**Optional FOOD DESIGN LAB**

**Name the title of your Food lab: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Follow all information found on the handout titled “Lab Report Template”**

**You are responsible for the following:**

1. **Complete a lab report including data table, data analysis, conclusion and evaluation**
2. **Film your lab and in this discuss your results**
3. **Send Mr. Bodnar a link to your video and hand in your completed lab report by:**

**Due Date: November 28th/2013**

**You will be assessed on the following:**

## Criterion D: Scientific Inquiry

Students are expected to design and carry out scientific investigations independently. Students should be able to (i) state a problem that can be tested by an investigation; (ii) formulate a suitable hypothesis; (iii) identify and manipulate variables; (iv) plan an appropriate investigation including the method and materials; (v) evaluate the method.

|  |  |
| --- | --- |
| **Achievement level** | **Descriptor** |
| 0 | The student does not reach a standard described by any of the descriptors given below. |
| 1–2 | The student **attempts** **to define** the purpose of the investigation and makes references to variables but these are **incomplete** or not fully developed. The method suggested is **partially complete**. The **evaluation** of the method **is either absent or incomplete**. |
| 3–4 | The student **defines** the purpose of the investigation and provides an **explanation/prediction** but this is not fully developed. The student acknowledges **some of the variables** involved and describes how to manipulate them. The method suggested is **complete** and includes appropriate materials/equipment. The **evaluation** of the method **is partially developed**. |
| 5–6 | The student **defines** the purpose of the investigation, **formulates a testable hypothesis** and **explains** the hypothesis using scientific reasoning. The student identifies the relevant variables and **explains how to manipulate** them. The student **evaluates** the method commenting on its **reliability** and/or **validity**. The student suggests improvements to the method and makes suggestions for further inquiry when relevant. |

**Food that you may be able to use for the rates of reaction: (CIRCLE YOUR CHOICE)**

* Eggs
* Cheese
* Butter
* Dough
* Fruit
* Muffin / cake mix (please get permission first)
* French toast
* Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Look here for ideas: <http://www.juliantrubin.com/foodprojects.html>

Notes:

*Lab Report Cheat Sheet*

**Now your job is to design a lab of your own.**

**You are to design a lab which will address one of the following rates of reaction factors:**

What 4 factors do you think can speed up a reaction (what makes it easier for atoms to collide)?

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Remember we are looking for* ***Reliability*** *and* ***Validity*** *when you accomplish this lab report.*

**Cover Page:** Title of lab, Date of submission, Name of Teacher, Your name, Number of pages

**Title: (what factor are you researching?)** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Background Theory ( optional )**:

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**Aim**: What are you trying to find and how are you going to find it?

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**Hypothesis**: Write down what you think will happen in your experiment and why.

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**Variables**:

**Controlled Variable:** all variables that you will keep the same throughout

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**Independent Variable**: what will change in the experiments and how it will be measured.

**-**

**Dependent Variable**: what you will MEASURE and how it will be measured.

**Materials**

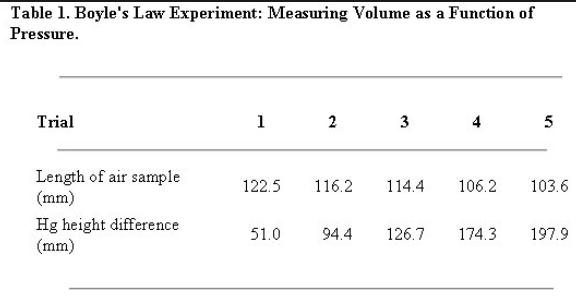
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**Method**:

**Diagram**: A clearly labeled diagram showing all of the apparatus you will use “in action”.

**Results / Data Collection (very important!)**

Data table examples:



**Data Processing**

* Show your calculations and / or statistical analysis.
* Table the calculated values including *values*, *units* and *uncertaintities*.
* A graph may be a good way to interpret your results.
* Label each graph or table appropriately (Title, values, Fig. 3; Fig A, etc.)

**Conclusion: *Summarize what you found and how you know it using your graph and table of results.***

**Evaluation**

**A/**

**B/**