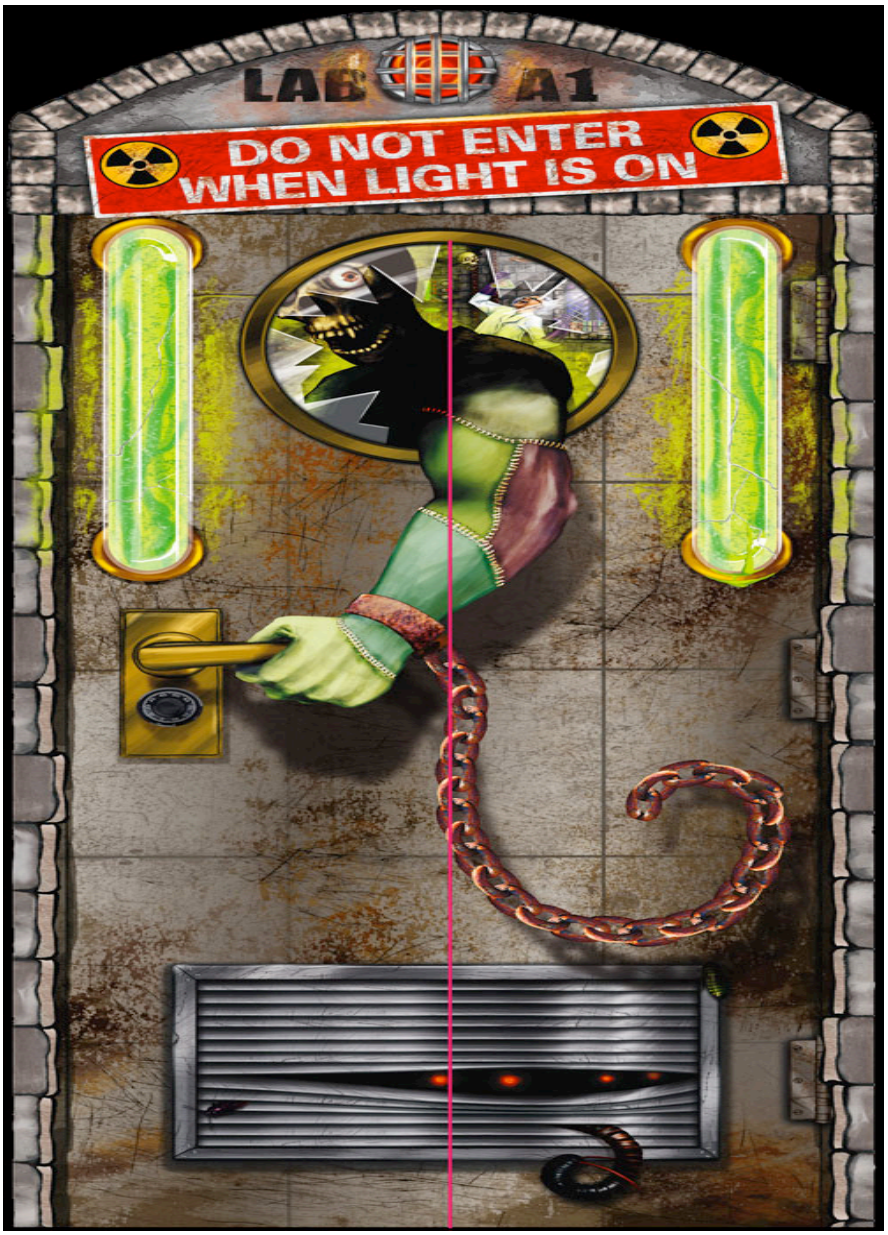
San Marcos Middle School
8th Grade Science Lab Notebook
Mrs. Brice
2009-2010



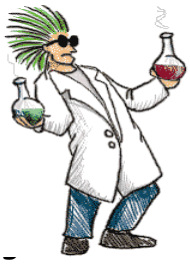
This lab book belongs to

_____

period _____

Interactive Notebook Procedures

Please do not add anything in this notebook without a directive from the teacher! Thanks



1. Number your pages immediately.
    a. Odd pages will be used for student output/processing
    b. Even pages will be used for class activities and notes

2. All answers need to be in complete sentences following all writin_ Incomplete sentences will be INVISIBLE to the teacher and score a zero.

3. Everyday and copied text/words need to be spelled correctly. Misspellings will result in answers being marked incorrect / wrong.

4. Writing must be with proper mechanics: proper spacing between letter of words and also proper spacing between words. *Oth erwise itm ay lo ok likethis*!

5. Bring interactive notebook to every day.

6. Keep your notebook organized and do not insert other sheets.

7. Treat your notebooks nicely and with respect, keeping it in good condition (no doodling).

8. Coloring should be neatly done.

9. This notebook is a tool for studying

10. If you lose your notebook or your notebook becomes damaged, you must replace it and bring it up to date with <u>ALL</u> the work that we have done.

11. For each semester, the organization and condition of your notebook will count as part of your grade.

Why we keep interactive notebooks in science

To keep an interactive notebook you will need:

- ➔ A 1 1/2" 3 ring notebook
- ➔ Flashdrive (at least 1G)
- ➔ Notebook paper (College ruled)
- ➔ Colored pencils, and highlighters
- ➔ Tape
- ➔ A small pair of scissors
- ➔ A pen and pencil with an eraser

You will be using your interactive notebook in class everyday to help you learn new science concepts, and to help you make connections to those concepts. Your interactive notebook will also help you organize your thoughts in a fun and creative way.

