**Scientific Method: Process skills notes**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that scientists follow to solve problems.**
* **Scientific Method: 1. Observations 2. Problem**

**3. Hypothesis 4. Experiment (Data) 5. Analysis**

**6. Conclusions**

* **Observations**

**Uses \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**How something looks, movement or reaction, texture (how it feels), smells, sound, \*taste**

**\* *never taste chemicals in a lab***

* **Problem**

**What do you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?**

* **Hypothesis**

**A suggested \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the problem. (An educated guess.)**

**Must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* **Parts of an experiment**

**1. Control- part(s) that remain the same ( \_\_\_\_\_\_\_ being tested.**

**Controls are used for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**2. Independent variable- part that you \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in an experiment.**

**3. Dependent variable- the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (caused by the change that was made)**

* **Example**

**A person wants to test to see if acid rain has an affect on the growth of plants. The person uses the same types of plants& same amount of sunlight. The person uses 2 plants. 1 will receive plain water while the other plant receives the acid rain water. After 6 days, the 1st plant continued to grow, while the 2nd plant died.**

**Answer the following:**

**What are the controls?**

**What is the independent variable?**

**What is the dependent variable?**

* **Analysis**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ data results. Do they make sense? Why or why not?**

* **Conclusion**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the results. Did you prove your hypothesis**

* **Review: Solving a problem**
* **1)Identify a Problem**
* **2) State Observations about the problem**
* **3) Form a Hypothesis about the problem (if…then…)**
* **4) Design an Experiment to test the hypothesis**
* **5) Collect Data**
* **6) Form a Conclusion**
* **7) Retest**

**Observations vs Inference**

Conclusions or deductions based on observations.

The process of drawing a conclusion from given evidence.

* Practice:

**Observations:**

* I hear people screaming.
* I smell popcorn, candy, & hamburgers
* I see a lot of people

**Inference=**

Any information collected with the senses.

Quantitative-measurable or countable

* 3 meters long
* 4 marbles
* 50 kilograms
* 35 degress Celsius

Qualitative- describable, not measurable

* Red flowers
* Smells like fresh baked cookies
* Tastes bitter

The skill of describing scientific events