

Grade 5 · Reading, Comparing and Rounding Decimals · Lesson

Common Core 5.NBT.A.3, 5.NBT.A.4 · mathovore.fr

Decimals show parts of a whole in tenths, hundredths and thousandths. You can write them in standard form, word form and expanded form. To compare two decimals, line up the decimal points and check digits from the left. To round, look one place to the right: 5 or more rounds up, 4 or less stays.

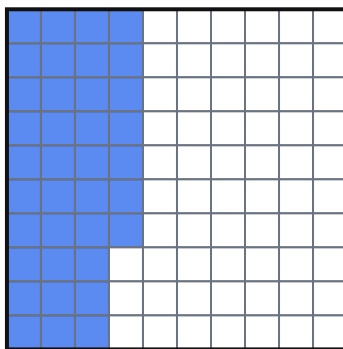
Grade 5 Common Core: 5.NBT.A.3 · 5.NBT.A.4

Key facts:

- Decimal places are tenths, hundredths and thousandths; each is 10 times smaller than the place to its left.
- Expanded form of 0.37: $3 \times \frac{1}{10} + 7 \times \frac{1}{100}$.
- Compare digits from the left, place by place; zeros at the end do not change the value.
- To round, look at the digit to the right of the target place: 5 or more rounds up.
- A decimal like 0.4 and 0.40 name the same amount.

How do you read and write decimals?

Decimals extend place value to the right of the decimal point. The places are tenths, hundredths and thousandths, and each is 10 times smaller than the place to its left. Read the decimal point as "and," then read the digits after it as one number followed by the name of the last place.



0.37

0.37 is read "thirty-seven hundredths." Thirty-seven of 100 squares are shaded.

Three ways to write a decimal

Standard form: 347.392

Word form: three hundred forty-seven and three hundred ninety-two thousandths

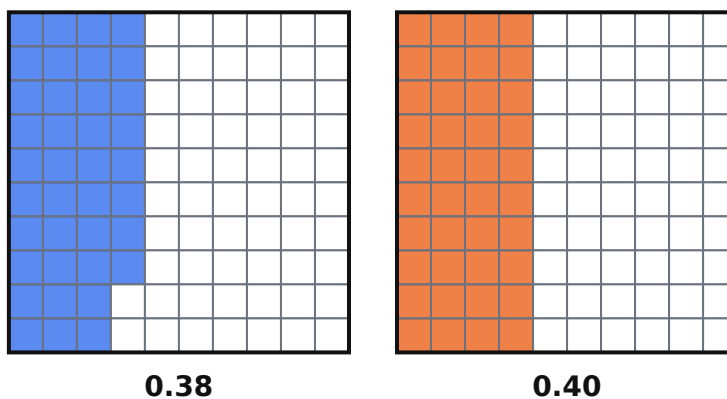
Expanded form: $3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times \frac{1}{10} + 9 \times \frac{1}{100} + 2 \times \frac{1}{1000}$

Hundreds	Tens	Ones	tenths	hundredths	thousandths
3	4	7	3	9	2

Each digit's place tells which fraction goes with it in the expanded form.

How do you compare decimals?

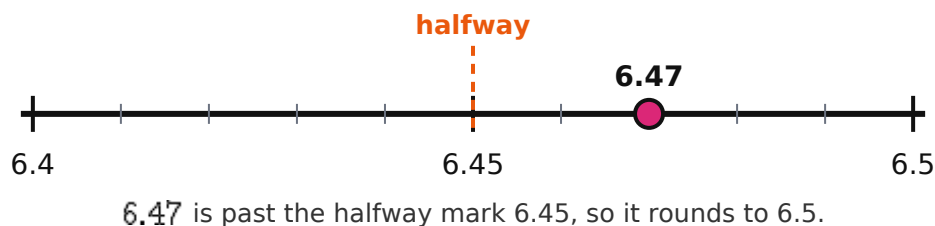
Line up the decimal points and compare digits from the left, one place at a time. The first place where the digits differ decides which number is greater. Extra zeros at the end do not change a decimal, so $0.4 = 0.40$. That is why $0.40 > 0.38$ even though 38 is greater than 4 when you ignore the decimal point.



Forty squares cover more than 38 squares, so $0.40 > 0.38$.

How do you round a decimal?

To round to a place, look at the digit one place to the **right**. If that digit is 5 or more, round up. If it is 4 or less, keep the digit. A number exactly halfway rounds up. On a number line, the answer is the nearest mark.



Method with an example: Round 4.683 to the nearest hundredth.

1. Find the hundredths digit: it is 8.
2. Look at the digit to its right, in the thousandths place: it is 3.
3. Since 3 is less than 5, keep the 8. Drop the digits after it.

So 4.683 rounds to 4.68. For 4.687 the next digit would be 7, so the answer would round up to 4.69.

Reading, Comparing and Rounding Decimals: frequently asked questions

How do you say a decimal like 6.08 in words?

Say "six and eight hundredths." The decimal point is read as "and," and the last digit is in the hundredths place, so the name ends in hundredths.

Is 0.5 the same as 0.50?

Yes. Writing a zero at the end of a decimal does not change its value. Five tenths and fifty hundredths cover the same part of a hundredths grid.

Why is 0.4 greater than 0.38 if 38 is greater than 4?

The digits after the decimal point do not name whole numbers. Compare place by place: 0.4 has 4 tenths and 0.38 has only 3 tenths, so 0.4 is greater.

What does it mean to round to the nearest hundredth?

It means to find the closest number with two decimal places. Look at the thousandths digit: round up if it is 5 or more, and keep the hundredths digit if it is less than 5.

Which way does a number halfway between two choices round?

It rounds up. For example, 3.25 is exactly halfway between 3.2 and 3.3, and it rounds to 3.3.