Name:

Class:

**Scientific Method Review Sheet**

1. Science is defined as a process because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and it is defined as knowledge because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
2. Fill in the table:

|  |  |  |
| --- | --- | --- |
| **Type of Observation** | **Definition** | **Example** |
| Qualitative |  | Brown car, small dog, Hot soup |
|  | Information gathered by measuring or counting an amount |  |

1. Fill in the table:

|  |  |  |
| --- | --- | --- |
| Measurement | Base Unit | Measurement tool |
|  |  | Ruler |
|  | Grams (g) |  |
| Volume |  |  |

1. Fill in the table:

Base Unit

1. Complete the conversions:

A. 1 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mm

B. 1 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m E. 1 kL = \_\_\_\_\_\_\_\_\_\_\_ L H. 56.98 cg = \_\_\_\_\_\_\_\_\_\_ mg

C. 1 m = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mm F. 1 g = \_\_\_\_\_\_\_\_\_\_\_\_ mg I. 34.56 cL = \_\_\_\_\_\_\_\_\_\_\_\_ L

D. 345.2 mg = \_\_\_\_\_\_\_\_\_\_\_\_ g G. 8.345 L = \_\_\_\_\_\_\_\_ cL J.0. 5698 km = \_\_\_\_\_\_\_\_\_\_ mm

1. Write an observation and a matching inference about your backpack.
2. Measure these lines with a ruler.

 \_\_\_\_\_\_\_\_ cm \_\_\_\_\_\_\_\_mm \_\_\_\_\_\_\_\_ cm \_\_\_\_\_\_\_mm \_\_\_\_\_\_\_\_ cm \_\_\_\_\_\_\_\_mm

1. What is the process being used to measure the volume of the objects?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the volume of the… toy fish?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Susan is studying honey production in bees. She measures the number of flowers visited by a colony of bees (a tough job!). Normally bees She observes the volume of honey produced in mL.
	1. What is the question being tested?
	2. What is the depending variable?
	3. What is the independent variable?
	4. What needs to be controlled (constant) in the study? List 4 things.
	5. Indentify the control group.
	6. Indentify the experimental groups.
	7. What might be her hypothesis? (pay attention to format!)
	8. Sketch a graph of the results.
2. Fill in the following table with a check mark where it applies

|  |  |  |
| --- | --- | --- |
|  | **Hypothesis** | **Theory** |
| Has been tested  |  |  |
| Has only initial data behind it |  |  |
| Has lots of data behind it |  |  |
| Can be proven false |  |  |
| Has so much data that it is accepted as true but is still tested |  |  |
| Can make predictions |  |  |
| Is the best current explanation of a large amount of data accepted by the scientific community |  |  |

1. Graph each of the following data sets on graph paper. Identify if it is a line or bar graph. Which is the independent and dependent data

|  |  |
| --- | --- |
| Size of Magnet (cm) | Amount of metal paper clips picked up (g) |
| 5 | 18 |
| 2 | 10 |
| 4 | 15 |
| 3 | 13 |
| 7 | 25 |

* 1.

|  |  |
| --- | --- |
| Country |  # of Olympic Medals |
| USA | 66 |
| Germany | 54 |
| Russia | 40 |
| South Africa | 36 |