FIBO / MATH / ELEMENTARY · UNIT 3 · DECIMALS & PERCENTS

Add & Subtract Decimals — Lecture

Decimal arithmetic has exactly one rule: line up the decimal points. Everything else works like whole numbers — plus one habit that saves you forever: estimate first.

BY THE END OF THIS LESSON, YOU WILL BE ABLE TO

- ✓ Line up decimal points and pad short numbers with zeros
- ✓ Add and subtract decimals column by column, borrowing when needed
- ✓ Estimate before computing and sanity-check every answer
- ✓ Solve money and measurement problems with decimals

⏱ About 25 min · Needs: decimals intro · Unit 3 · Decimals & Percents

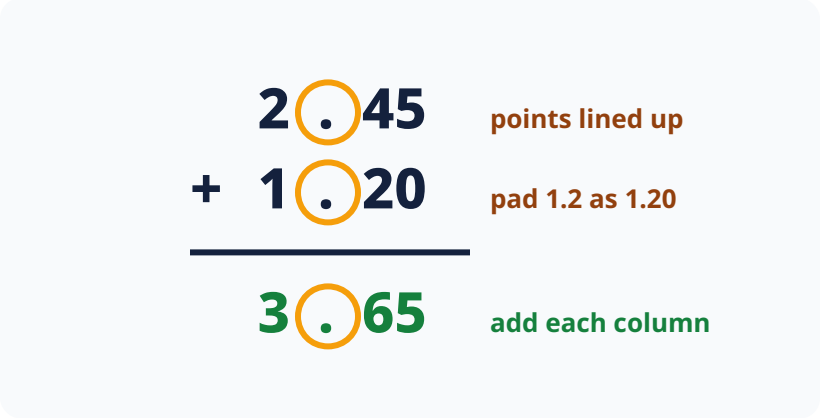
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Printable companion to the interactive lesson at fibotutors.com — full color. Worked examples and application solutions are shown in full; Try-It answers live in the separate Answer Key.

CONCEPTS

The Big Picture

The one rule of decimal arithmetic: **line up the decimal points**. The point locks every digit into its place — tenths add to tenths, hundredths to hundredths. If the points drift, the places drift too.



The gold rings mark the lined-up decimal points. Pad 1.2 as 1.20, then add each column: 2.45 + 1.20 = 3.65.

Once the points line up, it is ordinary whole-number addition and subtraction — carry and borrow exactly like you already know.

Why lining up matters. In 2.45 + 1.2, the points line up so tenths add to tenths and hundredths to hundredths. Line up the right edges instead and you add tenths to hundredths — a different, wrong question.



Pad with zeros. Write 1.2 as 1.20 so every column has a digit. Trailing zeros never change the value.

Estimate first. 4.87 + 2.95 ≈ 5 + 3 = 8. The real answer 7.82 is close to 8 — but 78.2 or 0.782 would scream "point in the wrong place." Estimate before you compute, sanity-check after.

Subtraction needs the same lineup. 5.2 − 1.35: write 5.20 − 1.35, line up the points, borrow like whole numbers → 3.85.

REAL LIFE FIRST

Math in the Wild

REAL LIFE FIRST

📷 Picture this: a grocery receipt tape showing item prices and a total

Bread	2.45
Milk	1.20
TOTAL	**3.65**

the tape lines up the points for you

Bread $2.45 + milk $1.20 = $3.65. The receipt tape lines up the points — do the same on paper.

Where you already meet decimal adding: grocery totals, gas fill-ups, splitting a restaurant bill, and tracking rainfall in a rain gauge.

WORKED EXAMPLES

See Every Step

Example 1 — Add: 2.45 + 1.2

Step 1 **Estimate first:** 2.45 + 1.2 ≈ 2.5 + 1 = **3.5**.

Step 2 Line up the points; pad 1.2 as **1.20**.

Step 3 Add each column: 5 + 0 = 5, 4 + 2 = 6, 2 + 1 = 3 → **3.65**.

