I have incorporated a paper and science fair project into the syllabus in order to count this an honors course.

Scientists know that lab reports are a very important part of every experiment. The purpose of an experiment is to answer a question by testing a hypothesis. During an experiment you may collect a lot of information, or data. But that data is not very useful unless it is organized. The purpose of a lab report is to organize and communicate what you did in your experiment. A good lab report explains exactly what you have done. It can be used to repeat the experiment or to test other hypotheses in new experiments.

**Lab Report Form**

(Name)__________________ (Date)______________

**Title:** _____(the name of the lab or experiment)

**Purpose/Problem:**

The purpose or problem states the reason(s) why you are doing the experiment. Write down exactly the problem that will be investigated or experimented. Purposes can be stated as a question.

**Hypothesis:**

What do you expect to find? The hypothesis can be stated as an "If..., then..." statement. The 'If' part of the statement is based on related facts that you know to be true. The 'then' part of the statement is an educated guess on the outcome of the experiment. The hypothesis does not have to guess the correct outcome, but the experiment must be set up to test the hypothesis.

**Materials/Supplies:**

This is a list of all equipment and chemicals used to do the experiment. Please include quantities.

**Procedure:**

The procedure tells exactly what you did. Make statements in the past tense. Be specific. The procedure you use affects the results. So, it is important to be accurate in explaining what you did. The procedure is written in paragraph form.

**Observations and Data:**

The observations tell exactly what happened when you did the lab. An observation is measurable information that comes to you through your senses. Results include experimental (raw) data in the form of well-labeled tables, graphs, drawings and other observations. Place your observations and data in this section without discussion or comment. This is where you include any calculations made during the experiment. Answer any questions here.

**Conclusion/Summary:**

Conclusions explain your observations and describe how your data relates to the problem. It is written in paragraph/essay form and should include why you did this experiment (restate the purpose/problem). You should explain in your own words what you found out or discovered. Your conclusion should state whether or not the data confirms or rejects your hypothesis. Discuss any errors as well as any patterns you see. Part of the conclusion may be a new hypothesis based on your findings and suggestions for testing the new hypothesis in a different experiment. You may also make any predictions you would expect based on what you discovered.
Lab Report Form

(Name)_____ (Date) _____

Title:

Purpose/Problem:

Introduction:

Hypothesis:

Materials/Supplies:

Procedure:

Observations and Data:

Conclusion/Summary:

This lab (experiment) investigated __________. In order to study the problem we __________. My results showed __________, thus proving my hypothesis was __________. I believe the results are (accurate/inaccurate) because ____________. In order to further investigate this problem, next time I would ____________.

- Do draw a picture of the experiment, if appropriate.
- Don’t say that the purpose was accomplished and then say nothing substantially more. You must include data from the lab results to demonstrate that the purpose was accomplished.
- Don’t give the procedure again.
- Don’t list the data again. It was already listed in the data (chart, table, etc.). You are to discuss and draw conclusions from the data.
- Don’t forget to break up your ideas with more than one paragraph, if necessary.

http://www.herkes.org/labreport.html
http://www.wilson.hlpusd.k12.ca.us/science/LAB.HTML
Aug. 15 – Read Student note pages – pp. i-iii – REALLY read them! Look at the Appendix A-C at the back of the book just so you’ll know what’s available. Make science notebook and lab notebook.

Aug. 16 – Read/study p. 1-4. Memorize bold terms, bold text, and centered text (p. 3 and 4). If you don’t remember what he said about memorizing the bold text, reread bottom of p. i. Always study/memorize the terms that day. Review them everyday. I would recommend writing them down in list form so it’ll be easy to study for the test.

Aug. 17 – Read/study p. 5-8. Make sure you study and work through (on paper) the examples. Also study the figures. Do OYO (On Your Own questions), p. 8; always correct (p. 30). Put answers in science notebook. Label the page, “OYO” with page number.

Aug. 18 – Read/study p. 8-12; OYO p. 12; correct. Study/work through the Example. If you don’t spend time studying the text and working through the examples (with paper and pencil!), you’ll be lost later.


Aug. 22 – Read/study p. 13-16
Aug. 23 – Read/study p. 17-20; OYO p. 20; correct. Bold text p. 17. Make sure you’ve read through all labs.

