Rounding Whole Numbers and Decimals

[Estimating](http://www.math.com/school/subject1/lessons/S1U1L3GL.html) is an important part of mathematics and a very handy tool for everyday life. Get in the habit of estimating amounts of money, lengths of time, distances, and many other physical quantities. Rounding is a kind of estimating.

**To round decimals**:

1. Find the place value you want (the "rounding digit") and look at the digit just to the right of it.
2. If that digit is less than 5, do not change the rounding digit but drop all digits to the right of it.
3. If that digit is greater than or equal to five, add one to the rounding digit and drop all digits to the right of it.

**To round whole numbers:**

1. Find the place value you want (the "rounding digit") and look to the digit just to the right of it.
2. If that digit is less than 5, do not change the "rounding digit" but change all digits to the right of the "rounding digit" to zero.
3. If that digit is greater than or equal to 5, add one to the rounding digit and change all digits to the right of the rounding digit to zero.
4. Estimating, or being able to guess and come close to a correct answer, is an important part of mathematics and a very handy tool for everyday life. You should get in the habit of estimating amounts of money, lengths of time, distances, and many other physical quantities. Rounding is a kind of estimating.
5. To round a number you must first find the rounding digit, or the digit occupying the place value you're rounding to. Then look at the digit to the right of the rounding digit. If it is less than 5, then leave the rounding digit unchanged. If it is more than five, add one to the rounding digit. If it is five, the rule is to always round up (add one to the rounding digit). This rule was created to "break the tie" when you are rounding a number that is exactly between two other numbers. These kinds of rules are called "conventions", and are important so we all get the same answer when doing the same problems.
6. If you're dealing with a decimal number, drop all of the digits following the rounding digit.
7. If you're dealing with a whole number, all the digits to the right of the rounding digit become zero.

This sounds a lot more complicated than it really is! It's easiest to learn rounding by studying examples.

***To round the number 16,745.2583 to the nearest thousandth***First find the rounding digit. This is the "8". You are trying to get rid of the all the digits to the right of the 8, but you want the result to be as accurate as possible.

Now look one digit to the right, at the digit in the ten-thousandths place which is "3". See that 3 is less than 5, so leave the number "8" as is, and drop the digits to the right of 8. This gives 16,745.258.

***To round 14,769.3352 to the nearest hundred***Find the rounding digit, "7". Look at the digit one place to right, "6". Six is more than 5, so this number needs to be rounded up. Add one the rounding digit and change all the rest of the digits to the right of it to zero. You can remove the decimal part of the number too. The result is 14,800.

***To round 365 to the nearest ten***
Find the rounding digit, "6". Look at the digit to the right of the six, "5". Since 365 is exactly halfway between 360 and 370, the two nearest multiples of ten, we need the rule to decide which way to round. The rule says you round up, so the answer is 370.



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