

Grade 5 - Adding and Subtracting Decimals - Lesson

Common Core 5.NBT.B.7 · maths-pdf.fr/en/

To add or subtract decimals, line up the decimal points so digits with the same place value are in the same column. Write zeros as placeholders if needed, add or subtract from the right, regroup when necessary, and bring the decimal point straight down. Estimate first to check that the answer makes sense.

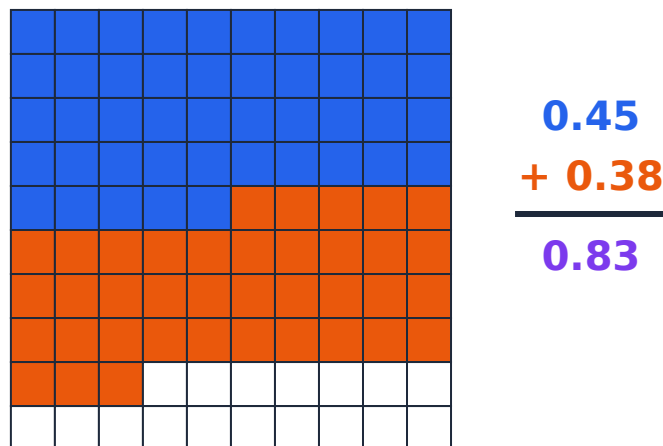
Grade 5 · Common Core State Standards: 5.NBT.B.7

Key facts

- Line up the decimal points so tenths are over tenths and hundredths are over hundredths.
- Write placeholder zeros so both numbers have the same number of decimal places.
- Regroup in decimals the same way you regroup whole numbers.
- Estimate by rounding to the nearest whole number to check the answer.
- Use the opposite operation to check: add the difference back to the subtracted number.

How do you add decimals?

To add decimals, add digits that have the same place value. Tenths go with tenths, and hundredths go with hundredths. The easiest way is to **line up the decimal points**. You can also think of a hundredths grid: 45 hundredths plus 38 hundredths is 83 hundredths.



45 hundredths + 38 hundredths = 83 hundredths.

What are the steps for adding?

Add $12.45 + 6.8$.

1. Estimate: $12 + 7 = 19$.
2. Line up the decimal points. Write a zero so both numbers have two decimal places: 12.45 and 6.80.
3. Add from the right. Hundredths: $5 + 0 = 5$. Tenths: $4 + 8 = 12$, write 2 and regroup 1. Ones: $2 + 6 + 1 = 9$. Tens: 1.
4. Bring the decimal point straight down. The sum is 19.25.
5. Compare with the estimate. 19.25 is close to 19.

The sum is **19.25**.

$$\begin{array}{r} 12.45 \\ + 6.80 \\ \hline 19.25 \end{array} \quad \text{the 0 is a placeholder}$$

Line up the decimal points. The orange zero is a placeholder.

How do you subtract decimals?

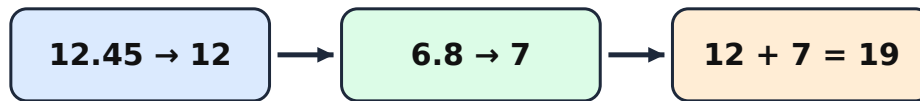
Subtract the same way: line up the decimal points, write zeros as placeholders, and regroup when a digit on top is too small. Subtract $20.5 - 7.38$. Write 20.50. Hundredths: 0 is less than 8, so regroup. You get $20.50 - 7.38 = 13.12$. Check by adding: $13.12 + 7.38 = 20.50$.

$$\begin{array}{r} 20.50 \\ - 7.38 \\ \hline 13.12 \end{array} \quad \text{regroup as needed}$$

$$20.5 - 7.38 = 13.12.$$

How do you estimate with decimals?

Round each number to the nearest whole number, then add or subtract. Estimating tells you if the decimal point is in the right place. If your exact sum for $12.45 + 6.8$ is close to 19, it makes sense. An answer of 1.925 or 192.5 does not.



The estimate is 19.

Where do we use decimal addition and subtraction?

You use it every time you handle money or measure. Prices have dollars and cents, so $\$3.49 + \$1.75 = \$5.24$. Distances, weights and times in races also have decimals. Always line up the decimal points, whether the numbers are dollars, miles or seconds.

Common mistakes to avoid

- Lining up the last digits instead of the decimal points. For $3.6 + 2.45$ this gives 2.81 instead of 6.05.
- Forgetting a placeholder zero, so a digit lands in the wrong column.
- Forgetting to put the decimal point in the answer, or putting it in the wrong place.
- Skipping the estimate, so a wrong answer looks fine.

Questions about adding and subtracting decimals

Why do I line up the decimal points?

Lining up the decimal points puts digits with the same place value in the same column. Then you add tenths to tenths and hundredths to hundredths, so the answer is correct.

What is a placeholder zero?

A placeholder zero is a zero you write at the end of a decimal so two numbers have the same number of decimal places. Writing 6.8 as 6.80 does not change its value, but it makes the columns match.

How do I subtract a decimal from a whole number?

Write the whole number with a decimal point and zeros. For $7 - 2.38$, write 7.00. Then subtract and regroup: $7.00 - 2.38 = 4.62$.

How do I estimate a decimal sum?

Round each number to the nearest whole number and add. For $18.7 + 5.34$ use $19 + 5 = 24$. The exact sum, 24.04, is close to the estimate.

How do I check a subtraction answer?

Add the difference to the number you subtracted. If you get the starting number, your answer is right. For example, $13.12 + 7.38 = 20.50$, so $20.5 - 7.38 = 13.12$ is correct.