Aug. 24 – Lab at Neely’s, 2:00 p.m. Experiments 1 and 2. Need a stopwatch. Come prepared: Make sure you’ve read through the labs. Also please have your lab notebook ready for each lab. You may want to skip a page in between to have enough room for the lab and summary.

Aug. 25 - Read/study p. 20-22; OYO p. 23; start reviewing definitions and bold text for test.

Aug. 26 – Read/study p. 23-27; OYO p. 27; review all OYO for test.

Aug. 29 – Read/study p. 27-bottom of p. 29; OYO p. 29; bold text p. 29. Review all examples for test.


Aug. 31 – Module 1 test. Give test and lab notebook to mom to correct.

Sept. 1 –5 – Labor Day Holiday

Sept. 6 – Correct test; give back to mom. Read/study p. 37-39; OYO p. 39; correct.

Sept. 7 – Read/study p. 39-43; OYO p. 43; correct.

Sept. 8 – Read/study p. 43-47; OYO p. 47; correct.

Sept. 9 – Read/study p. 47-50; OYO p. 50; correct. Are you remembering to work through examples?

Sept. 12 – Read/study p. 50-53; memorize bold text p. 52. Review what you’ve studied so far.

Sept. 13 – Read/study p. 54-56; OYO p. 56; correct.

Sept. 14 – Lab at Neely’s, 2:00 p.m. Experiments 2.1-2.3. Go over any problems with OYO or calculations. Come prepared to do labs – make sure you’ve read through 2.3 before you come.


Sept. 16 – Read/study p. 60-62. Review all OYO and examples for module.


Sept. 20 – Module 2 Test. Give test and lab notebook to mom.

Sept. 21 – Correct test; give back to mom. Read/study p. 71-73. Bold text p. 72-73.

Sept. 22 – Read/study p. 74-78; OYO p. 78. Bold text p. 75 and 77. Again, make sure you understand examples.

Sept. 23 – Read/study p. 78-85; OYO p. 85; correct. Bold text p. 79. Start reviewing terms and bold text for test.

Sept. 26 – Read/study p. 85-90; OYO p. 86 and 90; correct both. I’m sure you worked through those examples! Review all OYO for test.

Sept. 27 – Read/study p. 90-95; OYO p. 95; correct. Read carefully the paragraph at the bottom of p. 95. Kendra, tell mom to photocopy map on p. 91 for lab tomorrow. Review all examples for test.

Sept. 28 – Lab at Neelys, 2 p.m. Experiments 3.1-3.2. Bring protractors and map on p. 91.

If you don’t understand something, come prepared to ask. It’d be good if you could email me ahead of time. Study for test!


Sept. 30 – Module 3 Test. Give test and lab notebook to mom.
Oct. 3 – Correct test; give back to mom. Read/study p. 105-108. OYO, p. 109; correct. Chapters 4 and 6 of this book are probably the hardest. Make sure you really study the text, figures, and examples. Memorize the bold text.

Oct. 4 – Read/study p. 109-115; OYO p. 115; correct. Bold text p. 112 – it’s a lot to remember. You may want to write it down several times. Write it down on 3 x 5 card and read a couple of times per day. Make sure you understand the example, reading carefully the paragraph at the bottom of p. 114. Read through labs before coming tomorrow.

Oct. 5 – Lab at Neely’s, 2 p.m. Experiments 4.1-4.2. Let’s work through Examples 4.5 and 4.6 together. Come prepared to ask any questions.

Oct. 6 - Read/study p. 115-120; OYO p. 120; correct. Bold text p. 118.

Oct. 7 – School holiday

Oct. 10 - Read/study p.120-126. OYO p. 127; correct.

Oct. 11 – Study terms, bold text and ½ the OYO’s for the chapter.

Oct. 12 – Work through examples and the other ½ of OYO’s for the chapter. Study the chapter. If you understand everything start on tomorrow’s work.


Oct. 14 – Module 4 Test. Give test and lab notebook to mom.


Oct. 20 – Read/study p. 152-154; OYO p. 154; correct.


Oct. 25 – Read/study p. 166-167; OYO p. 167; correct. Study all OYO for chapter.

Oct. 26 – Lab at Neely’s, 2 p.m. 5.1-5.2 Need board 1 meter long and wider than cool whip container and kitty litter or sand. Go over OYO and examples if need to. Study for test.


