

Steaming Ahead with Fifth Grade Math

By Sunshine Dollar

Lesson 1

Whole Numbers

Whole numbers are 0, 1, 2, 3, and so on forever and do not contain fractional or decimal parts or negatives. For example, 2, 15, 128, and 1999 are all whole numbers. However, -2, $\frac{1}{2}$, and 2.5 are not whole numbers.

Let's try a couple of examples together. Are the following numbers whole numbers? Fill in the chart. The first one is done for you.

Number	Whole Number?
55	Yes
14.5	
-45	
325	
8 $\frac{1}{4}$	
25	

The chart in the answer key contains the answers to the chart you just filled in. If you got any wrong, try to figure out why it was wrong before you move on to the next section. The Answer Chart explains why the numbers that are not whole numbers are not whole numbers.

Here are more exercises to do to practice the idea of whole numbers.

Look at each number in the first chart. Put it in the correct column in the chart that tells if it is a whole number, and if it is not, why it is not.

-10	68.5	19 4/5	27	6 2/7	17 3/8	-249	91	-950	4 2/3
5	-76	6.9	4 1/2	-53	-17	67	-47	35.8	14 1/8
27 5/6	266.8	-25	387.9	477	83 8/9	6,276	291	452.7	7 9/10
275	675.9	2,578	-92	816.2	-17	25.8	5	12 3/4	36.4

Yes, it is a whole number	No, has a decimal	No, is a negative number	No, contains a fraction

Place Value

Numbers are written with digits. The **digits** are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. For example, 10 is a number written with the digits 1 and 0. The location of the digit in the number determines its **place value**.

Each digit in a number has a different value based on where the digit is placed. For example, in the number 26, the digit 2 is in the tens place and the digit 6 is in the ones place (see the chart below). This means that the 2 represents 2 tens or 20 and the 6 represents 6 ones or 6.

Let's finish the chart below. The first one is done for you and matches the example from the paragraph above.

Place Value		
Numbers	Tens	Ones
26	2	6
69		
77		
22		
64		

The chart in the answer key contains the answers to the chart you just filled in. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

More Place Value

The bigger a number is, the more places it has. In the number 1,326, the 2 is still in the tens place and the 6 is still in the ones place, but what about the 3 and the 1? The 3 is in the **hundreds** place, and the 1 is in the **thousands** place.

Let's try this on another chart. Fill in the chart, placing the digits in the correct value column. The first one has been done for you and matches the example from above.

Place Value				
Numbers	Thousands	Hundreds	Tens	Ones
1326	1	3	2	6
7895				
4694				
1238				
6426				

The chart in the answer key contains the answers to the chart you just filled in. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

To figure out the place value of a number, you do not have to draw a chart. You can just look at a number and determine its value. For example, in the number 2,356, we can see that the 3 is in the hundreds place and has a value of 300, without drawing a chart.

Let's do a couple together. What is the value of the 5 in each number below?

654 - the 5 is in the **tens** place and has a value of **50**

543 - the 5 is in the **hundreds** place and has a value of **500**

Good job! In the next lesson, we will learn more about place value.

Lesson 2

Place Value with Decimal Numbers

Decimal numbers are numbers that contain a decimal point followed by digits. A **decimal point** is a dot located in a number which separates the digits that are greater than 1 and the digits with a value of less than one.

For example, 2.5 is a decimal number. It contains the digit 2 which has a value greater than 1, a decimal point, and the digit 5 which has a value less than 1. The number 2.5 means there are 2 whole items and part of another.

Let's look at this on a place value chart. Notice that the ones column on the chart is the same as the place value charts we have already done. However, now there is a column to the right of the ones which represents the decimal values. This place value is called the **tenths**.

Place Value		
Numbers	Ones	Tenths
2.5	2	5

Be careful not to confuse the *tenths* place with the *tens* place; they are very different. A 5 in the tens place has a value of 50. A 5 in the tenths place has a value of .5 which is less than 1.

There are also columns to right of the tenths column. A couple of these are the **hundredths** place and the **thousandths** place.

Let's look at these on a place value chart. The number 6.123 is shown on the chart below. Notice that there are 6 ones, 1 tenth (or .1), 2 hundredths (or .02), and 3 thousandths (or .003) in the number.

Be careful when writing the numbers between the decimal point and the digits. Make sure you insert any 0's that are needed to hold your place. For example, there is a difference between .5 (5 tenths) and .05 (5 hundredths). You need the 0's as placeholders to keep the value of the number just like when you write numbers greater than 1. For example, you wouldn't write 500 without the 0's; that would be just 5. The same holds true for numbers less than 1.

Let's finish the chart below.

Place Value				
Numbers	Ones	Tenths	Hundredths	Thousandths
6.123	6	1	2	3
5.648				
3.892				
4.789				
2.006				

The chart in the answer key contains the answers to the chart you just filled in. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

Here are more exercises to do to practice the idea of place value in decimal numbers.

Place Value				
Numbers	Ones	Tenths	Hundredths	Thousandths
2.697				
3.812				
9.276				
8.931				
5.344				
7.649				
1.763				
4.453				
6.128				
5.586				

Good job! In the next lesson, we will review what we have learned about place value.

Lesson 3

Review of Place Value

In this lesson, we will review what you have learned about place value. We have learned that place value can be represented on a chart like the one below. Notice that this chart contains thousands through thousandths. In previous lessons, they were separate. The columns that represent the decimal places are highlighted in blue.

Let's review place value by completing the chart. The first one has been done for you. Notice that since this number is a whole number, not a decimal number, there are no tenths, hundredths, or thousandths, so these digits are simply 0. Be careful to use 0's as your placeholder as well if needed.

