**Analyzing Data**

1. **Units – Language of Science**
2. **SI system (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) – standard unit of measurement**
3. **There is only \_\_\_\_\_ base unit for each thing measured**
4. **Length =**
5. **Weight =**
6. **Volume =**
7. **How big are they?**

|  |  |
| --- | --- |
| 1. **Meter -**
 | **graphic of temperature and commonly used metric units**  **graphic of temperature and commonly used metric units**  |
| 1. **Liter -**
 |
| 1. **Gram -**
 |

1. **Measured in multiples of \_\_\_\_\_\_\_\_\_\_\_**
2. **Prefix -**
3. **6 Common Prefixes**

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| --- | --- | --- |
| **Prefix** | **Symbol** | **Number** |
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| **Base Units (meter, liter, gram)** |
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1. **Decimal Moving**

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**Conversion steps:**

1. **Find your \_\_\_\_\_\_\_\_\_\_\_ point and \_\_\_\_\_\_\_\_\_\_\_ point**
2. **Count the \_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_ you take to get from your starting point to your ending point.**
3. **The decimal is moved \_\_\_\_ place for every \_\_\_\_\_\_ you take**
4. **Move the decimal to the \_\_\_\_\_\_\_\_ if going up the stairs**
5. **Move the decimal to the \_\_\_\_\_\_\_\_ if going down the stairs**
6. **Meter –**
7. **Common measurements**
	1. **1mm =**
	2. **1 cm =**
	3. **1 dm =**
	4. **1m =**
	5. **1km =**
8. **Area - the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that fit in a 2-D object**

**a.**

1. **Liter –**
2. **Common measurements**
	1. **5mL =**
	2. **250mL =**
3. **Volume - the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that fit in a 3-D object**
4.
5. **1mL =**
6. **solids are measured in \_\_\_\_\_\_\_\_\_\_**
7. **liquids and gases are measured in \_\_\_\_\_\_\_\_\_\_\_**
8. **Gram –**
9. **Common measurements**
	1. **1g =**
	2. **1kg =**
10. **Celsius –**
11. **Common measurements**

|  |  |
| --- | --- |
| 1. **freezing point of water = \_\_\_\_\_\_\_**
2. **Boiling point of water = \_\_\_\_\_\_\_**
3. **Body temperature = \_\_\_\_\_\_\_**
4. **Remembering a few temperatures in Celsius:**

 **\_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_,** **\_\_\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_,** **\_\_\_\_\_\_ is \_\_\_\_\_\_\_\_\_\_\_,** **\_\_\_\_\_\_\_\_ is \_\_\_\_\_\_\_.** |   **˚C ˚F** |

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1. **Density - measures the amount of \_\_\_\_\_\_\_\_ in a given unit of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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|  **“I’m your density”** | **Equation:** |

1. **Water has a density of \_\_\_\_\_\_\_\_\_\_\_\_**
	1. **If an object is more dense than water, it will \_\_\_\_\_\_\_\_\_\_\_\_. If it is less dense than water, it will \_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
2. **Scientific notation –**
3. **Coefficient –**
4. **Exponent –**
5. **The number 10 raised to an exponent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_ that precede or follow the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	1. **# greater than one -**
	2. **# less than one -**
6. **Determining the exponent –**
7. **Addition and Subtraction –**
8. **If not the same, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
9. **Multiplication - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the coefficients and \_\_\_\_\_\_\_\_\_\_\_ the exponents**
10. **Division - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the coefficients and \_\_\_\_\_\_\_\_\_\_\_ the exponents**
11. **Uncertainty in Data**

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1. **Accuracy - how close a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ comes to an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value**
2. **Precision - how close a \_\_\_\_\_\_\_\_\_\_\_ of similar \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ comes to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (reproducibility)**
3. **EXPERIMENTAL ERROR AND PERCENTAGE ERROR**
4. **The experimental error is calculated by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value (E=O-A)**
5. **The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ error is the comparison of the experimental error to the accepted value expressed as a percentage.**
6. **The error may be either positive (the experimental result is too \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) or negative (the experimental result is too \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)**
7. **% Error =**
8. **Significant figures**
9. **All the \_\_\_\_\_\_\_\_\_\_\_\_ in a measurement that can be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ plus a \_\_\_\_\_\_\_\_\_ digit that must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
10. **Finding significant numbers (THE EASY RULES)**
	1. **If there is a decimal place in the number**
* **Draw an arrow from \_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_ to find the \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ digit, then count the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as significant figures**
* **25.0260 =**
* **0.00486 =**
	1. **If there is no decimal place in the number**
* **Draw an arrow from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to find the \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ digit, then count the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as significant figures**
* **250260 =**
1. **Representing Data**
2. **Graph –**
3. **Why use graphs?**
4. **Types of graphs**
	1. **Bar graph –**
	2. **Line graph –**
	3. **Circle graph –**