# **Decimals Comprehension Check**

1. How is place value with decimal numbers similar to place value with whole numbers?
2. Describe how to round 5.62 to both the tenths place and to the nearest whole number.
3. How is the process used for comparing decimal numbers similar to that of comparing whole numbers?
4. Solve the addition problem 5.38 + 2.07. How is adding decimal numbers similar to adding whole numbers?
5. Solve the subtraction problem 8.6 – 2.51. How is subtracting decimal numbers similar to subtracting whole numbers?
6. Explain how you would efficiently multiply the following decimals: 5.9 x 2.1. Is your answer reasonable? How do you know?
7. Explain how you would efficiently divide the following numbers: 210 ÷ 0.03. Is your answer reasonable? How do you know? (Dividing Decimals, p. 26-27)

Use what you know about fractions, decimals, and percentages to complete questions 8-10.

1. Compare 0.54 to .
2. Compare 75% to .
3. Compare 2.2 and 120%.

# **Decimals Comprehension Check Answer Key**

1. How is place value with decimal numbers similar to place value with whole numbers?
   1. Place value with decimal numbers is quite similar to place value with whole numbers because they both rely on the same base ten number system. In both decimal and whole number place value, each place represents 10 times as much as the amount to its right. For example, 1 is 10 times greater than 0.1 and 0.1 is 10 times greater than 0.01.
   2. Students may note the similarities between the names of different places, noticing that decimal names end in “-th” and that there is no “ones” place equivalent on the right of the decimal point.
2. Describe how to round 5.62 to both the tenths place and to the nearest whole number.
   1. We can apply the same rounding rules we use when working with whole numbers in order to round this decimal number. To round to the tenths, we will look at the digit to its right. The 2 tells us to round down, so 5.62 rounded to the tenths place is 5.6. To round to the nearest whole number, we will look at the digit to the right of the ones place. The 6 tells us to round up, so 5.62 rounded to the nearest whole number is 6.
3. How is the process used for comparing decimal numbers similar to that of comparing whole numbers?
   1. The process used for comparing decimal numbers is the same as that of comparing whole numbers. When comparing decimals, it is important to remember to line up the place values. One easy strategy for doing this is to make sure the decimal points are lined up. We compare by starting with the largest place value, moving right one place value until the digits we are comparing are different. The greatest digit in the greatest place value represents the greatest number, decimal or otherwise!
4. Solve the addition problem 5.38 + 2.07. How is adding decimal numbers similar to adding whole numbers?
   1. In order to solve this problem, we should line up our decimal points. Here, we will need to regroup just as we would regroup whole numbers:

1

5.38

+ 2.07

7.45

1. Solve the subtraction problem 8.6 – 2.51. How is subtracting decimal numbers similar to subtracting whole numbers?
   1. In order to solve this problem, we should line up our decimal points. Here, we will need to rewrite 8.6 as 8.60 to make lining up our place values easier. 8.60 – 2.51 = 6.09
2. Explain how you would efficiently multiply the following decimals: 5.9 x 2.1. Is your answer reasonable? How do you know?
   1. In order to multiply two decimal numbers efficiently, count to determine the number of places to the right of the decimal point in both factors. Then remove the decimal point to multiply both factors as though they were whole numbers. To finish, replace the decimal point in your product so your final answer has the same number of places to the right of the decimal point as both factors did.
   2. 5.9 x 2.1 is like 49 x 21, which is 1,239. In order to find the correct product of 5.9 and 2.1, we must make sure there are two places to the right of the decimal point, so 5.9 x 2.1 = 12.39.
   3. This is a reasonable answer. We know this because 5.9 rounds to about 6 and 2.1 rounds to about 2. 6 x 2 = 12, which is a close estimate compared to our final product.
3. Explain how you would efficiently divide the following numbers: 210 ÷ 0.03. Is your answer reasonable? How do you know? (Dividing Decimals, p. 26-27)
   1. In order to efficiently divide 210 by 0.03, it can be helpful to think about the problem as if it contained only whole numbers. To do this, we must move the decimal point in both numbers so they are whole numbers.
   2. In this example, we can multiply 0.03 by 100 to create a whole number of 3. We must therefore multiply the other factor, 210, by 100 to get 21,000. Now we can rewrite the problem as 21,000 ÷ 3 = 7,000. So, we know 210 ÷ 0.03 = 7,000.

Use what you know about fractions, decimals, and percentages to complete questions 8-10.

1. Compare 0.54 to .
   1. Because is equivalent to 0.5, we can say 0.54 > .
2. Compare 75% to .
   1. 75% is the same as 0.75 which is equivalent to , so we can say 75% = .
3. Compare 2.2 and 120%.
   1. Because 120% can also be written as the decimal 1.2, it is easy to see that 2.2 > 120%.