Place Value							
Numbers	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
1,123	1	1	2	3	0	0	0
2,356.1							
3,458.05							
158.635							
4,806.5							

The chart in the answer key contains the answers to the chart you just filled in. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

Now let's practice some without the chart. What is the place value of the 3 in the following numbers?

3,564 the 3 is in the _____ place and has a value of _____.

5,326 the 3 is in the _____ place and has a value of _____.

34 the 3 is in the _____ place and has a value of _____.

50.3 the 3 is in the _____ place and has a value of _____.

The answers for the problems you just did are in the answer key. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

Good job! In the next lesson, we will learn how to round numbers.

SAMPLE

Lesson 4

Rounding Decimals

In this lesson, we will learn how to round decimals. **Rounding** a number is simply making the number easier to use but keeping it as close as possible. For example, the number 10 is very easy to use. It is easy to add it, subtract it, multiply it, and even divide it. The number 14, however, is not that easy to use. So, if we say that 14 is close to 10 and use the 10 instead, we make things easier.

Let's talk about rounding whole numbers before we go into rounding decimals. There are some steps to rounding numbers to make sure your rounded numbers stay close to the original number. Here are the steps with an example of each step.

1. The first thing you must pay attention to is to what place the number is to be rounded. In this lesson, we are only rounding to the tens place, but that will not always be the case. **For example, round 26 to the nearest tens. Notice it says to the tens place.**
2. Find the digit that is in that place and underline it, then look at the digit to the right of it. **The 2 is in the tens place, so we look to the right at the ones place.**
3. Decide if that digit (the one on the right) is less than 5 or 5 or greater. **The digit in the ones place is a 6, so it is greater than 5.**
4. If the digit is less than 5, then you leave the digit that is being rounded the same as it is. However, if the digit on the right is 5 or greater, the digit being rounded goes up to the next digit. **Since the 6 is greater than 5, we round the 2 up to a 3 and say that 26 rounds to 30.**

Let's do some problems together. Round the following numbers to the nearest tens.

34 = to round 34 to the nearest tens, we underline the 3. Then look at the 4 and decide that it is less than 5. Therefore, we round down to 30.

85 = to round 85 to the nearest tens, we underline the 8. Then look at the 5 and decide that it is 5 or greater. Therefore, we round up to 90.

Rounding decimals is basically the same. The only difference is that you would be using the numbers to the right of the decimal point. For example, let's round 2.6 to the nearest whole number. We follow the same steps as before. We underline the 2 (because that is the whole number). Then we look at the 6 which is 5 or greater, so we round up to 3. Therefore, 2.6 rounded to the nearest whole number is 3.

This also works for rounding numbers to the tenths, hundredths, and so on. For example, let's round 0.26 to the nearest tenth. First, we underline the 2 because it is in the tenths place. Then we look at the 6 which is 5 or greater, so we round up to 3. Therefore, 0.26 rounded to the nearest tenths is 0.3.

Let's do some problems together.

Round the following number to the nearest tenths.

0.34 = to round 0.34 to the nearest tenths, we underline the 3. Then look at the 4 and decide that it is less than 5. Therefore, we round down to 0.3.

Round the following number to the nearest hundredths.

1.285 = to round 1.285 to the nearest hundredths we underline the 8. Then look at the 5 and decide that it is 5 or greater. Therefore, we round up to 1.29.

Now try to do the following problems on your own. Round the following numbers to the nearest tenths.

$$2.43 = \underline{\hspace{2cm}}$$

$$4.48 = \underline{\hspace{2cm}}$$

$$3.17 = \underline{\hspace{2cm}}$$

$$5.35 = \underline{\hspace{2cm}}$$

The answers for the problems you just did are in the answer key. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

Here are more exercises to do to practice the idea of place value in decimal numbers. Round the numbers to the nearest tenths.

6.29 _____

2.15 _____

7.58 _____

6.31 _____

2.73 _____

4.45 _____

3.44 _____

9.37 _____

1.67 _____

5.46 _____

5.49 _____

3.37 _____

3.72 _____

9.61 _____

1.36 _____

5.22 _____

6.52 _____

2.86 _____

4.92 _____

1.51 _____

The answers for the problems you just did are in the answer key. If you got any wrong, try to figure out why it was wrong before you move on to the next section.

Good job! In the next lesson, we will review what we have learned so far.

Lesson 5

Review

In this lesson, we will review everything that we have learned so far.

Important Vocabulary

Whole numbers are 0, 1, 2, 3, and so on forever and do not contain fractional or decimal parts or negatives.

The **digits** are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.

The location of the digit in the number determines its **place value**.

Decimal numbers are numbers that contain a decimal point followed by digits.

A **decimal point** is a dot located in a number which separates the digits that are greater than 1 and the digits with a value of less than 1.

Rounding a number is simply making the number easier to use but keeping it as close as possible.

Let's try some problems to see how much you remember.

Circle the whole numbers below.

-65

25

32.7

55 1/2

22

3,546

In what place is the 8 in the following numbers?

8,564 the 8 is in the _____ place and has a value of _____.

5,826 the 8 is in the _____ place and has a value of _____.

85 the 8 is in the _____ place and has a value of _____.

50.8 the 8 is in the _____ place and has a value of _____.

6.258 the 8 is in the _____ place and has a value of _____.

516.28 the 8 is in the _____ place and has a value of _____.

Round the following numbers to the place given.

Tens: 84 = _____ 65 = _____ 78 = _____

Tenths: 1.55 = _____ 2.78 = _____ 1.23 = _____

The answers for the problems you just did are in the answer key. If you got any wrong, try to figure out why it was wrong and study that type of problem before you take the test.

Good job! In the next lesson, we will learn how to add decimals.