LEFT SIDE – Output *Even numbered pages	**RIGHT SIDE – Input** *Odd numbered pages
The left side of the notebook is used to show your understanding of the new concepts that you are learning in class. We call this the metacognition, or higher level thinking side of your notebook. You will be working with the information from the right, input side, and presenting it in your own way, with your own style. We use the left side for…	The right side of the notebook is for your facilitated learning. This side is mostly used for the work that you do in class, with your teacher and with other classmates. We have a lot of conversations and questions that we try to answer. You will be recording that work on this, the right side of your notebook. We use the right side for…
⌘ Your questions	⌘ Key questions
⌘ Brainstorming diagrams	⌘ Hypothesis
⌘ Making connections	⌘ Procedures
⌘ Graphing	⌘ Labs / Observations
⌘ Summary / Conclusions	⌘ Data
⌘ Applying what you know to the real world / Big Idea	⌘ Key words / Notes / Class Consensus Ideas

Interactive Notebook Rubric

5	**"Totally Awesome" (Almost Gross)** • The writing goes beyond the basic requirements, and shows in-depth understanding of concepts. • The work shows in depth reflection throughout the learning process. • Your notebook has all the components expected, including dates and labels on each page. • All pages are numbered properly with odd #'s on the right, and even #'s on the left. • Right and Left side work is correctly organized with all criteria. • The use of color and labeled diagrams enhance understanding. • The notebook is so tidy; it's almost "gross"!
4	**"Awesome"** • The writing follows the basic requirements, shows understanding of concepts, but does not go beyond. • The work shows in depth reflection. • Your notebook has all the components expected, including dates and labels on each page. • All pages are numbered properly with odd #'s on the right, and even #'s on the left. • Right and Left side work is correctly organized with all criteria. • The notebook has color and the student uses labeled diagrams. • A "9" looks much like a "10", but lacks the "Totally" in "Awesome".
3	**"Pretty Darn Good"** • The written work shows a basic understanding of concepts. • An honest reflection, but limited. • Your notebook has about 90% of the components expected, with dates & labels. • All pages are numbered properly with odd #'s on the right, and even #'s on the left. • Right and Left side work is correctly organized. • The notebook has some color and diagrams, with a few labels. • Some requirements are met, but your notebook lacks criteria in all areas.
2	**"Kick it up a Notch"** • The written work shows a limited understanding of concepts. • Limited reflection overall. • Your notebook has about 80% of the components expected, with dates and labels. • Most pages are numbered • Right and Left side work is fairly organized, "Just so-so". • The notebook has very little color and hardly any diagrams. • Notebook components are rarely met.
1	**"Better get Movin'"** • The written work shows misconceptions, and a lack of understanding. • "Reflection, What reflection?" • The pages in your notebook are unfinished. • You tried, but the dates and labels did not make it to the page. • There are inconsistencies in your right and left side entries. • The notebook is unorganized, and "The dog ate your pages".
0	**"What were you thinking?"** • Hey, you turned in a notebook, but the pages are blank, or they include the class template only. "Maybe you wrote with invisible ink?"

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Student Headache Solver Page

Oh no! I was absent! What should I do?
If possible contact someone to find out what you missed and if there is anything you can do before you return. *Check the class website for assignments or email Mrs. Brice*. You should at least get the assignments written down in your planner. Continue to work on any assignments that you have at home that are due.

1. **Study Buddy # 1**
   Name/Phone/email_____
2. **Study Buddy # 2**
   Name/Phone/email_____
3. **Study Buddy # 3**
   Name/Phone/email_____

****Please remember to call during hours that are appropriate (7am – 8pm would be a good range)**

Upon your returning to school, follow these steps in order:

1. **Check with a buddy and write what you missed in your planner.**
2. **See Mrs. Brice / check blue box for any instructions and/or sheets that you need.**
3. **Speak with Mrs. Brice if you have any special circumstances and need extra time (beyond 1 week) to complete and turn in the assignment(s).**
4. **Hand in or complete make-up work by the due date.**

It is your responsibility to find out what you missed and to complete the work without being asked by the teacher.

Homework Late Pass 2009 – 2010

Mrs. Brice

How it works:
Use this pass to hand in two pieces of work, one day late with no penalty. This pass will not work with late work that is more than 1 day late. Your teacher reserves the right to make any assignment a "no passes accepted" assignment, for example an assignment that requires a presentation.

When do I use it?
You do no not need to use this pass if you are absent with an excused absence through the attendance office, such as an illness. In that case, work is due as noted in the class syllabus, no more than a week from your return date.

Assignment Name_____ Date Due_____ Teacher Initials_____

Assignment Name_____ Date Due_____ Teacher Initials_____

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Score Sheet

#	Assignment	Pg #	Score	Teacher Signature	#	Assignment	Pg #	Score	Teacher Signature
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
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25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Score Sheet

#	Assignment	Pg #	Score	Teacher Signature	#	Assignment	Pg #	Score	Teacher Signature
61					91				
62					92				
63					93				
64					94				
65					95				
66					96				
67					97				
68					98				
69					99				
70					100				
71					101				
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85					115				
86					116				
87					117				
88					118				
89					119				
90					120				

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Table of Contents	
Processing Pg.	Information Pg
Pg	Pg.
Pg	Pg.
Pg	Pg
Pg	Pg
Pg	Pg
Pg	Pg
Pg	Pg
Pg	Pg
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(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5** 10

A step by step to writing a self-reflection For your interactive notebook

You will be expected to write a reflective essay at the end of each unit that shows your in depth understanding about the work you are doing. Be honest and open in sharing your thoughts and opinions.

Step 1: Count the number of the assignments we have completed for this unit, and record it at the top of your reflection.

Step 2: Choose four pages from this unit that best supported the big idea in your unit thesis. Two from the left side and two from the right side, record them on your reflection below the assignment count.

Step 3: You will now be writing three paragraphs.

Paragraph 1 – Write specific reasons for why you chose the four assignments that you are writing about.

Paragraph 2 – Explain why these pages best support your unit thesis. Give specific examples of why.

Paragraph 3 – What do these assignments reflect about your skills as a student? For example; they show that I am organized, I am good at analyzing, I was very thorough, creative, my information was very accurate, I made connections from one assignment to another, and so on. Make sure that you cite specific examples from the work you chose.

