

Grade 4 - Tenths, Hundredths and Decimal Notation - Lesson

Common Core 4.NF.C.5, 4.NF.C.6, 4.NF.C.7 · maths-pdf.fr/en/

Tenths and hundredths are decimal places. One tenth is $\frac{1}{10}$, or 0.1, and one hundredth is $\frac{1}{100}$, or 0.01. Ten hundredths make one tenth, so $\frac{3}{10} = \frac{30}{100} = 0.30$. To compare decimals, write them to the same place, then compare the digits from left to right.

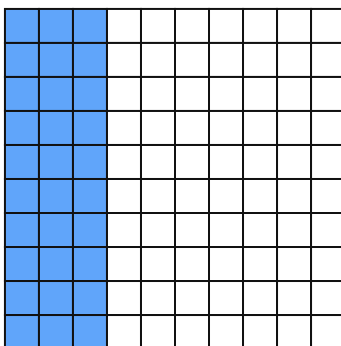
Grade 4 · Common Core State Standards: **4.NF.C.5, 4.NF.C.6, 4.NF.C.7**

Key facts

- One tenth = 10 hundredths, so $\frac{3}{10} = \frac{30}{100}$.
- The first digit after the decimal point is tenths and the second is hundredths.
- To add tenths and hundredths, rewrite the tenths as hundredths first: $\frac{3}{10} + \frac{4}{100} = \frac{34}{100} = 0.34$.
- Compare decimals by writing them to the same place: $0.4 = 0.40$, which is greater than 0.38.
- Money is hundredths of a dollar: a dime is \$0.10 and a penny is \$0.01.

What are tenths and hundredths?

Imagine a square cut into 100 equal small squares. One small square is one **hundredth**, written $\frac{1}{100}$. A column of 10 small squares is one **tenth**, written $\frac{1}{10}$.



3 columns shaded: 3 tenths, which is 30 hundredths.

Tenths and hundredths

$\frac{1}{10} = \frac{10}{100}$. So $\frac{3}{10} = \frac{30}{100}$. To change tenths to hundredths, multiply the numerator and denominator by 10.

How do you write a fraction as a decimal?

A **decimal point** separates the ones from the parts smaller than 1. The first place after the point is tenths. The second is hundredths. $\frac{3}{10} = 0.3$ and $\frac{34}{100} = 0.34$.

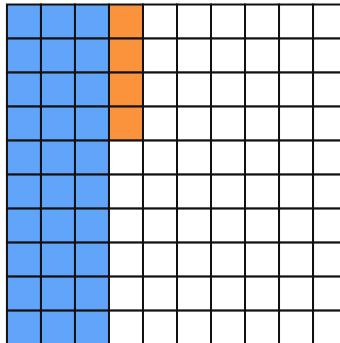
Ones	Tenths	Hundredths
0	3	4

0.34 has 3 tenths and 4 hundredths.

How do you add tenths and hundredths?

Write the tenths as hundredths first so the denominators match. **Example:** $\frac{3}{10} + \frac{4}{100}$.

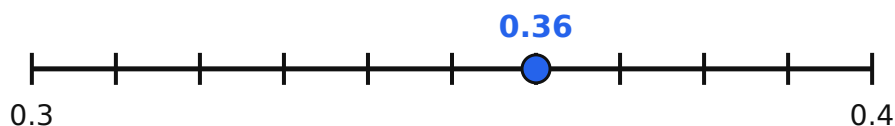
1. Change tenths to hundredths: $\frac{3}{10} = \frac{30}{100}$.
2. Add the numerators: $30 + 4 = 34$.
3. Write the sum: $\frac{30}{100} + \frac{4}{100} = \frac{34}{100} = 0.34$.



3 tenths (blue) and 4 hundredths (orange) make 34 hundredths.

How do you compare decimals?

Compare the digits from left to right, but only when the numbers are written to the same place. Write 0.4 as 0.40. Then compare 40 hundredths with 38 hundredths: $0.40 > 0.38$. So 0.4 is greater than 0.38 even though 38 is a bigger number than 4.



0.36 sits between 0.3 and 0.4.

Money works the same way. A dime is \$0.10, which is 10 hundredths of a dollar, and a penny is \$0.01, one hundredth of a dollar. Three dimes and four pennies make \$0.34.

What mistakes should you avoid?

- **Thinking a longer decimal is greater.** The decimal 0.4 is greater than 0.38, because 0.4 is the same as 0.40.
- **Adding the digits without place value.** In $\frac{3}{10} + \frac{4}{100}$, the answer is 0.34, not 0.7.
- **Mixing up the places.** The digit right after the decimal point is tenths. The next digit is hundredths.

A quick check: draw a 10 by 10 grid. Shade whole columns for the tenths and single squares for the hundredths, then count all the shaded squares to find the number of hundredths.

Questions about tenths, hundredths and decimal notation

What are tenths and hundredths?

A tenth is one of 10 equal parts of a whole, written $\frac{1}{10}$ or 0.1. A hundredth is one of 100 equal parts, written $\frac{1}{100}$ or 0.01.

How do you change tenths to hundredths?

Multiply the numerator and the denominator by 10. For example, $\frac{3}{10} = \frac{30}{100}$, because 3 times 10 is 30 and 10 times 10 is 100.

How do you write a fraction like $\frac{34}{100}$ as a decimal?

A fraction with denominator 100 has two decimal places. $\frac{34}{100}$ is 0.34, which is 3 tenths and 4 hundredths.

Why is 0.4 greater than 0.38?

Write 0.4 as 0.40. Then 40 hundredths is greater than 38 hundredths. The number of digits does not decide which decimal is greater.

How are decimals used with money?

A dollar is split into 100 cents, so each cent is one hundredth of a dollar. Thirty-four cents is $\frac{34}{100}$ of a dollar, written \$0.34.