

Illinois IAR Grade 5 Math Step by Step

A Beginner Friendly Guide to Learning Math

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STEP BY STEP

Grade 5 Math Made Easy!

Hi there, math superstar! ★

This book teaches you Grade 5 math **one step at a time**.

Every topic shows you a clear set of steps, then you practice using those steps until they feel easy!

- ✓ Follow the **steps** — they're your recipe!
- ✓ Try the **examples** along the way!
- ✓ Mistakes help you **learn**!

Ready to take it step by step? Let's go! 🚀

“I'm Owlbert! I'll guide you through every step. Just follow along!”



CHAPTER

1

Place Value & Decimals

★ *What's Inside* ★

1.1 <i>Place Value Relationships</i>	2
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★ 1.1 Place Value Relationships ★

What You'll Learn

- Explain how each digit's value is 10 times the digit to its right
- Find the value of a digit based on its place
- Compare the values of the same digit in different places

Words to Know

- ▶ **Place Value** — How much a digit is worth based on where it sits in a number.
- ▶ **Digit** — One of the symbols 0–9 used to write numbers.
- ▶ **Value** — The amount a digit represents because of its position.

How to Find and Compare Digit Values

- 1 Find the digit's **place** — ones, tens, hundreds, thousands, tenths, hundredths, or thousandths.
- 2 Each place is 10 **times** the place to its right and $\frac{1}{10}$ of the place to its left.
- 3 Multiply the digit by its **place value** to find what it's worth.



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Example: In 3,550, how does the value of the 5 in the hundreds place compare to the 5 in the tens place?

Step 1 Find each digit's place:

The first 5 is in the **hundreds** place. The second 5 is in the **tens** place.

Step 2 Hundreds is one place to the left of tens, so it is 10 times greater.

Step 3 Find the values: $5 \times 100 = 500$ and $5 \times 10 = 50$.

✓ The 5 in the hundreds place is 10 times the 5 in the tens place (500 vs. 50).

Example: In 0.777, compare the 7 in the tenths place to the 7 in the thousandths place.

Step 1 The first 7 is in the **tenths** place. The third 7 is in the **thousandths** place.

Step 2 Tenths is two places to the left of thousandths: $10 \times 10 = 100$ times greater.

Step 3 Values: $7 \times 0.1 = 0.7$ and $7 \times 0.001 = 0.007$.

✓ The 7 in the tenths place is 100 times the 7 in the thousandths place.

⚠ Watch Out! The same digit can mean very different things! The 4 in 4,000 is worth 4,000, but the 4 in 0.04 is only worth 0.04.



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Place Value Relationships Practice

Identify the Place

1. What place is the 6 in 6,432? _____
2. What place is the 8 in 3.482? _____

Compare Digit Values

3. In 2,255, the 2 in the thousands place is how many times the 5 in the tens place? _____
4. In 0.66, the 6 in the tenths place is how many times the 6 in the hundredths place? _____

Find the Value

5. Value of 9 in 9,301: _____
6. Value of 4 in 0.245: _____
7. Mia says the 5 in 5,500 and the 5 in 550 are worth the same. Is she right? Explain.

Answer: _____



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CHAPTER

2

Operations with Decimals

★ *What's Inside* ★

2.1 Add Decimals	6
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★ 2.1 Add Decimals ★

What You'll Learn

- Add decimals to the hundredths place
- Line up decimal points and annex zeros before adding

Words to Know

- ▶ **Decimal point** — The dot that separates the whole-number part from the fractional part.
- ▶ **Annex zeros** — Adding zeros to the end of a decimal so both numbers have the same number of decimal places.
- ▶ **Regroup** — When a column adds to 10 or more, carry the extra to the next column.

How to Add Decimals

- 1 Write the numbers vertically and **line up the decimal points**.
- 2 **Annex zeros** so both numbers have the same number of decimal places.
- 3 **Add** each column from right to left, regrouping when a column totals 10 or more.
- 4 **Bring down** the decimal point into the answer.



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Example: Add $5.6 + 3.87$.

Step 1 Write vertically, decimal points lined up.

Step 2 Annex a zero: $5.6 \rightarrow 5.60$.

Step 3 Add right to left: hundredths $0 + 7 = 7$; tenths $6 + 8 = 14$, write 4, carry 1; ones $5 + 3 + 1 = 9$.

Step 4 Bring down the decimal point.

✓ $5.6 + 3.87 = 9.47$

Example: Add $12.95 + 8.67$.

Step 1 Write vertically, decimal points aligned.

Step 2 Both have two decimal places — no zeros needed.

Step 3 Hundredths: $5 + 7 = 12$, write 2, carry 1. Tenths: $9 + 6 + 1 = 16$, write 6, carry 1. Ones: $2 + 8 + 1 = 11$, write 1, carry 1. Tens: $1 + 0 + 1 = 2$.

Step 4 Bring down the decimal point.

✓ $12.95 + 8.67 = 21.62$

⚠ Watch Out! Don't line up the last digits — line up the **decimal points!** $3.9 + 0.14$ is NOT 3.9 over 0.14 matched at the right. Write $3.90 + 0.14$.



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Add Decimals Practice

Line Up and Annex Zeros

1. $4.3 + 2.56 =$ _____

2. $8 + 1.47 =$ _____

Add With Regrouping

3. $6.78 + 5.94 =$ _____

4. $9.85 + 3.67 =$ _____

Put It All Together

5. $3.94 + 8.08 + 1.53 =$ _____

6. Jake ran 2.4 km on Monday and 3.75 km on Tuesday. How far did he run in total?

Answer: _____ km

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