Step 4: This will also be **paragraph 4**. In this paragraph you will rate your own notebook. Use the rubric to rate your work as a 10,9,8,7,6,or 5. How do you think your notebook measures up and why? Use specifics from the rubric and relate it directly to the work that you chose. (Use examples)

Step 5: This will also be **paragraph 5**, and the last paragraph of your reflection. Hurray! Answer the following questions:

- ♥ What information did you learn that was new to you? Give specific examples.
- ♥ How did your notebook help you in this unit? Again, be specific.
- ♥ How could you improve your notebook? Please explain.

Please type your final draft and tape it as a flip page in your interactive notebook as specified by your teacher.

Syllabus Processing Questions

Directions: In **complete sentences** answer the following questions.

1. When students are respectful to each other and the teacher, as well as the teacher being respectful to students, how does this affect the learning environment in the class?

_____

_____

_____

2. Describe 3 things you should be doing to ensure you will be able to follow directions correctly the first time.

_____

_____

_____

3. Why is it important to come to class prepared everyday with your own materials? _____

_____

4. Name 3 behaviors that you should **NOT** be doing that would distract other students from learning.

_____

_____

5. What are the 4 science materials that you must have everyday in class?

_____

_____

6. What is the order of the 4 consequences that will occur if you break a rule? _____

_____

_____

7. What will happen to any object(s) that are distractive for learning such as I Pods, pictures, cell phones, etc…?

_____

_____

8. What steps should you take when you are absent from class? _____

_____

_____

9. How much credit does non-absent late work receive? _____

_____

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5** 12

10. What percentage of your grade comes from each of the following categories: classwork, homework and tests/quizzes? _____

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

San Marcos Middle School
Class Rules and Grade Breakdown
8th Grade Physical Science Class Syllabus

In order to guarantee your child and the students in my classroom the excellent educational environment they deserve, I have a specific Discipline Plan that will be in effect at all times. Success for every student is what I strive for at San Marcos Middle School. Please read together the information below to help your child reach the expected level of success. Parents, please help your child get the needed supplies and provide a quiet time and place at home for homework.

CLASSROOM EXPECTATIONS & RULES

- Be respectful of others. No talking back, no name calling, no put downs, and no teasing.
- Follow directions the first time.
- Come to class prepared everyday (science kit & pen/pencil)
- Do not touch anyone else's property at anytime and keep your hands and feet to yourself.
- Do not distract other students from learning.

CONSEQUENCES FOR FAILURE TO FOLLOW THE CLASSROOM EXPECTATIONS

- Warning
- Behavior Log entry / Parent Phone call
- Removal from class / detention
- Referral
- Confiscation of anything that is distractive for learning of anyone in class (Item will only be returned to parents)

POSITIVE REINFORCEMENT

Included in my Discipline Plan are ways to reinforce students who behave appropriately. In addition to using frequent praise, I will reward students with earned free time and special class activities.

MATERIALS NEEDED EVERY DAY IN CLASS

- Science Notebook
- Flash drive/ memory stick
- Color Pencils
- Ruler
- 2 pens (1 blue ink and 1 red ink) and 2 pencils
- Lined paper (needs to be supplied throughout the year)
- Student Planner (Supplied by school)

ASSIGNMENTS

- When absent, it is the students responsibility to find out what was missed and turn in the work within a week. There is a daily agenda posted in class and absent work will receive full credit when turned in within a reasonable period of time. Students are responsible for making arrangements to get work when planned absences are to occur.
- No late work is accepted unless with the use of the one "Homework Late Pass". You are given two of these per year.

GRADING (A = 90%, B = 77%, C = 62%, D = 47%, LESS THAN 47 % = F)

- 40 % from classwork
- 35 % from homework
- 25 % from tests & quizzes

I look forward to working with you and your child throughout the year. In order for this plan to succeed and have the greatest effect, I need your support. I will be keeping you informed of you child's progress by phone, e-mail or writing. I truly appreciate the fact that your child, you, and I are a team working towards a common goal and I appreciate your constant support. Please contact me with any concerns or information about your child that would be helpful for me to know. I am looking forward to a great year!
Thank you for your support and cooperation.

Sincerely,
Mrs. Brice
Debra.brice@smusd.org
760-290-2500 ext 3504

Class Rules and Procedures Processing Questions

Directions: In **complete sentences** answer the following questions.

1. When is the only time that it is okay to enter the classroom? _____
_____
_____

2. When are the two appropriate times to sharpen your pencil? _____
_____
_____

3. When is the only time that you should ask to use the bathroom? _____
_____

4. What three things must you do before the bell rings to not be tardy? _____
_____
_____

5. What should you do after you finish writing in your student planner? _____
_____

6. What are the five consecutive consequences of being tardy? _____
_____
_____

7. If you were not absent and you turn in an assignment late, how much credit could you possibly earn? _____
_____
_____

8. What are the five instructions regarding fire drills? _____
_____
_____

9. What should you be doing when the teacher is talking? _____
_____
_____

10. What or who dismisses the class? What does not dismiss the class? _____
_____
_____

11. When would be the appropriate time to pack up your belongings? _____
_____
_____

12. After you are told to pack up, what should you do until the bell rings? _____
_____

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

CLASSROOM RULES

1. Be respectful of others. (No talking back, no name calling, no put downs, and no teasing)
2. Follow directions the first time.
3. Come to class prepared everyday. (science kit supplies, pens, pencil & paper)
4. Do not touch anyone else's property at anytime and keep your hands and feet to yourself.
5. Do not distract other students from learning.

CONSEQUENCES FOR BREAKING THE RULES

1. Warning
2. Behavior log entry/ Parent Phone Call
3. Removal from class/campus clean-up/detention
4. Referral

CLASS PROCEDURES

1. Only enter the classroom if the teacher is there and you have been told to enter.
2. Follow the daily directions immediately upon entering the class.
3. Sharpen pencils before the bell rings or after instructions have been given for an activity (**never when the teacher is talking**).
4. Before the bell rings, you are in your seat, silent, filling your student planner or you are TARDY when the bell rings.!
5. Once you complete filling your planner, continue following directions even if the bell has not rung.
6. Towards the end of class, only pack up when you are told so by the teacher (I will provide one minute for pack up).
7. Once you have been told to pack up, you must stay in your seat until you are dismissed by the teacher.

