**How to Write A Lab Report utilizing the *Scientific Method***

[CCSS.ELA-Literacy.RST.11-12.3, 7, 8, 9]

Ms. Barnett

In order to validate any study, all sections must be written (communicated) in 3rd person, clearly, concisely, and specifically so that repeat studies may be done by independent labs. Always check with your instructor for variations in written standards/ requirements.

**COVER SHEET:**

1. Name
2. Date
3. Period
4. Title of Laboratory Experiment
5. Names of All Lab Partners

**BODY OF LAB REPORT:**

**PRE-LAB:**

**Purpose** – (***State the Problem***)

 This is a general statement explaining why you are doing the lab.

**Theory/ Introduction** – (***Observing/ Collect Data/ Gather Background Information***)

 Describe the qualitative and quantitative data, principles, and concepts to be examined, and define the system to be studied. All variables should be described and kept constant except the one being studied. Clearly connect the lab with the material covered in class and the textbook.

**Hypothesis** – (***Form the hypothesis***)

 This is a testable statement identifying the independent variable that will be manipulated and proposes a measurable outcome for the dependent variable, including a short justification as to why the outcome would be reasonable.

**LAB:** (***test the hypothesis***) **NEVER erase or white out. Cross out errors with a SINGLE LINE ONLY.**

**Materials** – List the specific chemicals, equipment, and materials used in the experiment.

**Safety** – List all safety items/ actions necessary for the experiment.

**Procedure** – List step-by-step instructions for the procedure, specific enough to be followed and repeated by an independent lab to obtain similar results. (Higher level labs may prefer this to be written in passive 3rd person narrative form.) Clearly identify the control.

**Observations/ Data** – Record all qualitative (color, texture, odor, sound, etc.) and quantitative (measured time, temperature, mass, volume, etc.) descriptions of initial materials and changes observed during the experiment. May contain charts when appropriate.

**POST-LAB:**

**Chemical Equations/ Calculations/ Problems** – (***Analyze the data***) LABEL ALL UNITS of measurement.

 Write all chemical reactions/ changes that take place and all calculations used. Show work.

**Graphs/ Charts** – (***Analyze the data***) Title and label clearly and concisely. When designing line graphs, use best-fit line, Independent variable on the x-axis, dependent variable on the y-axis.

**Discussion/ Questions /** – (***Analyze the data/ theorizing***)

Explain the outcome of the experiment. Answer any questions. Clearly identify the control.

**Conclusion** – (***Was the hypothesis supported or refuted?***) CANNOT be proven. Either accepted or rejected.

 May use “Yes/ No the hypothesis was/ was not supported”. Explain by correlating the data of the independent and dependent variables with the proposed outcome. % error, which measures accuracy, may be useful. Explain any potential errors. Summarize results to compliment the Purpose and indicate implications of the experimental results.

**References/ Bibliography** – Use alphabetic order, APA Format

**References:**

Council of Chief State School Officers (CCSSO), National Governors Association Center for Best Practices (NGA). (2012). Implementing the Common Core State Standards. *Common Core State Standards Initiative*. Retrieved August 19, 2013 from http://www.corestandards.org/ELA-Literacy/RST/11-12.

The Writing Center, University of North Carolina at Chapel Hill. Scientific Reports. (2007). Retrieved September 5, 2011. <http://www.unc.edu/depts/wcweb/handouts/lab_report_complete.html>

Appendix -

**COMMON CORE STANDARDS:**

[**CCSS.ELA-Literacy.RST.11-12.3** Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results base on explanations in the text.]

[**CCSS.ELA-Literacy.RST.11-12.7** Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem]

[**CCSS.ELA-Literacy.RST.11-12.8** Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.]

[**CCSS.ELA-Literacy.RST.11-12.9** Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.]