

Read About Decimals to the Thousandths

WHAT ARE DECIMALS TO THE THOUSANDTHS?

You have worked with decimals that have tenths and hundredths. 2.13 has 1 tenth and 3 hundredths. Thousandths is the next place value to the right. 2.134 has 4 thousandths.

To better understand decimals to the thousandths...

LET'S BREAK IT DOWN!

Place Value in Decimals

When you work with whole numbers, 1 ten is equal to 10 ones. And 1 hundred is equal to 10 tens. In decimals it is similar. Hundredths are ten times smaller than tenths. Thousandths are ten times smaller than hundredths. Thousandths represent the number of parts out of a thousand. Just like 10 hundredths can be regrouped as one-tenth. 10 thousandths can be regrouped as 1 hundredth. Now you try: How many hundredths are the same as 20 thousandths?



Weighing Diamonds to Thousandths of a Gram

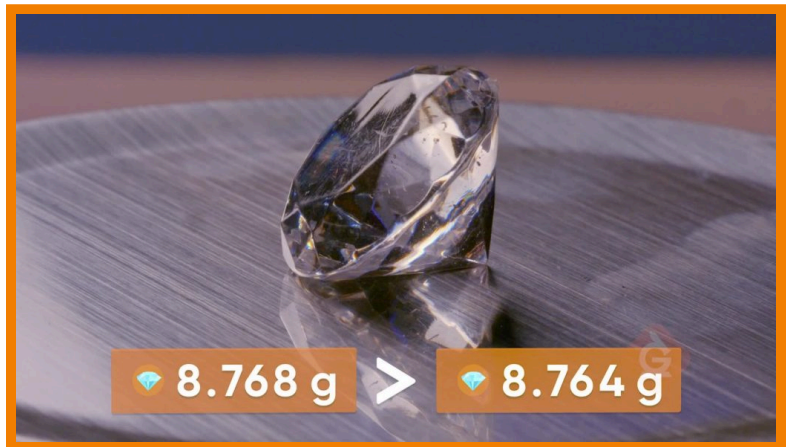
Some scales measure weight very precisely. If you weigh a diamond and the scale reads 8.768, this means there are 8 wholes, 7 tenths, 6 hundredths, and 8 thousandths. We read the number as “eight and seven hundred sixty-eight thousandths. Now you try: How would you say 4.216 in words?



Comparing the Weight of Diamonds

You weighed two diamonds. One weighs 8.768 g. The other weighs 8.764 g. Which weighs more? Compare the digits in the greatest place value. If those numbers are the same, we look at the next place value to the right. Comparing 8.768 and 8.764, the ones, tenths, and hundredths digits are all the same.

So, compare the thousandths place. 8 is greater than 4. Therefore, 8.768 is greater than 8.764. Now you try: How would you say 4.216 in words?



Compare Reaction Times

April's reaction time is 1.230 seconds. Adesina's time was 1.2. Who's reaction time is faster? Compare the digits in the greatest place, which is the ones place, and both numbers have 1. Next, we compare the tenths place, and both numbers have 2. 1.2 has no number in the hundredths and thousandths places. How can you compare them? Since those places have no value, you can just put zeros there. Then, 1.2 is the same as 1.200. Now we can compare. Since 3 in the hundredths place is greater than 0 in the hundredths place, 1.230 is greater than 1.2. Adesina's reaction time is faster than April's. Now you try. Which is greater, 9.89 or 9.899?



Rounding

A block of gold weighs 12.509 kilograms. Round that number to the nearest hundredth. To round to the nearest hundredth, look at the digit to the right, the thousandths place. If it is 5 or greater, round up. If it is less than 5, round down. Since 12.509 has 9 in the thousandths place, round up. This means that the 0 in the tenths place goes up to 1, and the rounded number becomes 12.51. Now you try. Round 22.174 to the nearest thousandth.



DECIMALS TO THE THOUSANDTHS VOCABULARY

Place value

Tells us the value of a digit based on its position in a number.

Decimals

Numbers that allow us to show parts of a whole.

Decimal point

Separates the whole numbers on the left from the decimal numbers on the right.

Whole numbers

Numbers on the left side of the decimal point.

Tenths place

Shows the number of parts out of 10.

Hundredths place

To the right of the tenths place, and shows us the number of parts out of 100.

DECIMALS TO THE THOUSANDTHS DISCUSSION QUESTIONS

How can you say 9.127 using words?

Nine and one hundred twenty-seven thousandths.

What place value tells you if 3.658 or 3.679 is greater?

The hundredths place tells me that 3.679 is greater.

Which is greater, 5.78 or 5.781?

Since 5.78 has no value in the thousandths place, I can just write 0. 5.78 is the same as 5.780. Since 1 is greater than 0, 5.781 is greater than 5.78.

Zoe finished her homework in 2.583 hours, while Hana finished hers in 2.588 hours. Who did their homework faster?

The thousandths place shows that 2.588 is greater than 2.583, so Hana took more time. That means that Zoe did her homework faster.

You want to round 4.719 to the hundredths place. Should you round up or down? Which number changes? What if you want to round 4.712 to the hundredths place?

Because 4.719 is closer to 4.72 than 4.71, I round up. The number in the hundredth place changes. 4.712 is closer to 4.71 than to 4.72, so the number in the hundredths place does not change and the rounded number is 4.71.