2.45 + 1.20 = 3.65

→ 3.65 sits near the estimate 3.5 — the point is in the right place.

✏️ Workspace — rework this example

✏️ Try It 1 — your turn

Compute: **3.4** + **2.65**.

(Answer in the separate Answer Key — try it on your own first!)

✏️ Workspace — solve the Try-It here

Example 2 — Subtract: 5.2 − 1.35

Step 1 **Estimate first:** 5.2 − 1.35 ≈ 5 − 1 = **4**.

Step 2 Write 5.20 − 1.35 and line up the points.

Step 3 Borrow like whole numbers: hundredths 10 − 5 = 5; tenths 11 − 3 = 8; ones 4 − 1 = 3 → **3.85**.

5.20 − 1.35 = 3.85

→ 3.85 ≈ 4 — matches the estimate. Borrowing works exactly like whole numbers.

✏️ Workspace — rework this example

✏️ Try It 2 — your turn

Compute: **7.8** − **3.25**.

(Answer in the separate Answer Key — try it on your own first!)

✏️ Workspace — solve the Try-It here

Example 3 — Carry everywhere: 4.87 + 2.95

Step 1 **Estimate first:** 4.87 + 2.95 ≈ 5 + 3 = **8**.

Step 2 Line up the points — no padding needed this time.

Step 3 Hundredths: 7 + 5 = 12 (write 2, carry 1). Tenths: 8 + 9 + 1 = 18 (write 8, carry 1). Ones: 4 + 2 + 1 = 7 → **7.82**.

4.87 + 2.95 = 7.82

→ 7.82 ≈ 8 — but 78.2 or 0.782 would scream "point in the wrong place."

✏️ Workspace — rework this example

✏️ Try It 3 — your turn

Compute: **9** − **2.4**.

(Answer in the separate Answer Key — try it on your own first!)

✏️ Workspace — solve the Try-It here

USE IT FOR REAL

Application Problems

USE IT FOR REAL

App 1 — Grocery total

Cereal costs **$12.47** and milk costs **$5.89**. What is the total?

$12.47 + **$5.89** = **$18.36**

Line up the points: $12.47 + $5.89. Estimate ≈ $18.

Solution. Line up the points and add each column: 7 + 9 = 16 (write 6, carry 1); 4 + 8 + 1 = 13 (write 3, carry 1); 2 + 5 + 1 = 8; 1 + 0 = 1.
Total = **$18.36** — close to the estimate $18 ✓.

✏️ **Workspace — solve it your way first, then compare**

App 2 — Morning run

Leo runs **3.2** miles before school and **4.75** miles after. How far does he run in total?



Pad 3.2 as 3.20, line up the points: 3.20 + 4.75 = 7.95 miles.

Solution. Pad: 3.20 + 4.75. Hundredths: 0 + 5 = 5. Tenths: 2 + 7 = 9. Ones: 3 + 4 = 7. Total = **7.95 miles**.

✏️ **Workspace — solve it your way first, then compare**

App 3 — The change

You pay with a **$10** bill for groceries costing **$6.35**. What is your change?



Write 10 as 10.00 so every column has a digit: 10.00 − 6.35 = 3.65.

Solution. Write $10 as **10.00**. Borrow across the zeros: 10.00 − 6.35.
Hundredths: 10 − 5 = 5. Tenths: 9 − 3 = 6. Ones: 9 − 6 = 3.
Change = **$3.65**.

✏️ **Workspace — solve it your way first, then compare**

KEEP FOREVER

Key Points — Cheat Sheet

- **The one rule:** line up the decimal points — tenths add to tenths
- Pad short numbers with zeros: 1.2 = **1.20**, 9 = **9.0**
- Add/subtract each column like whole numbers — borrow when the top digit is smaller
- The point drops **straight down** into the answer
- **Estimate first:** 4.87 + 2.95 ≈ 8 — a far-off answer means the point slipped
- Money: **$6.45** + **$1.75** = **$8.20**