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Estimating the Sum & Difference Between Two Decimals

In this video lesson, you will learn how to take an addition or subtraction problem with decimals and estimate the answer by rounding. You will learn that a rounded answer is very close to the actual answer.

Decimals and Estimating

As you learn more and more math, you will come across more and more **decimal numbers**, the numbers with a decimal point. It's not just in math that you come across these types of numbers. You also come across them in real life. Just think back to the last time you went to a store. Did you see something that you really wanted to get? Do you remember the price tag? Wasn't it a decimal number? If it was something small like a piece of chocolate, your price tag might only be $0.69. If it was something bigger like a board game, the price tag might be $24.99. All of these are decimal numbers because you can see the decimal point.

Imagine that you are shopping for yourself and you have several things in your cart that you really want. Your price tags are $3.69, $15.79, and $27.89. To figure out your total, you could add up all three of these prices together. Or you could estimate your total by rounding your prices.

To round your prices, you would pick which place value to round to. You can choose tenths, one space after the decimal. Or you can choose the ones or tens place. The smaller your place value, the closer you will get to your actual answer. So, choosing a place value to round to is really dependent on how accurate you want your estimate to be.

Let's take a look.

Rounding to the tenths gives us $3.70, $15.80, and $27.90. Adding these up gives us an estimate of $47.40.
Rounding to the ones place now gives us $4, $16, and $28. Adding these up gives us an estimate of $48.
Lastly, rounding to the tens gives us $0, $20, and $30. Adding these up gives us an estimate of $50.

Which one of these answers is closest to the actual answer? Adding up our actual prices gives us:

$3.69 + $15.79 + $27.89 = $47.37

It looks like the one that was rounded to the tenths gave us the closest estimate. That is to be expected. Just to reiterate, the smaller your place value that you are rounding to, the more accurate your estimate will be. So when you are working on these types of problems, if the problem doesn't tell you how much to round to, pick a place value that will give you the accuracy that you need.

Estimating a Sum

Let's take a look at a couple of problems. The first one is an addition problem.

Estimate 3.54 + 11.24. Round to the nearest whole number.

This problem already tells us to what place value to round to. Rounding our numbers to the nearest whole number, we get 4 and 11. Adding these up we get 4 + 11 = 15. Our estimate is 15. And we are done with this problem.

Estimating a Difference

Now, let's look at a subtraction problem.

Estimate 0.0089 - 0.00431.

This problem doesn't tell us to what place value to round to. But looking at the numbers, we see that the first number only has two place values with a digit that is not 0. I will pick the first place value with a non-zero digit to round to. This means that I am rounding to the third decimal place or the thousandths place. So, rounding both of my numbers to the thousandths place, I get 0.009 and 0.004. Using these numbers to estimate my answer, I get 0.009 - 0.004 = 0.005.

Lesson Summary

Let's review what we've learned.

Decimal numbers are the numbers with a decimal point. In some math problems, you will be asked to estimate an answer with decimal numbers in them. To do this, you round each number to the designated place value or you pick one that will give you the accuracy that you need, and then you do the math problem with your rounded numbers. Remember, the smaller the place value that you round to, the more accurate your estimated answer will be.

Learning Outcomes

- When you are finished with this lesson, you should be able to:

- Recall how to make an estimation as accurate as possible
- Solve a decimal estimation problem by rounding