Moodle and Class Website

Syllabus is posted on class website and so is calendar. Be sure to check them often…they change and get updated. ALL field trips and class visits are posted on calendar!

Class website: http://footsteps.ucsd.edu
Moodle Website : https://iquest.csusm.edu/course/view.php?id=7

We will be using Moodle this year as part of our curriculum. We also have a class website. You be doing quizzes, activities, wikis and discussions on our Moodle page. These are graded just like regular classwork and homework assignments. Your assignments and worksheets will be posted on the class website and there will be resources on them that you can use for projects. Many assignments will be done on the website and turned in online.

- When you open the Moodle website your **username** is your first initial of your first name and your last name. Your password is your **ID number**

The class website has several different sections. Go to the left hand box and click on 8th grade physical science . I will post assignments and information there. Our website is hosted by UCSD and is part of our project with Scripps and the Office of Naval Research.

We will be using several text books this year. The one you are issued by the school is Prentiss Hall : Focus on Physical Science, it is also available online and in CD so you may choose to check out a CD instead of a book. We will have class sets in the class room or use the online version if we need it. You do not have to bring your book to class every day. We will also be using Interaction in Physical Science, we have a class set of these and they are also available online.
The student website is:

http://cipskids.sdsu.edu

The username is: cipskids
Password is: awesome

You will be issued a workbook that will be kept at school. From time to time you will be asked to tear out pages and put them in your science notebook. **ALL WORK** will be done and graded in your science notebook!

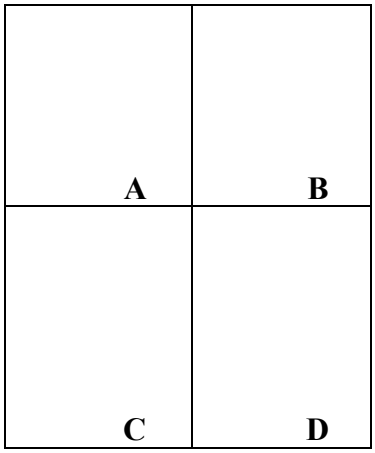
Notebook pages and worksheets will be posted on the website, if you LOSE a page you must go to the website and print yourself a replacement copy. DO NOT ask Mrs. Brice to give you another one, it is YOUR responsibility to have all materials for class.
We will learn to use Moodle and access the class website in class so that you will be familiar with how to use all the features.

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

CLASS SET

Directions: Copy the diagram below in your science notebook (pg.12) at the top of the page.

Front of Classroom



Back of Classroom

A. SM = Supply Master
B. PS = Procedure Specialist
C. TM = Team Manager
D. RE = Recycling Engineer

Science Cooperative Learning Groups Processing Questions

Directions: Copy the following prompts and answer them in your science notebook in the processing page.

1. Write 3 examples of statements that a person performing each duty for a job might say to their group.

**For example, the Recycling Engineer has two jobs, write down 3 statements the Recycling Engineer would say for EACH job the Recycling Engineer has.

Prequntas de informaccion de la clase.

Direcciones: Copien las instrucciones siguientes y contestenlas en su cuaderno de ciencia en la página de procesamiento.

3. Escriba 3 ejemplos de declaraciones que una persona que realiza cada deber en su grupo quizás diga a su grupo para hacer su trabajo.

** Por ejemplo, el **Recycling Engineer** tiene dos trabajos, anoten 3 declaraciones que el **Recycling Engineer** diría por CADA trabajo que el **Recycling Engineer** tiene.

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

SCIENCE COOPERATIVE LEARNING GROUPS

RULES

1. Talk at a "whisper" level in your group.
2. Stay on task.
3. Ask a question of your group first, before you ask your teacher.
4. Offer feedback on ideas; avoid criticizing people.

GROUP JOBS:

1. **Team Manager**: Encourages group members to stay on task and keeps track of time. Reminds and keeps the group noise level to a whisper so that the group is not disturbing any other groups.
2. **Supply Master**: Gathers materials.
3. **Procedure Specialist:** Reads directions or other materials so the group can understand them
4. **Recycling Engineer:** Puts away materials, throws away trash, stacks textbooks, and cleans workspace

Beginning Cooperative Skills

USING QUIET VOICES

1. **What does using quiet voices mean?** Using "six-inch voices" that cannot be heard beyond the table.
2. **Why is it important to use quiet voices?** To be able to hear the conversation in your group.
3. **How will the working relationships in your group improve if you use this skill?** Group members will be able to hear clearly and not become frustrated by a loud classroom.

STAYING ON TASK

1. **What does staying on task mean?** Continuing with assigned activity in spite of distractions.
2. **Why is it important to stay on task?** Activity will be accomplished on time with better accuracy and more opportunity for creativity.
3. **How will the working relationships in your group improve if you use this skill?** The group will be proud of their increased effectiveness in preparing assignments well.

ENCOURAGING PARTICIPATION

1. **What does encouraging participation mean?** Motivating all group members to contribute.
2. **Why is it important to encourage participation?** If one or two people do not participate or they contribute very little, the group product may not be finished in time, or it may be lacking in originality and imagination.
3. **How will the working relationships in your group improve if you use this skill?** Group members will feel that their contributions are important.

FINISHING ON TIME

1. **What does finishing on time mean?** Completing the activity by a designated time.
2. **Why is it important to finish on time?** Learning will be incomplete and unfinished work will receive lower grades.
3. **How will the working relationships in your group improve if you use this skill?** Group members will gain a sense of accomplishment and team spirit if they complete assignments and do them well.

DEALING WITH DISTRACTIONS

1. **What does dealing with distractions mean?** Avoiding problems that result from diversions or inattention to assigned work.
2. **Why is it important to deal with distractions?** Distractions can keep a group from completing the assigned learning task.
3. **How will the working relationships in your group improve if you use this skill?** If positive steps are taken by groups to keep distractions at bay, they will develop a sense of accomplishment and maturity about mastering this skill.