Oct. 28 – Module 5 Test. Give test and lab notebook to mom.

Oct. 31 – Correct test. Give back to mom. Read/study p. 177-181. Sometime during this module, you’ll need to complete Exper. 6.1 on your own. You’ll need to be in an elevator and take your scales. Those that complete this experiment will share with the lab on the 9th.

Nov. 1 – Read/study p. 181-184; OYO p. 184-85; correct.

Nov. 2 – Read/study p. 185-187; OYO p. 188; correct.

Nov. 3 – Read/study p. 188-193; OYO p. 193; correct. Bold text, terms, and formulas.

Nov. 4 – Read/study p. 193-196; OYO p. 196-197; correct. Bold text, terms. Study all terms, formulas.

Nov. 7 – Read/study p. 197-202; OYO p. 202; correct. Bold text, formulas. Study all OYO.

Nov. 8 – Read/study p. 202-205; OYO p. 205; correct. Study all examples.

Nov. 9 – Lab at Neely’s, 2 p.m. Experiment 6.1 you need to be in an elevator so do this sometime on your own. We’ll do experiments 6.2-6.3 and 7.1 Since Module 7 has only 1 lab we’ll do this one today as well. Go over OYO and examples. Study for test.


Nov. 11 – Module 6 test. Give test and lab notebook to mom.


Nov. 15 – Read/study p. 223-228; OYO p. 228; correct. Bold text, terms, examples and figures.

Nov. 16 – Read/study p. 228-234; OYO p. 234; correct. Terms, formulas, Figures.

Nov. 17 – Read/study p. 235-236; OYO p. 236. Study all formulas, terms, OYO and bold text for chapter.


Nov. 21 – Review questions and practice problems, p. 248-250; correct.

Nov. 22 – Module 7 test; give test and lab notebook to mom.
Nov. 23-25 – Thanksgiving Break

Nov. 28 – Correct test; give back to mom. Read/study p. 251-254; OYO p. 254; correct. Terms, formulas.

Nov. 29 – Read/study p. 254-256; OYO p. 257; correct. Formulas, terms.

Nov. 30 – Read/study p. 257-260 (past OYO questions); OYO p. 257; correct. Formulas, Law of Thermo.

Dec. 1 – Read/study p. 261-264; OYO p. 264; correct. Study all terms, bold text and formulas for chapter.

Dec. 2 – Read/study p. 265-267. Study all OYO for chapter.

Dec. 5 – Read/study p. 268-272; OYO, p. 272; correct. Study all examples and figures.

Dec. 6 – Read/study p. 272-273; OYO p. 273. Make sure you can solve this on your own. Actually try working it out on paper, which of course you should be doing anyway! Study the chapter.

**Dec. 7 – Lab at Neely’s, 2 p.m.** Exper. 8.1-8.2. A piece of string 25 cm. long, inner tube of paper towel roll. Go over OYO and examples.

Dec. 8 – Review questions and practice problems, p. 284-86; correct. Make sure you understand.

Dec. 9 – Module 8 test. Give test and lab notebook to mom.

Dec. 12-16 – Correct test; give back to mom.

A 3 page double spaced, typed paper is due on any area of physics. It can be on a person, a law, etc. Your title should be a larger font and centered at the top, your name a little smaller underneath the title (centered). Make sure you indent the paragraphs and follow an essay outline. The paper will be due Friday, December 16th. Make sure you list your resources used. It’s illegal to plagiarize so make sure everything is in your own words. (http://www.utoronto.ca/writing/plagsep.html)

Dec. 19-30 – Christmas Break


Jan. 3 - Read-study p. 288-294; OYO p. 294, correct. Formulas, terms, examples.

Jan. 4 – Read/study p. 294-297; OYO p. 297, correct. Terms, example.

Jan. 5 – Read/study p. 297-301.

Jan. 6 – Read/study p. 301-304; OYO p. 304, correct. Study all terms for test.


**Jan. 11 - Lab at Neely’s, 2 p.m.** Exper. 9.1-9.2. See note on p. 309. Go over examples and OYO.

Need 4 ping pong balls.

Jan. 12 - Module 9 test. Give test and lab notebook to mom.

Jan. 13 – School Holiday

Jan. 16 – School Holiday


**Jan. 25 – Lab at Neely’s, 2 p.m.** Exper. 10.1-10.2 and More analysis of 10.2. We’ll go over any OYO or questions you have.

