Lab Practicum

Grade 7: Earth Science

Grade 7: Technology

Quarter 3

**Earth Science Directions**

Background

Your team will develop, test, evaluate, and revise an educational product created to teach upper elementary & middle school students about volcanoes and/or earthquakes. (Science Criterion F) You will **individually** write a report that will count as your lab practicum. (Science Criteria D & E)

Educational products may include paper or computer games, model kits, arts & crafts, mini-labs, and much more. Be creative. But, make sure to have enough materials to have two tests of your product.

Step One: How Do You Make It Effective?

Educational products are of no use unless they effectively teach the audience. First, really make a list of specific facts that your product is intended to teach. Be very, very specific. Next, how is your product better than simply reading about it in a textbook? How are you going to make it effective?

Step Two: The Hypothesis

Your hypothesis is a one sentence explanation of how you are going to effectively teach your specific topic. One example: “The use of upbeat cartoon pictures and progressively more difficult memorization challenges will effectively teach the concepts of tsunami creation, tsunami stages, and strategies to avoid tsunami damage.”

Step Three: Create Measuring Tools

How will you know if your educational product is effective? You will have two test groups try your product. You will have an opportunity before the test trial to explain your product. Then you will observe your test group (3-5 students) using your product. You will do this two times.

What kind of objective data can you collect? How will you collect the data? How can you present the data? How can you use the data to improve your product? Will you need to create a document before the test trial?

Step Four: Product Testing

Your team will have an opportunity to present your product to a test group. The test group will use your product, giving you an opportunity to make observations. You may also ask questions about the product and about the list of specific facts that your product is intended to teach. Collect data on the effectiveness of your product. You will have two opportunities to test your product.

Step Five: Analyze, Evaluate, and Revise

What charts or graphs will be most effective in analyzing your data? Use your data to evaluate your product. Revise your product to reflect your analysis of the effectiveness of your product.

Step Six: Science Lab Practicum

The lab practicum report will be slightly different from the one that you have used before. You will need the following headings: Topic Background, Hypothesis, Description of the Educational Product, Test Group Description, Observations, Data, Product Revision, Conclusion, and Appendix. In the appendix include copies any observation pages, surveys, quizzes, etc.