

GRADES
4-7

**BUILD
CONFIDENCE.
ONE REP
AT A TIME.**

7

+



$$48 \div 6 = 8$$

x

3

5 ÷



MuscleMathMania

$$2 \times 4 = 8$$

A FUN MATH WORKBOOK

FOR GRADES 4-7

★ Build Math Strength ★
One Problem at a Time!

SKILLS YOU NEED.
**REPS YOU
CONTROL.**



THINK
CRITICALLY



PRACTICE
DAILY



BUILD
CONFIDENCE



ACHIEVE
YOUR GOALS

- ✓ Addition
- ✓ Subtraction
- ✓ Multiplication
- ✓ Division
- ✓ Fractions
- ✓ Decimals & More!



How To Use This Book

Each lesson in Muscle Math Mania follows the same five-part structure. Work through each section in order for best results.

1 Visual Model

Look at the picture or diagram. It shows what the math MEANS before you do any calculation.

2 Key Idea

Read this sentence aloud. It is the one rule or concept the whole lesson is built on.

3 Worked Example

Follow each step. Cover the answer and try each line yourself before reading the solution.

4 Coach Tip & Check Your Form

Coach Tip tells you how to think when you're stuck. Check Your Form shows a common mistake — read it even when you got the right answer.

5 Practice Set

Problems 1-3: Try It. Problems 4-9: Rep Set (build fluency). Problem 10: Real-World. Problem 11: Challenge. The matching worksheet right after each lesson adds 15 more practice problems.

FOR STUDENTS

- Start with the Visual Model, not the steps.
- Say the Key Idea before you begin practice.
- Check your answer after every problem.
- Stuck? Read Coach Tip before asking for help.

FOR PARENTS & TUTORS

- Read the Key Idea together before practice.
- Use answer keys (back matter) to check work.
- Error analysis problems build self-correction habits.
- Challenge problems are optional enrichment.



Table of Contents

Diagnostic Pre-Test	5
---------------------------	---

CORE UNITS

Unit 0 — Start Strong	7
Unit 1 — Decimal Place Value and Estimation	14
Unit 2 — Fractions Mean Something	39
Unit 3 — Factors, GCF, Divisibility, and Simplifying	61
Unit 4 — Add and Subtract Fractions	80
Unit 5 — Multiply and Divide Fractions	99
Unit 6 — Fractions, Decimals, and Percents	121
Unit 7 — Geometry, Measurement, and Conversions	140
Unit 8 — Expressions, Equations, and Exponents	168
Unit 9 — Ratios, Rates, and Proportional Thinking	193
Unit 10 — Data and Probability	209

REVIEW & PRACTICE

Big Test Prep	222
Mixed Review	238
Final Review / Practice Test	240

BACK MATTER

Answer Keys (all lessons and worksheets)	242
--	-----



Decimal Place Value and Estimation

Unit 1

Model it. Practice it. Check it. Own it.

Lessons in This Unit

- Place Value To Thousandths
- Compare And Order Decimals
- Decimal Addition And Subtraction
- Decimal Division
- Powers Of 10 Without Tricks
- Round Decimals And Check Reasonableness
- Decimal Multiplication
- Decimal Error Analysis

You Will Practice

- Decimal place value
- Rounding and estimating
- Decimal operations
- Error analysis

How Each Lesson Works

1. Key Idea - understand why
2. Visual Model - see the math
3. Worked Example - follow the steps
4. Try It - practice with guidance
5. Rep Set - build fluency
6. Real-World Rep - apply the skill



Learning Goal: I can read, write, and explain the value of every digit in a decimal to the thousandths place.

Key Idea

Each digit has a value based on its position. Decimals extend the place-value system to tenths, hundredths, and thousandths. Reading the places carefully prevents many computation errors.

Vocabulary

place value: the value of a digit based on its position

thousandth: one of 1,000 equal parts

expanded form: a number written as a sum of place values

Visual Model

	Ones	Tenths	Hdths	Thths
Digit	4	7	3	8
Value	4	0.7	0.03	0.008

$$4.738 = 4 + 0.7 + 0.03 + 0.008$$

Worked Example

Example: Write 4.738 in expanded form.

