Place Values and Rounding

Identifying the **PLACE VALUE** is useful in Chemistry to read a number aloud, identify a number in a series of numbers, to round a number, and to make measurements.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | millions | Hundred thousand | ten thousand | thousand | hundreds | tens | ones | decimal | tenths | hundredths | thousandths | Ten thousandths |
|  |  |  |  |  | 4 | 2 | 3 | . | 4 | 5 |  |  |
| 1) |  |  |  |  |  |  |  | . |  |  |  |  |
| 2) |  |  |  |  |  |  |  | . |  |  |  |  |
| 3) |  |  |  |  |  |  |  | . |  |  |  |  |
| 4) |  |  |  |  |  |  |  | . |  |  |  |  |

In the example above, I used the measurement of 423.45 cm. I placed the numbers in the appropriate column to describe its location and better identify which number we are talking about.

**Write the following numbers in the chart above placing each number in the correct column according to its place value.**

1. 100,056
2. 2.454
3. 111.5
4. 3210.124

When **ROUNDING** to a specific place value you want to look at the digit to the right of the place value you are rounding to. If this number has a value of 0 to 4 the number you are rounding stays the same. If the number has a value of 5-9 then you round the number up 1 number.

Look at the following examples and then complete the rest of the problems.

|  |  |
| --- | --- |
| Round to the ones place | Round to the tenths place |
| 25.5 | 26 | 1.88 | 1.9 |
| 25.4 | 26 | 1.83 | 1.9 |
| .9 | 1 | 77.751 | 77.8 |
| .4 | 0 | .04 | 0 |
| .45 | Still 0.0 ☺ | .045 | Still 0.0 ☺ |
| 1. 1056.78
 |  |  11) 6.72 |  |
| 1. 1056.48
 |  |  12) .24 |  |
| 1. 5.3
 |  |  13) 1000.99 |  |
| 1. 4.08
 |  |  14) 53.11 |  |
| 1. 10000.8
 |  |  15) .035 |  |
|  10) .75 |  |  16) 645.3498 |  |

Write 3 practice problems for your partner:

1.

2.

3.