HONORING INDIVIDUAL DIFFERENCES

1. **What does honoring individual differences mean?** Being respectful of all students' unique cultures, life experiences, and ethnicities.
2. **Why is it important to honor individual differences?** Hostility can be avoided. Group harmony can be promoted.
3. **How will the working relationships in your group improve if you use this skill?** Tensions will be reduced. A sense of belonging and camaraderie may develop. Individuals may develop qualities of kindness, sensitivity, and tolerance.

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

The Scientific Method Processing Page (Draw each step of the Scientific Method)

Directions: Draw a picture to represent each of the steps of the scientific method.

Questions (these are written for homework)	The Scientific Method Notes& Sample of Cornell Note Taking Set Up
What are the 5 steps of the scientific method?	The Five Steps of the scientific Method are: 1. **Posing a question** 2. **Developing a hypothesis** 3. **Designing an experiment (write procedures)** 4. **Interpreting Data** 5. **Drawing a conclusion**
What does posing the question mean?	**Posing a question** is coming up with a scientific question that can be answered by gathering scientific evidence (with measurements / observations)
What is an example of a good scientific question?	An example of a scientific question is "which freezes faster—fresh water or salt water?" or "who runs fasters—cheetahs or lions?"
What does developing a hypothesis mean?	**Developing a hypothesis** means coming up with a possible explanation for a set of observations or an answer to a scientific question. It is based on previous knowledge and observations.
What is an example of a hypothesis?	An example of a hypothesis is "If I add salt to fresh water, then the salt water will take longer to freeze" or "If I race a cheetah and a lion, then the cheetah will win 100% of the time"
Describe what designing an experiment requires.	**Designing an experiment** means coming up with a plan to test your hypothesis. It should a detailed, step-by-step list of procedures and should describe the observations or measurements needed to be recorded. The dependent and independent variables need to be identified defined.
What is an example of a set of procedures?	An example of a procedure list is: 1. Label three, 500 mL with numbers 1, 2 and 3 2. Fill the three 500 mL containers with 300 mL of fresh water 3. Add 10 g of salt to containers # 1 and # 2 4. Place the 3 containers in the freezer 5. Check the containers every 15 minutes and record your observations
Explain how you interpret the data from an experiment?	**Interpreting data** means analyzing the information collected during the experiment looking for patterns or trends. This is best done by organizing your data into tables or graphs.
How do you draw a conclusion from an experiment?	**Drawing conclusions** means coming up with a statement that sums up what you have learned from the experiment. This means stating whether or not your data proved or disproved your hypothesis.
	Summary of Notes: (write a brief summary of the notes above—done at the end of every section).

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Processing Science Lab Write Up. Illustrate each part of a lab report

Define "*Definition*"_____

Lab Title	**Dependent Variable**
Standard / Goal	**Hypothesis**
Background	**Materials**
Question	**Procedures**
Variable	**Data / Observations**
Control	**Analysis of Data**

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Independent Variable	**Conclusion(s)**

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Required Science Lab Write Up Outline

Lab Title (Place title in the top center)

Standard/Goal: Given by the teacher

Background: What have you learned or what do you know about the standard/goal

Question: What are you investigating? What is the question you are trying to solve?

Variable: Any factor that can change in the experiment

Control: All factors that are the same in both the experimental group and the control group

Independent Variable: The factor that you wish to test and that is manipulated or changed so that it can be tested. The independent variable is expressed in your hypothesis after the word ***if*** in the hypothesis

Dependent Variable: The factor that you measure to gather results. It is expressed in your hypothesis after the word ***then*** in the hypothesis

Hypothesis: Based on experience, what do you think will happen? (**If**…..**then**…**because**…)

Materials: List the materials you need for the lab.

Procedures: Number your procedures and write the steps that you are going to follow. You may also draw pictures to show how your experiment is set up.

Data/Observations: Record the results from the lab in a data table, including any and all observations. Be as descriptive as possible.

Analysis of Data:

- Make Calculations
- Change/Organize your data into a graph (Line graph, bar graph)
    - Write in words what the graphed data summarizes

Conclusions: Include the following in complete sentences.

1. Explain how your hypothesis was supported (or not) by your data from the experiment.
2. Explain what the experiment demonstrates, investigates, and proves using your organized data.
3. Identify any possible sources of error in your experiment and describe how you would minimize those errors in the future (if you repeated the experiment).
4. Discuss ideas/topics, you now wonder about based on this experiment, for further investigations and what you might do differently in the experiment next time.
5. State what you learned about the standard/goal for the lab.

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Predicting and Hypothesizing Information Processing Sheet

Question	Does fertilizer make a plant grow taller?
Independent Variable	Amount of fertilizer measured in grams
Dependent Variable	Growth of the plant measured by its height in inches
Hypothesis	**If** a plant gets fertilizer, **then** that plant will grow taller than a plant that does not get fertilizer **because** fertilizer provides more nutrients for the plant to grow.

Question	Does a plant that gets more sunlight grow faster?
Independent Variable	Amount of exposure to sunlight measured in hours
Dependent Variable	Growth of the plant measured by its height in inches
Hypothesis	

Question	What types of shoes are best for running?
Independent Variable	Different types of shoes, sandals, boots, tennis shoes.
Dependent Variable	Time on a 1 mile run for 1 person.
Hypothesis	

Question	What type of marshmallow makes the better smores, large or small ones?
Independent Variable	Different types of marshmallows
Dependent Variable	Taste test results form a group of 10 girls and 10 boys
Hypothesis	

Question	Who are better hairstylists, men or women?
Independent Variable	10 men and 10 women hairstylists
Dependent Variable	“Look” results of 10 boys and 10 girls
Hypothesis	

Question	Who are better students, boys or girls?
Independent Variable	100 boys and 100 girls.
Dependent Variable	Trimester report cards.
Hypothesis	

Question	Does studying help students get better grades?
Independent Variable	Time spent studying after school.
Dependent Variable	Trimester report cards.
Hypothesis	

