equations with addition and subtraction or multiplication and division
- Solve one-step inequalities with addition and subtraction
- Represent the possible values for the variable of an inequality on a number line
- Determine if an equation or inequality is true when given a value for the variable
- Write the related equation for a word problem and solve
- Identify the dependent and independent variables in a problem
- Use a table to solve a problem with two variables

Tools and Tips

Variables can be strange and intimidating when most students have only worked with numbers in math so far. It can help students to change the language and help them better understand what a variable represents before trying to solve a problem. For example, representing the problem $12 - x = 8$ as "12 minus what equals 8?" can help students see that they are trying to find an unknown number and that they do know how to find the answer.

Also, using simple tools like a number line with addition and subtraction problems, or bar models with multiplication and division can help students visualize a tricky problem. For more information on bar modeling, refer back to page 48.

Lessons

Name _____

Lesson 1.1 Number Properties



There are certain rules or properties of math that are always true. The commutative properties of addition and multiplication state that the order in which numbers are added or multiplied does not change the result.

$$a + b = b + a \quad \text{and} \quad a \times b = b \times a$$
$$7 + 3 = 10 \quad \text{and} \quad 3 + 7 = 10$$

These pages begin with a definition, step-by-step instructions where needed, and examples, followed by independent practice.

Enrichment

If you were at the store purchasing items for a party with 85 guests where you planned to give each guest 7 tickets, how many tickets will you need? Explain how the distributive property can help you find the total number of tickets you need without using a calculator.

These problems appear throughout the book. They allow your student to dig deeper and apply the skill they learned in a different way than it is practiced on the page. The two types of problems will ask your student to think critically  and explain reasoning .

Pretests

Name _____

Pretest Chapter 1

Rewrite each expression using the distributive property.

These quick skill assessments serve as a starting point for the chapter. They will include the skills covered in the chapter and allow your student to gauge what they already know and what they need extra practice with.

Posttests

Name _____

Posttest Chapter 1

Rewrite each expression using the distributive property.

These end-of-chapter assessments test to see if your student gained the skills they needed from the chapter they just completed. You can compare these tests to the pretests and measure your student's growth.

Learning Checkpoints

Name _____

Learning Checkpoint Chapters 1-4

Multiply or divide. Write fractions in simplest form.

These reviews break up the book into halfway points to prepare your student for the final test.

Final Test

Compare the integers using $<$, $>$, or $=$.

23. $0 \square -1$ 24. $-44 \square -41$ 25. $-4 \square 8$ 26. $-15 \square -17$

Solve each ratio.

This test covers the skills learned in the book. Use this comprehensive test to assess what your student has learned and to identify what they still need to work on.

Answer Key

The answers to the lessons, reviews, and tests are provided in an answer key.

Skills Checklist

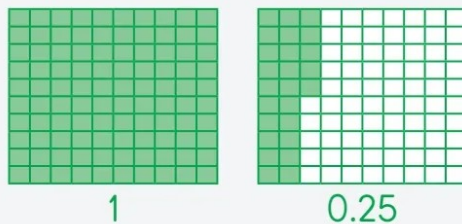
- Find the value of a number up to the millions place
- Understand place value with decimals to the thousandths place
- Understand exponents
- Use patterns of zero and decimals to solve products and quotients
- Write whole numbers and decimals in expanded form
- Compare and order decimals
- Round numbers to the nearest whole number and to the nearest decimal place

Tools and Tips

Place Value of Decimal Numbers

Understanding decimal place value will help your student round and compare numbers with decimals. A common place we see decimals is in numbers representing money. Price tags and advertisements with prices have decimal numbers, such as \$2.95. Ask your student to name the value of each number in a price (2 ones, 9 tenths, and 5 hundredths). Ask your student to round this decimal to the nearest whole number (3, or \$3.00).

