

Friday, October 12th, 2012

Unit: Scientific Inquiry Topic: Testing Lifesaver Labs	Date: 10/12/2012 Class: Biology
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Michigan Objectives:

B1.1B Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions.

B1.1C Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity—length, volume, weight, time interval, temperature—with the appropriate level of precision).

B1.1D Identify patterns in data and relate them to theoretical models.

B1.1E Describe a reason for a given conclusion using evidence from an investigation.

B1.1f Predict what would happen if the variables, methods, or timing of an investigation were changed.

B1.1g Use empirical evidence to explain and critique the reasoning used to draw a scientific conclusion or explanation.

B1.1h Design and conduct a systematic scientific investigation that tests a hypothesis. Draw conclusions from data presented in charts or tables.

Illinois Objectives:

11.11.04 Distinguish and define the following components of typical experiments: constants, variables, experimental group, control group (or control setup).

My Lesson Objectives:

- Conduct a designed controlled experiment by Isolating one variable to manipulate by holding all other variables constant.

Activities:	Materials/Equipment:
<ul style="list-style-type: none"> • Introduction (7 minutes) review directions from the exam. <ul style="list-style-type: none"> ○ Explain why the students didn't score as high as we expected them to. ○ Tell the class that one lab station was found with pencil writing on it after the exam; 	<ul style="list-style-type: none"> • Beakers • Graduated Cylinder • Electronic Balance • Hot Plates • Stirring Rods • Thermometers

<p>everyone that sits there for all 3 periods lost full points.</p> <ul style="list-style-type: none">○ Stealing: Explain to 8th period why it wasn't okay for the students to take/eat all of the lifesavers.● Lifesaver lab: Performance.<ul style="list-style-type: none">○ Students do a final run through of their procedures.○ Complete as many trials as possible in the 43 minutes.	
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Assessment: (Embedded, Formal)

Embedded: Are students using the laboratory equipment correctly? Who is? Who isn't?

Formal: Typed lab report with procedures, data collection, and analysis.

Reflections & Notes:

- I think I would have had the group also assign "roles" for their procedures. Who will mass the lifesavers? Who will stir? Who will be a time-keeper etc.? That way when they got to the lab everyone knew what they were supposed to do. I would also have them explain to me in the laboratory report who did what in the group and did they feel like they had an equal chance to partake in the experimental procedures? I