Question	Is studying in a quiet place better than studying in a noisy place?
Independent Variable	Quiet study place or a noisy study place.
Dependent Variable	Trimester report cards.
Hypothesis	

Question	Who make better teachers, men or women?
Independent Variable	100 men and 100 women teachers
Dependent Variable	Trimester report cards of their students
Hypothesis	

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Variables Notes Processing Sheet

<table>
<tr><td colspan="2">Write a scientific question that could be tested by an experiment</td></tr>
<tr><td>Variables that could affect the out comes of this experiment include:</td><td></td></tr>
<tr><td>Drawing of an Experiment Showing Variables</td><td>Description of the experiment and the variables</td></tr>
<tr><td>Independent Variable
The independent variable is…</td><td>Dependent Variable
The dependent variable is…</td></tr>
<tr><td>Drawing of Experiment under condition #1</td><td>Result of experiment under condition #1</td></tr>
<tr><td>Drawing of Experiment under condition #2</td><td>Result of experiment under condition #2</td></tr>
<tr><td>Control Group
Drawing

Explanation:</td><td>Experimental Group
Drawing

Explanation:</td></tr>
</table>

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Variable(s) Notes Sheet

Definitions:

Variable: Any factor that can change in the experiment

Independent Variable: A factor that is manipulated or changed (on purpose)

Dependent Variable: Factor that is measured / observed / or recorded

Controlling Variables: Keeping all the conditions (variables) the same except for the independent variable

Control Group: Group of experiments whose conditions are **NOT** being changed (the "NORMAL" group)

Experimental Group: Group of experiments whose conditions **ARE** changed

Example

Question: Will house plants grow fasters if you make the room warmer?

Variables that could affect the results: Temperature, plants, soils, containers, water, light, plant food

Independent variable: Temperature the plants are kept in

Dependent Variable: Height of plant (growth) (You could also measure weight as an indicator of growth)

Controlling Variables: Same kind of plant, same type and amount of soil, identical containers, same amount of water, same amount of light, same amount of food

**In this example, the control group would be growth of plants in their "normal" environment. Keep this in mind because "normal" would mean different temperatures between desert and tundra plants.

Control Group

Plants at 20°C

Experimental Group(s)

Plants at 0°C 10°C 30°C 40°C

**20°C is an example for home/room temperature.

Identify the Controls and Variables

Smithers thinks that a special juice will increase the productivity of workers. He creates two groups of 50 workers each and assigns each group the same task (in this case, they're supposed to staple a set of papers). Group A is given the special juice to drink while they work. Group B is not given the special juice. After an hour, Smithers counts how many stacks of papers each group has made. Group A made 1,587 stacks, Group B made 2,113 stacks.

Identify the:

1. Control Group

2. Independent Variable

3. Dependent Variable

4. What should Smithers' conclusion be?

5. How could this experiment be improved?

Homer notices that his shower is covered in a strange green slime. His friend Barney tells him that coconut juice will get rid of the green slime. Homer decides to check this out by spraying half of the shower with coconut juice. He sprays the other half of the shower with water. After 3 days of "treatment" there is no change in the appearance of the green slime on either side of the shower.

6. What was the initial observation?

Identify the-

7. Control Group

8. Independent Variable

9. Dependent Variable

10. What should Homer's conclusion be?

Bart believes that mice exposed to microwaves will become extra strong (maybe he's been reading too much Radioactive Man). He decides to perform this experiment by placing 10 mice in a microwave for 10 seconds. He compared these 10 mice to another 10 mice that had not been exposed. His test consisted of a heavy block of wood that blocked the mouse food. he found that 8 out of 10 of the microwaved mice were able to push the block away. 7 out of 10 of the non-microwaved mice were able to do the same.

Identify the-

11. Control Group

12. Independent Variable

13. Dependent Variable

14. What should Bart's conclusion be?

15. How could Bart's experiment be improved?

Krusty was told that a certain itching powder was the newest best thing on the market, it even claims to cause 50% longer lasting itches. Interested in this product, he buys the itching powder and compares it to his usual product. One test subject (A) is sprinkled with the original itching powder, and another test subject (B) was sprinkled with the Experimental itching powder. Subject A reported having itches for 30 minutes. Subject B reported to have itches for 45 minutes.

Identify the-

16. Control Group

17. Independent Variable

18. Dependent Variable

19. Explain whether the data supports the advertisements claims about its product.

 Lisa is working on a science project. Her task is to answer the question: "Does Rogooti (which is a commercial hair product) affect the speed of hair growth". Her family is willing to volunteer for the experiment.	20. Describe how Lisa would perform this experiment. Identify the control group, and the independent and dependent variables in your description.

In your own words describe the differences between dependent and independent variables.

Why do experiments need control groups?

What would you think if you read a lab report and it had no mention of control groups? Would it be a valid experiment?

Is there ever a good reason when it would be appropriate to perform an experiment without a control group?

What would you think if you read two lab reports from two separate scientists who followed the same procedures and collected different data? Would you expect them to have the same data?

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Processing Writing Procedures

Directions: Answer the following questions in complete sentences.

1. Describe what procedures should look like, what is their format?

2. Describe how long each of the steps in your procedures should be?

3. Why is it important for procedures to be specific?

Directions:

Suppose you want to investigate whether temperature affects how fast mold grows on bread. Indentify the independent variable, the dependent variable, and any other variables to be controlled. Use this information to write a hypothesis. Then write detailed procedures that could be used for this experiment. When writing your procedures use the correct format, be concise (short and to the point), and specific.

Independent Variable:

Dependent Variable:

Variables to be controlled:

Hypothesis:

Procedures:

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Peanut Butter and Jelly Sandwich Student Demo

Directions: Write the procedures for making a PBJ sandwich. Seems easy enough…but we will see how well and clear you write your procedures ☺

What did you learn or realize when you did the peanut butter and jelly sandwich making activity?