- 1) Label each digit using the place chart: ones=4, tenths=7, hundredths=3, thousandths=8
- 2) Each digit's value = digit $\times$ its place
- 3) Answer: $4 + 0.7 + 0.03 + 0.008$
- 4) Check: the parts add back to 4.738

Coach Tip

Read the number from left to right and name each place before comparing or writing it.

Check Your Form

Incorrect: reading 4.305 as four and thirty-five hundredths.
Correct: 4.305 is four and three hundred five thousandths.

Try It (show your work)

1. Write 4.738 in expanded form.

2. In 6.205, what digit is in the hundredths place?

3. What is the value of the 9 in 12.094?

Rep Set (show your work)

4. Write a decimal with 3 ones, 5 tenths, 0 hundredths, and 8 thousandths.

6. In 0.639, what is the value of the 6?

8. Which place does the 5 hold in 18.357?

5. Write 7.041 in word form.

7. Write $9 + 0.4 + 0.02 + 0.006$ as a decimal. Show the fraction or division step.

9. Write 0.704 in expanded form.

Real-World Rep

10. Which place does the 9 hold in 0.019?

Challenge

11. Write a decimal equal to $6 + 0.02 + 0.009$.



Place Value To Thousandths Worksheet

Show your work. Estimate first when it helps. Check reasonableness before moving on.

1. Write 4.738 in expanded form.

5. Write 7.041 in word form.

2. In 6.205, what digit is in the hundredths place?

6. In 0.639, what is the value of the 6?

3. What is the value of the 9 in 12.094?

7. Write $9 + 0.4 + 0.02 + 0.006$ as a decimal. Show the fraction or division step.

4. Write a decimal with 3 ones, 5 tenths, 0 hundredths, and 8 thousandths.

8. Which place does the 5 hold in 18.357?

**Place Value To Thousandths Worksheet (continued)**

Continue showing your work. Check each answer for reasonableness before moving on.

9. Write 0.704 in expanded form.

13. Write 20.305 in expanded form.

10. Which is greater, the 8 in 2.817 or the 8 in 5.082?

14. Which place does the 9 hold in 0.019?

11. Write the number with 14 ones, 0 tenths, 6 hundredths, and 2 thousandths.

15. Write a decimal equal to $6 + 0.02 + 0.009$.

12. What is the value of the underlined digit in 31.47.6? The underlined digit is 7.



Learning Goal: I can compare and order decimals by aligning place values, and explain my reasoning.

Key Idea

Compare decimals by lining up place values. Extra zeros can help because 2.5 and 2.500 name the same value. The first place where the digits differ tells which number is greater.

Vocabulary

compare: decide greater, less, or equal

trailing zero: a zero after the last decimal digit that does not change value

order: arrange from least to greatest or greatest to least

Visual Model

	Ones	Tenths	Hdths
2.13	2	1	3
2.17	2	1	7

Tie until hundredths: $3 < 7$, so $2.13 < 2.17$

Worked Example

Example: Compare 2.13 ____ 2.17.

- 1) Align place values
- 2) Ones: $2=2$ (tie)
- 3) Tenths: $1=1$ (tie)
- 4) Hundredths: $3 < 7$
- 5) First difference decides
- 6) Answer: $2.13 < 2.17$
- 7) Check: on the zoomed number line, 2.13 is left of 2.17

Coach Tip

Line up decimal points and add trailing zeros only as a thinking aid.

Check Your Form

Incorrect: $2.7 < 2.65$ because 65 is bigger than 7. Correct: $2.70 > 2.65$.

