WILLIAM D. LAW, JR. LEARNING COMMONS

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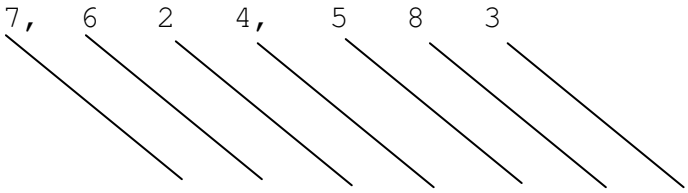
READING AND WRITING DECIMAL NUMBERS

Review the place value of whole numbers in your text. Write the place value under each digit of the whole number.



Moving from **right** to **left**, notice each place value is **ten times the one on its right**.

Moving from **left** to **right**, each place value is $\frac{1}{10}$ of the one on its left.

EXAMPLE:

	5	8	3
place value	(100)	(10)	(1)
		a ↘	b ↘

a: 10 is $\frac{1}{10}$ of 100

b: 1 is $\frac{1}{10}$ of 10

REMEMBER $\frac{1}{10}$ of a number means $\frac{1}{10}$ x the number.

Let's continue to move to the right.

$\frac{1}{10}$ of 1 is $\frac{1}{10}$

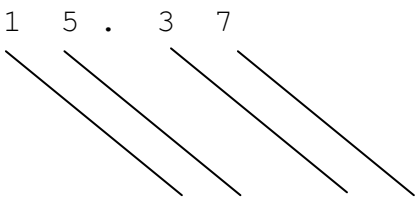
NOTICE the place values to the right of the ones place are fractions with values less than 1.

NEXT $\frac{1}{10}$ of $\frac{1}{10}$ is $\frac{1}{100}$

and $\frac{1}{10}$ of $\frac{1}{100}$ is $\frac{1}{1000}$

We use a decimal point to separate the whole number part from the fraction part of a number.

Write the place values under each digit.



The whole number is 15.

The number **after** the decimal is the numerator of a fraction; the denominator is the **last** place value. The fraction part is $\frac{37}{100}$.

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15.37 is read just as the mixed $15\frac{37}{100}$

"Fifteen and thirty seven hundredths."

NOTICE the word "and" is read at the decimal point. It connects the whole number with the fraction part. **DO NOT SAY "AND" at any other part of the number."**

We read $\frac{7}{1000}$ as "Seven thousandths"

Similarly 0.007 or .007 is read "seven thousandths." (We do not need to say "Zero and $\frac{7}{1000}$."

1. – 4. Write in words the way you read each number.

1. 103.052

2. 0.94

3. 9.4

4. 60.06

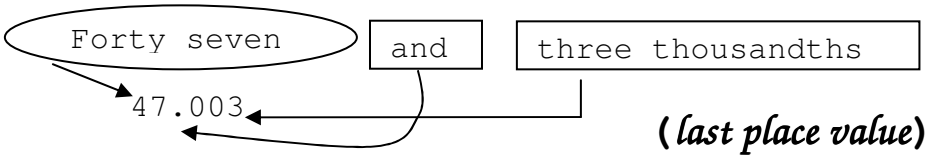
When numbers are written as words you can write them in standard form. REMEMBER if there is not an "AND", the number is either a whole number or it is a fraction. If it's a fraction the denominator will end in "TH". Whole numbers are written without a decimal point or with the decimal point at the end. Fractions are written after the decimal point. The numerator is placed so that the last digit is in the place value named by the denominator (the "TH" word). If there are not enough numbers in the numerator to place above all the needed place values, fill in zeros immediately after the decimal point. Zero is usually written before the decimal point, too if the value is less than one)!

EXAMPLES:

a. thirty-eight	38. or	38
b. seven hundredths	0.07	
c. six hundred four thousandths	0.604	
d. seventy hundredths (Compare b and d)	0.70	

When there is an "AND", write the whole number (using the words before "and"); write the fraction's numerator so that its last digit is in the place named by the denominator.

EXAMPLE:



5. – 8. Write these numbers in standard form.

5. fifty-four ten thousandths_____

6. three and twelve hundredths_____

7. eight tenths_____

8. seven hundred and seven hundredths_____

9. – 10. Write these numbers in standard form using decimal notation.

9. $\frac{13}{10000}$

10. $6\frac{9}{100}$

ANSWERS:

1. one hundred three and fifty-two thousandths
2. ninety-four hundredths
3. nine and four tenths
4. sixty and six hundredths
5. 0.0054
6. 3.12
7. 0.8
8. 700.07
9. 0.0013
10. 6.09

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