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

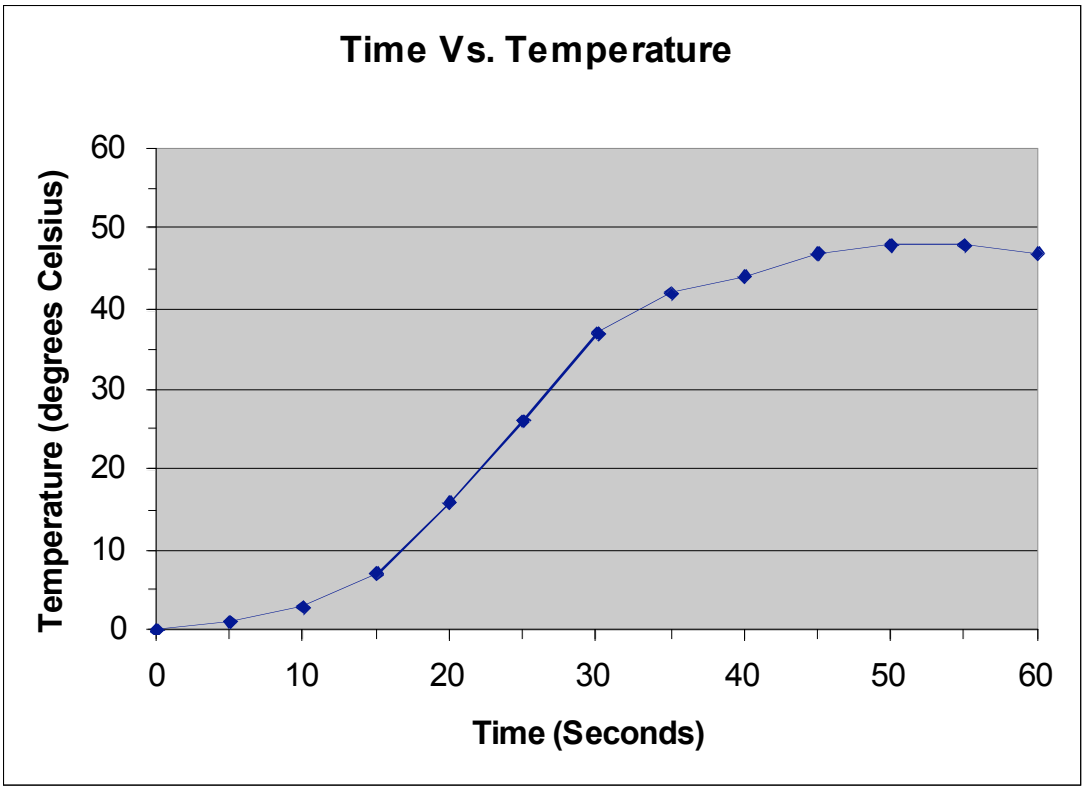
Making A+ Graphs takes one word!

S.U.L.T.A.N.

S = Scale
(numbering axes, spreading out data)
U = Units
What type of numbers are recorded
L = Labels
What the data is measuring
T = Title
Scientific and descriptive
A = Accuracy
Plot points correctly, graph should be true!
N = Neatness
Use a ruler!

Check out this graph for SULTAN

--*Using arrows, identify the title, label, scale, and units*



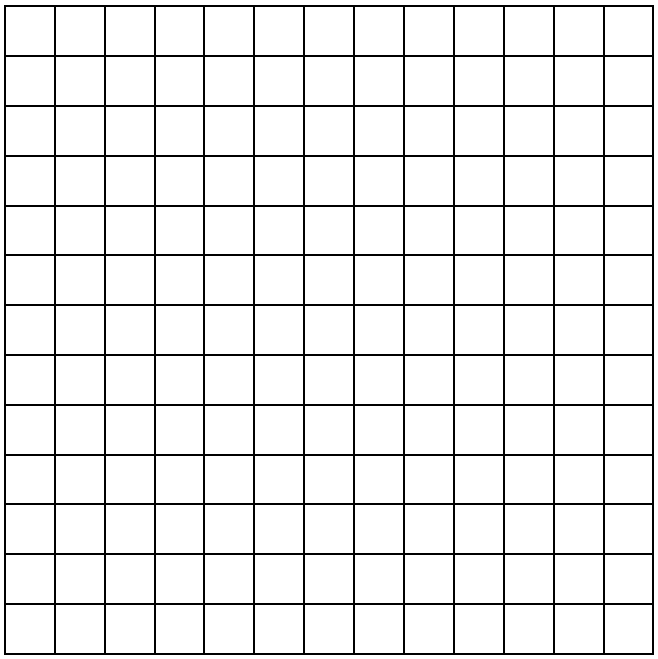
(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Graphs and S.U.L.T.A.N (Scale, Units, Labels, Title, Accuracy, Neat)

Using the data in the data charts below, make BAR graphs on the grids on the right.

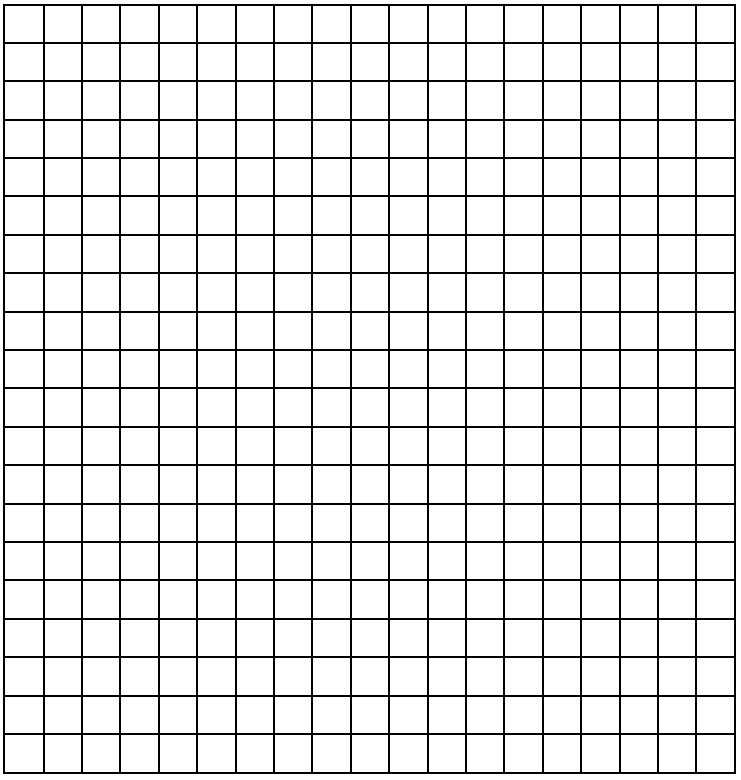
The data chart shows the number of tickets sold at various theaters for different shows on Broadway in New York City on one particular night.