Use a hundredth grid model to help your student understand decimals. For example, the decimal number 1.25 can be shown like this:



The 1 to the left of the decimal point represents the whole grid, or 1. Numbers to the right of the decimal point show the fractional part of the whole, $\frac{25}{100}$ or 0.25. In 1.25, the 2 has a value of two tenths, $\frac{2}{10}$, or 0.2. The 5 has a value of five hundredths, $\frac{5}{100}$, or 0.05.

Name _____

Pretest Chapter 1

Write the value of each underlined digit.

1. 4,332 _____

2. 30.146 _____

3. 52,321 _____

4. 1.325 _____

Write the digit that is in each given place value.

5. thousands 1,325.12 _____

6. ones 734.041 _____

Convert each power of ten to a standard number.

7. 10^4 _____

8. 10^6 _____

Multiply or divide each number by the given power of ten.

9. $8.75 \times 1,000$ _____

10. 45.67×100 _____

11. $7,643 \div 100$ _____

12. $34,980 \div 1,000$ _____

Name _____

Pretest Chapter 1

Write each number in expanded form.

13. 592,682 _____

14. 78.643 _____

Compare each pair of decimals using $>$, $<$, or $=$.

15. 6.203 6.214

16. 48.28 46.281

17. 2.4 2.400

18. 72.355 72.335

Order the decimals from least to greatest.

19. 72.5, 73.943, 72.1, 73.77

20. 43.2, 43.219, 42.1, 42.59

Round each number to the given place value.

21. tenths 3.171 _____

22. hundredths 5.126 _____

23. ones 64.967 _____

24. hundreds 832.4 _____

Name _____

Lesson 1.1 Understanding Place Value to Millions

Every digit in a number has a **place value**. This is the value of a digit determined by its position in the number. A digit is a single numeral.

Let's look at the digits in the number 2,945,376. This number is read as *two million, nine hundred forty-five thousand, three hundred seventy-six*. (Commas are used every three places starting from the right.)

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	9	4	5	3	7	6

The value of **2** is 2,000,000.

The value of **9** is 900,000.

The value of **4** is 40,000.

The value of **5** is 5,000.

The value of **3** is 300.

The value of **7** is 70.

The value of **6** is 6.

Name the place of each underlined digit. The first one has been done for you.

1. 2,564,740 _____ *hundred thousands* _____

2. 3,297,134 _____

3. 8,761,089 _____

4. 2,887,498 _____

5. 9,345,187 _____

6. 4,689,322 _____

Name _____

Lesson 1.1 Understanding Place Value to Millions

Write the value of each underlined digit. The first one has been done for you.

1. 5,363,246 _____ 5,000,000

2. 952,418 _____

3. 4,510,367 _____

4. 826,405 _____

5. 9,867,823 _____

6. 567,345 _____



Can you write a number from above in word form? Try it!

Name _____

Lesson 1.2 Understanding Place Value with Decimals

Every digit in a **decimal** number has a **place value**. Let's look at the digits in the decimal number 1,324.768.

Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	
1	3	2	4	.	7	6	8

The **1** is in the thousands place. The value is 1,000.

The **3** is in the hundreds place. The value is 300.

The **2** is in the tens place. The value is 20.

The **4** is in the ones place. The value is 4.

The **7** is in the tenths place. The value is 0.7.

The **6** is in the hundredths place. The value is 0.06.

The **8** is in the thousandths place. The value is 0.008.

Name the place of each underlined digit.

1. 10.03 _____

2. 25.75 _____

3. 561.07 _____

4. 238.406 _____

5. 0.037 _____

6. 4,916.852 _____

Name _____

Lesson 1.2 Understanding Place Value with Decimals

Write the value of each underlined digit.

1. 432.15

2. 25.132

3. 30.146

4. 100.304

5. 731.045

6. 3,214.005

Circle the numbers in each row that have the given value.

7. 6 ones 76.06 84.6 16.006

8. 3 tenths 125.03 2.39 3.312

9. 7 thousandths 11.437 3.107 7,000.2



Explain the difference between the value of the 3 in 300 and the 3 in 0.03.

