LESSON MAKER PRO

# Decimal Detective

*Solve, estimate, and check decimal amounts.*

**GRADE 4 · 4.CE.4.b**

**4.CE.4.b** "Estimate, represent, solve, and justify solutions to single-step and multistep contextual problems using addition and subtraction of decimals through the thousandths."

NAME _____ DATE _____

## LINE UP PLACE VALUES

Line up decimal points before adding or subtracting. Write zeros as placeholders so each place-value column matches. To estimate, round each number to the same place and check whether your exact answer is close to the estimate.

## WORKED EXAMPLE

Find 7.286 + 3.47.

1. Write 3.47 as 3.470.
2. Line up the decimal points: 7.286 + 3.470.
3. Add the decimal parts: .286 + .470 = .756.
4. Add the whole-number parts: 7 + 3 = 10, so the total is 10.756.

**Answer: 10.756**

## PRACTICE 6 problems

**1** Find 4.208 + 1.570.

**ANSWER** _____

**2** Find 9.400 - 2.683.

**ANSWER** _____

**3** Find 0.936 + 0.064.

**ANSWER** _____

**4** Find 12.005 - 3.790.

**ANSWER** _____

**5** Estimate 6.381 + 2.614 by rounding each addend to the nearest whole number.

**ANSWER** _____

**6** A 5.307-meter ribbon is cut by 1.928 meters. Write an equation and find the length left.

**ANSWER** _____

## APPLY IT Show your work

**1** For a science project, Jalen has 14.625 L of water in a tank. He adds 7.380 L, then uses 3.947 L. Round each number to the nearest whole liter to estimate the water left. Then find the exact amount. In one sentence, explain why your exact answer fits your estimate.

WORK SPACE

**ANSWER** _____

**2** The robotics club has 6.875 m of wire. The club uses 1.246 m for one robot and 2.509 m for another robot. Round each number to the nearest whole meter to estimate the wire left. Then find the exact amount. In one sentence, explain why your exact answer fits your estimate.

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

During a game design contest, Kiara starts with 20.000 energy points. She earns 4.875 points, spends 3.296 points to unlock a tool, and earns 1.430 more points. Estimate her final score by rounding each number to the nearest whole point. Then find the exact score. Explain in exactly two sentences why the exact score fits your estimate.

WORK SPACE AND ANSWER

# Decimal Detective



## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Find 4.208 + 1.570. | **5.778** |
| 2 | Find 9.400 - 2.683. | **6.717** |
| 3 | Find 0.936 + 0.064. | **1.000** |
| 4 | Find 12.005 - 3.790. | **8.215** |
| 5 | Estimate 6.381 + 2.614 by rounding each addend to the nearest whole number. | **9** |
| 6 | A 5.307-meter ribbon is cut by 1.928 meters. Write an equation and find the length left. | **5.307 - 1.928 = 3.379 meters** |

## PART 2 · APPLY IT

1. **The tank has 18.058 L, and the estimate is 18 L because 15 + 7 - 4 = 18, which is close to the exact amount.** Estimate 15 + 7 - 4 = 18. Calculate 14.625 + 7.380 - 3.947 = 18.058.
2. **The club has 3.120 m of wire left, and the estimate is 3 m because 7 - 1 - 3 = 3, which is close to 3.120.** Estimate 7 - 1 - 3 = 3. Calculate 6.875 - 1.246 - 2.509 = 3.120.

## CHALLENGE

**The exact score is 23.009 points, and the nearest-whole-point estimate is 23 because 20 + 5 - 3 + 1 = 23. The exact score is close to 23, so the estimate makes sense.**

Accept equivalent decimal forms with or without trailing zeros, such as 1 and 1.000. For explanation items, accept any correct required-rounding estimate and a comparison showing that the exact answer is close to it.