Show	**Tickets Sold**
The Lion King	450
Rent	600
CATS	200
Les Miserables	350
Annie	100
Phantom of the Opera	550



A scientist used a decimeter to record the loudness of various sounds in a city. The results are shown in the data chart below.

Source	**Loudness** (decibels)
Rocket engine	200
Jet engine	160
Lower limit of pain	120
Rock band	115
Subway train	100
Vacuum cleaner	85
Busy street	75
Normal talking	65
Whisper	40
Leaves rustling	15

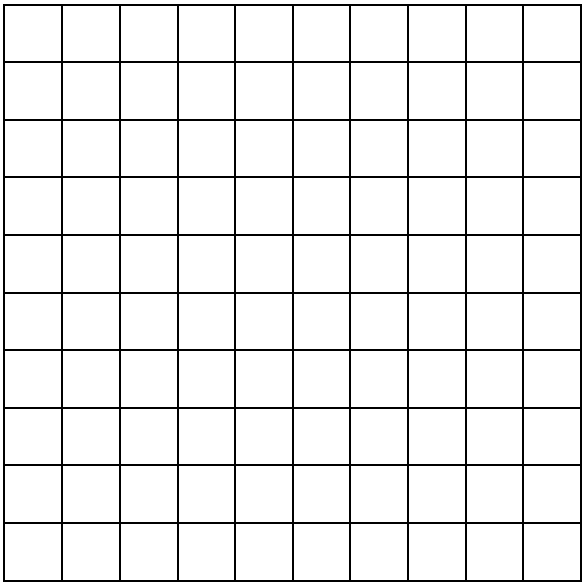


(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Using the data in the data charts below, make LINE graphs on the grids on the right.

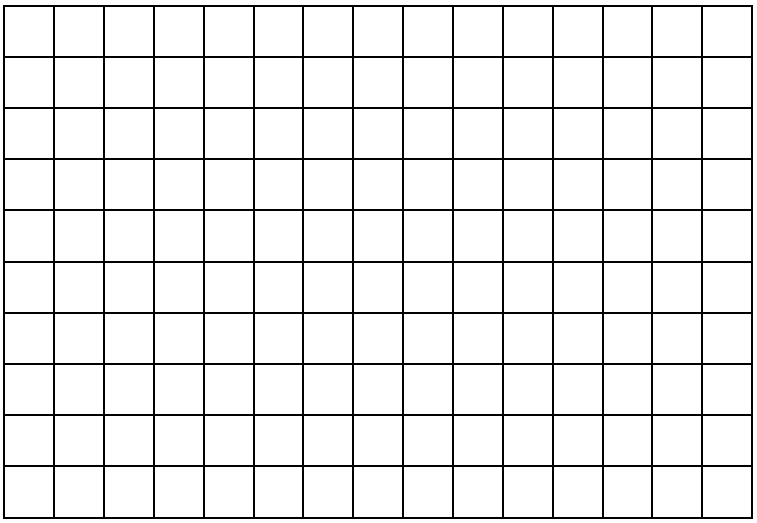
A scientist wanted to find the density of some material. The scientist found the mass and the volume of the material. Plot this data and make the line graph.

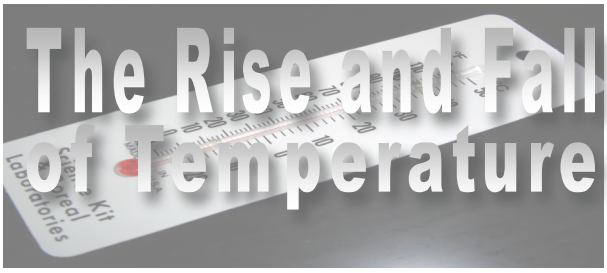
Volume (mL)	**Mass (g)**
20	5
40	10
60	15
80	20
100	25



A scientist began heating a liquid. Each minute the scientist recorded the temperature as shown in the data chart below. Plot the data.

Time (min)	**Temperature (^{o}C)**
0	0
1	0
2	0
3	10
4	20
5	30
6	40
7	50
8	60
9	70
10	80
11	90
12	100
13	100
14	100
15	100





Procedure:

1. Record the rise in the temperature of a thermometer when it is removed from an ice bath. Use the data chart on the right to record the measurements.
2. Repeat step 1, this time placing your fingers GENTLY over the bulb of the thermometer. Record this data under TRIAL 2 in the data table.
3. Plot both lines in the grad provided below as a line graph. Remember SULTAN

Data:

Time (secs)	Temperature Trial 1: Room Temp (°F)	Temperature Trial 2: Body Temp. (°F)
0		
5		
10		
15		
20		
25		
30		
35		
40		
45		
50		
55		
60		

Graph:

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**

Lab Title:

Standard / Goal

Purpose (why are you doing this experiment?)

Background (What do you know about….)

Hypothesis
I think if I do…..then…will happen We think that if we do….then….will happen

Materials

Equipment

Procedures….	Data / Observations

Analysis
1. Change data into graphs or tables (organize your data) 2. How does this relate to the standard / goal? (Supports or Contradicts?)

Conclusion
Explain how your hypothesis was supported (or not) by your data. What does the data tell you about the concept you are trying to learn?

(Incomplete, Spelling Errors, Sloppy, Un-readable, Not in complete sentences) **Pts: 0 – 1 – 2 – 3 – 4 – 5**