

Grade 5 - Reading, Comparing and Rounding Decimals - Lesson

Common Core 5.NBT.A.3, 5.NBT.A.4 · maths-pdf.fr/en/

Decimals are numbers with digits to the right of the decimal point: tenths, hundredths and thousandths. To read, write and compare them, use place value. Compare digits from left to right. To round, look at the digit just to the right of the rounding place: 5 or more rounds up, and 4 or less stays the same.

Grade 5 · Common Core State Standards: 5.NBT.A.3, 5.NBT.A.4

Key facts

- The places right of the decimal point are tenths, hundredths and thousandths.
- Expanded form shows each digit times its place value, such as $4 \times 1/10$.
- To compare decimals, compare digits from left to right, one place at a time.
- Adding zeros to the end of a decimal does not change its value: $0.3 = 0.30$.
- Round up when the next digit is 5 or more; keep the digit when it is 4 or less.

How do you read and write decimals?

Decimals go past the ones place. The places to the right of the decimal point are tenths, hundredths and thousandths. The decimal point is read as "and". So 3.482 is "three and four hundred eighty-two thousandths". The last digit tells the name of the place.

Tens	Ones		Tenths	Hundredths	Thousandths
	3	.	4	8	2

3.482 has 3 ones, 4 tenths, 8 hundredths and 2 thousandths.

Each place is worth 10 times the place to its right. The tenths place is worth 10 times as much as the hundredths place, and the hundredths place is worth 10 times as much as the thousandths place. In 3.482, the 4 is worth 0.4, the 8 is worth 0.08 and the 2 is worth 0.002.

What is expanded form?

Expanded form shows the value of each digit. You can use fractions or decimals.

Expanded form of 3.482

$$3 \times 1 + 4 \times \frac{1}{10} + 8 \times \frac{1}{100} + 2 \times \frac{1}{1000}$$

$$3 + 0.4 + 0.08 + 0.002$$

$$\boxed{3 \times 1} + \boxed{4 \times \frac{1}{10}} + \boxed{8 \times \frac{1}{100}} + \boxed{2 \times \frac{1}{1000}}$$

$$3 + 0.4 + 0.08 + 0.002 = 3.482$$

Add the parts to get 3.482.

How do you compare decimals?

Compare digits from left to right. Start at the biggest place. The first place where the digits differ decides which number is greater. Write zeros at the end to make the same number of places. Then 0.47 and $0.5 = 0.50$ are easy to compare: 47 hundredths is less than 50 hundredths. So $0.47 < 0.5$.

0.47



0.5



0.47 is less than 0.5 because $0.470 < 0.500$

Write 0.5 as 0.50 to compare hundredths.

Try 6.071 and 6.07 as a second example.

1. Write zeros so both numbers have three decimal places: 6.071 and 6.070.
2. Compare the ones, tenths and hundredths. The digits match.
3. Compare the thousandths: 1 is greater than 0.

So $6.071 > 6.07$.

How do you round a decimal?

Rounding finds the closest number with fewer places. Look at the digit just to the right of the place you are rounding to.

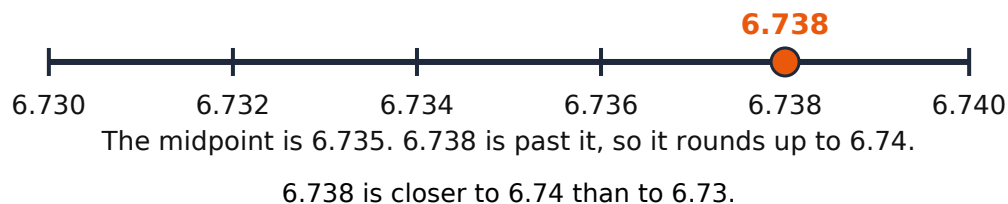
Rounding rule

- If that digit is 5 or more, round up.
- If that digit is 4 or less, keep the digit the same.
- Drop all digits to the right.

Round 6.738 to the nearest hundredth.

1. Find the hundredths digit: it is 3.
2. Look at the next digit, the thousandths digit: it is 8.
3. Since 8 is 5 or more, round the 3 up to 4.
4. Drop the 8.

The answer is **6.74**.



Questions about reading, comparing and rounding decimals

How do you say 0.205 in words?

Say "two hundred five thousandths". The last digit is in the thousandths place, so the name ends in thousandths. A whole number part is read first, then "and", as in 4.205, "four and two hundred five thousandths".

Are 0.3 and 0.30 equal?

Yes. 3 tenths and 30 hundredths name the same amount. Adding a zero at the end of a decimal does not change its value, so $0.3 = 0.30 = 0.300$.

Why is 0.5 greater than 0.45 even though 45 is greater than 5?

The decimals have different place values. Write 0.5 as 0.50. Then compare 50 hundredths with 45 hundredths. 50 is greater, so $0.5 > 0.45$.

What do I do when the digit to the right is exactly 5?

Round up. For example, 2.35 rounded to the nearest tenth is 2.4. A 5 is halfway, and the rule

says 5 or more rounds up.

What does nearest tenth mean?

It means to give the answer with one digit after the decimal point, using the closest tenth. For 5.648 the closest tenth is 5.6, because the hundredths digit 4 is less than 5.