Try It (show your work)

1. Compare the values: 2.13 ____ 2.17. Fill in $<$, $>$, or $=$.

2. Compare the values: 0.5 ____ 0.50. Fill in $<$, $>$, or $=$.

3. Compare the values: 3.402 ____ 3.42. Fill in $<$, $>$, or $=$.

Rep Set (show your work)

4. Compare the values: 6.75 ____ 6.705. Fill in $<$, $>$, or $=$.

5. Compare the values: 9.09 ____ 9.9. Fill in $<$, $>$, or $=$.

6. Compare the values: 4.600 ____ 4.6. Fill in $<$, $>$, or $=$.

7. Compare the values: 0.807 ____ 0.78. Fill in $<$, $>$, or $=$.

8. Compare the values: 12.031 ____ 12.013. Fill in $<$, $>$, or $=$.

9. Compare the values: 5.005 ____ 5.050. Fill in $<$, $>$, or $=$.

Real-World Rep

10. Compare the values: 0.090 ____ 0.09. Fill in $<$, $>$, or $=$.

Challenge

11. Order from least to greatest: 7.07, 7.7, 7.007.



Compare And Order Decimals Worksheet

Show your work. Estimate first when it helps. Check reasonableness before moving on.

1. Compare the values: 2.13 _____. Fill in $<$, $>$, or $=$ 2.17 .

5. Compare the values: 9.09 _____. Fill in $<$, $>$, or $=$ 9.9 .

2. Compare the values: 0.5 _____. Fill in $<$, $>$, or $=$ 0.50 .

6. Compare the values: 4.600 _____. Fill in $<$, $>$, or $=$ 4.6 .

3. Compare the values: 3.402 _____. Fill in $<$, $>$, or $=$ 3.42 .

7. Compare the values: 0.807 _____. Fill in $<$, $>$, or $=$ 0.78 .

4. Compare the values: 6.75 _____. Fill in $<$, $>$, or $=$ 6.705 .

8. Compare the values: 12.031 _____. Fill in $<$, $>$, or $=$ 12.013 .

**Compare And Order Decimals Worksheet (continued)**

Continue showing your work. Check each answer for reasonableness before moving on.

9. Compare the values: 5.005 _____. Fill in <, >, or = 5.050.

13. Compare the values: 11.011 _____. Fill in <, >, or = 11.101.

10. Compare the values: 8.2 _____. Fill in <, >, or = 8.199.

14. Compare the values: 0.090 _____. Fill in <, >, or = 0.09.

11. Order from least to greatest: 3.4, 3.04, 3.404.

15. Order from least to greatest: 7.07, 7.7, 7.007.

12. Order from greatest to least: 0.56, 0.506, 0.605.



Decimal Place Value and Estimation Answer Key

This unit continues on page 257.

Place Value To Thousandths Worksheet

- | | |
|------------------------------------|------------------------------------|
| 1. $4 + 0.7 + 0.03 + 0.008$ | 9. $0.7 + 0.004$ |
| 2. 0 | 10. the 8 in 2.817; it is 8 tenths |
| 3. 0.09 or nine hundredths | 11. 14.062 |
| 4. 3.508 | 12. 0.07 or seven hundredths |
| 5. seven and forty-one thousandths | 13. $20 + 0.3 + 0.005$ |
| 6. 0.6 or six tenths | 14. thousandths place |
| 7. 9.426 | 15. 6.029 |
| 8. hundredths place | |

Powers Of 10 Without Tricks Worksheet

- | | |
|----------|------------|
| 1. 164 | 9. 56 |
| 2. 3.8 | 10. 60.4 |
| 3. 7050 | 11. 803 |
| 4. 4.26 | 12. 0.0715 |
| 5. 90.4 | 13. 4200 |
| 6. 0.85 | 14. 9.35 |
| 7. 37 | 15. 600.8 |
| 8. 0.192 | |

Compare And Order Decimals Worksheet

- | | |
|--------|------------------------|
| 1. $<$ | 9. $<$ |
| 2. $=$ | 10. $>$ |
| 3. $<$ | 11. 3.04, 3.4, 3.404 |
| 4. $>$ | 12. 0.605, 0.56, 0.506 |
| 5. $<$ | 13. $<$ |
| 6. $=$ | 14. $=$ |
| 7. $>$ | 15. 7.007, 7.07, 7.7 |
| 8. $>$ | |

