LESSON MAKER PRO

Decimal Detective

Use place value to solve decimal operations.

GRADE 5 · 5.NBT.B.7

CCSS.Math.Content.5.NBT.B.7 "Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction..."

NAME _____ DATE _____

LINE UP THE PLACES

Line up decimal points before you add or subtract. For multiplication and division, use place value to keep track of the value of each digit, then check whether your answer makes sense.

WORKED EXAMPLE

3.47 + 2.68 = ?

1. Line up the decimal points.
2. Add hundredths: 7 + 8 = 15. Write 5 hundredths and regroup 1 tenth.
3. Add tenths and ones: 4 + 6 + 1 = 11 tenths, and 3 + 2 + 1 = 6 ones.
4. Place the decimal point in the sum.

Answer: 6.15

PRACTICE 6 problems

1 4.56 + 2.37 = ?

ANSWER _____

2 9.04 - 3.58 = ?

ANSWER _____

3 1.25 x 3.2 = ?

ANSWER _____

4 7.56 / 3 = ?

ANSWER _____

5 0.84 / 0.7 = ?

ANSWER _____

6 6.4 x 0.35 = ?

ANSWER _____

APPLY IT Show your work

1 A game club has 12.75 dollars to spend on prizes. Five players will receive equal amounts. How much money does each player receive?

WORK SPACE

ANSWER _____

2 Maya saved 18.60 dollars for a new book set. The set costs 7.85 dollars. How much money will Maya have left after buying it?

WORK SPACE

ANSWER _____

3 Draw a place-value model for 0.47 + 0.68. Use a long rectangle labeled 0.1 for each tenth and a small dot labeled 0.01 for each hundredth; put both numbers in the same drawing. Circle each group of 10 hundredths and redraw it as 1 tenth. Then circle 10 tenths and redraw them as 1 whole. Write the addition vertically with aligned decimal points. Explain how both regroupings in your drawing match the written method.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Three art kits cost 2.45 dollars each. A paintbrush costs 1.75 dollars. What is the total cost? Explain how you used multiplication and addition.

WORK SPACE AND ANSWER

ANSWER KEY # Decimal Detective

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	4.56 + 2.37 = ?	**6.93**
2	9.04 - 3.58 = ?	**5.46**
3	1.25 x 3.2 = ?	**4.00**
4	7.56 / 3 = ?	**2.52**
5	0.84 / 0.7 = ?	**1.2**
6	6.4 x 0.35 = ?	**2.24**

PART 2 · APPLY IT

1. **2.55 dollars** Divide 12.75 by 5. Each player receives 2.55 dollars.
2. **10.75 dollars** Subtract 7.85 from 18.60. Maya will have 10.75 dollars left.
3. **1.15. The model starts with 10 tenths and 15 hundredths, then has 11 tenths and 5 hundredths, and finally 1 whole, 1 tenth and 5 hundredths.** Draw 4 tenth rectangles and 7 hundredth dots for 0.47, and 6 tenth rectangles and 8 hundredth dots for 0.68. Regroup 10 of 15 hundredths into 1 tenth, leaving 5 hundredths. Regroup 10 of 11 tenths into 1 whole, leaving 1 tenth. These are the two carries in 0.47+0.68=1.15.

CHALLENGE

9.10 dollars. Multiply 3 x 2.45 = 7.35, then add 1.75 to get 9.10.

Accept equivalent decimal forms, such as 4 instead of 4.00 and 1.20 instead of 1.2. Students may use a standard algorithm, place-value reasoning, or another correct written strategy. For Apply It 3, require the actual labeled drawing, both groups of ten and their replacement units, a correctly aligned written sum, and the explanation linking the two regroupings; a numerical answer alone is insufficient.