Round Decimals And Check Reasonableness Worksheet

- | | |
|---------|---------------|
| 1. 2.6 | 9. 0.1 |
| 2. 4.38 | 10. 18.7 |
| 3. 8.0 | 11. 3.48 feet |
| 4. 0.75 | 12. 22.4 |
| 5. 13.0 | 13. 1.00 |
| 6. 5.01 | 14. 105 |
| 7. 10 | 15. 6.449 |
| 8. 6.44 | |

Decimal Addition And Subtraction Worksheet

- | | |
|-----------|------------|
| 1. 6.25 | 9. 8.425 |
| 2. 5.63 | 10. 1.705 |
| 3. 2.246 | 11. 13.023 |
| 4. 4.65 | 12. 2.17 |
| 5. 12.965 | 13. 53.22 |
| 6. 2.18 | 14. 22.196 |
| 7. 2.63 | 15. 14.875 |
| 8. 18.528 | |

Decimal Multiplication Worksheet

- | | |
|----------|----------|
| 1. 3.6 | 9. 10 |
| 2. 1.6 | 10. 4.5 |
| 3. 0.56 | 11. 7 |
| 4. 25 | 12. 0.28 |
| 5. 0.3 | 13. 0.9 |
| 6. 0.95 | 14. 2.7 |
| 7. 10.2 | 15. 17.1 |
| 8. 0.024 | |

Decimal Division Worksheet

- | | |
|---------|---------|
| 1. 2.25 | 9. 0.45 |
| 2. 8 | 10. 9 |
| 3. 3 | 11. 8 |
| 4. 11 | 12. 4.5 |
| 5. 4.2 | 13. 72 |
| 6. 1.2 | 14. 3 |
| 7. 15 | 15. 21 |
| 8. 8.1 | |



Decimal Place Value and Estimation Answer Key (continued)

All answers independently computed. Verify arithmetic before marking student work.

Decimal Error Analysis Worksheet

1. Mistake: place values were not aligned; $3.40 + 2.18 = 5.58$.
2. Mistake: regrouping/borrowing across the decimal was done incorrectly; $5.00 - 2.37 = 2.63$.
3. Mistake: decimal size was not checked; $4.2 \times 0.3 = 1.26$.
4. Mistake: quotient size was unreasonable; $7.2 \div 0.9 = 8$.
5. Mistake: digits were shifted the wrong direction; $0.56 \times 100 = 56$.
6. Mistake: subtraction/regrouping error; $6.70 - 4.95 = 1.75$.
7. Mistake: tenths and hundredths were not aligned; $0.80 + 0.35 = 1.15$.
8. Mistake: scaling/decimal placement error; $9.6 \div 1.2 = 8$.
9. Mistake: multiplying by 10 changes each digit's value one place; $2.05 \times 10 = 20.5$.
10. Mistake: did not annex zeros and regroup correctly; $8.00 - 3.46 = 4.54$.
11. Mistake: product size is too large for two factors less than 1; $0.25 \times 0.4 = 0.1$.
12. Mistake: hundredths and tenths were combined incorrectly; $12.03 + 0.70 = 12.73$.
13. Mistake: multiplying by 100 shifts digit values two places; $3.06 \times 100 = 306$.
14. Mistake: quotient size was too small; $5.4 \div 0.6 = 9$.
15. Mistake: subtracted in the wrong direction after annexing zeros; $10.000 - 0.875 = 9.125$.



THAT WAS THE WARM-UP.

Ready for the full workout?

The Foundations Workbook · Grades 4-7

WHAT'S IN THE FULL BOOK

- Diagnostic pre-test and a Start Strong unit
- Decimals, fractions, the four operations, ratios and data
- Mixed review and a final practice test
- Answer key for every unit in the back

Paperback on Amazon · Instant-download PDF

musclemathmania.com/workbooks

These pages are taken unchanged from the full workbook, so page numbers and answer-key references point to the complete book. This sample is free to print for your own household. Muscle Math Mania workbooks are practice material; no grades, scores or placement are promised.