Jan. 26 – Module 10 test. Give test and lab notebook to mom.

Jan. 27 – Correct test, give back to mom. Catch up day.

Jan. 30 – Read/study p. 351-355 (up to exper.). Bold text p. 355, terms, formulas.


**** On March 15th, we’ll have a Science Fair. No partners please and absolutely no parental help!! You will need to complete a Science Fair project in the area of Physics. It needs to be high school level. There’s plenty of ideas online, some are:

http://www.isd77.k12.mn.us/resources/cf/steps.html - steps in how to start a science fair project.
Please start thinking about and researching a topic now. Some projects may require several weeks of observation.


**Feb. 8 – Lab at Neely’s, 2 p.m.** Need 3 pieces of copper pipe. Go over examples, OYO, etc.

Feb. 9 – **Module 11 test.** Give test and lab notebook to mom.
Feb. 10 – Correct test; give back to mom. Read/study p. 385-390. Terms, laws, formulas, etc.
Feb. 12 – Read/study p. 395-398; OYO p. 398, correct. Terms, etc.
Feb. 13 – Read/study p. 398-400; OYO p. 400, correct. You should have a science fair project idea by now and even started researching it a little.
Feb. 14 – Valentine’s Day. No science. We love you. 😊
Feb. 15 – Read/study p. 400-404; OYO p. 405, correct. Bold text p. 402, formulas,
Feb. 17 – Read/study p. 408-412 (past OYO); OYO p. 410, correct. Study all OYO for test.
Feb. 20 – School Holiday.

**Feb. 22 – Lab at Neely’s, 2 p.m.** Experiments 12.1-12.3. Need glass pan, protractor. Go over OYO or questions.
Feb. 23 – **Module 12 test.** Give test and lab notebook to mom. Science Fair is in 2 ½ weeks! Since you’re in high school and very responsible now (especially since you’re home schoolers! 😊), this will be your last reminder of the science fair project that’s due. But, it is due and will be presented at 2 p.m. on Wed. March 15th.
Feb. 24 – Correct test; give back to mom. Read/study p. 423-430; OYO p. 430, correct. Terms, etc.
Feb. 28 – Read/study p. 434-438; OYO p. 438, correct. Study examples.

**Mar. 1 – Lab at Neely’s, 2 p.m.** Exper. 13.1-13.2. Go over OYO, etc.
Mar. 2 – Read/study p. 439-442; OYO p. 443, correct. Bold text p. 440, terms, examples, etc.
Mar. 6 – Read/study p. 446-448; OYO p. 448, correct. Study all OYO for test.
Mar. 8 – **Module 13 test.** Give test and lab notebook to mom.
Mar. 14 – A day to prepare for something you have tomorrow.

**Mar. 15 – Meet at the Life House, 2 p.m.** We’ll do the 1 lab afterwards so bring lab notebooks and books too.
Mar. 17 – School Holiday. So fitting since it’s my anniversary!! ☺
Mar. 21 – Read/study p. 476-477. Study all OYO for test.
Mar. 23- Module 14 test. Give test and lab notebook to mom.
Mar. 28 – Read/study p. 495 – 496; OYO p. 496, correct. Formulas.
Mar. 31 – Read/study p. 508-511; OYO p. 511-512, correct. Study all terms for chapter.
April 3 – Read/study p. 512-514; OYO p. 514, correct. Study all figures, examples. Study all OYO for test.
April 4 – Review Questions and Practice Problems, p. 520-522; correct.

**April 5 – Lab at Neely’s, 2 p.m.** Exper. 15.1-15.3. Go over OYO, etc.
April 6 – **Module 15 Test.** (You could study 1 more day and take the test tomorrow.) Give lab notebook and test to mom.
April 7 – Start Spring break.
April 10-15 – Spring Break
April 18 – Read/study p. 527-531.

**April 19 – Lab at Neely’s, 2 p.m.** Exper. 16.1-16.2. Go over OYO, etc.
April 20 - Read/study p. 532-536; OYO p. 537, correct. Terms.
April 21 – Read/study p. 537-539; OYO p. 539, correct. Terms.
April 24 – Read/study p. 540-543.
April 25-26 – Standardized Testing
April 28 – **Module 16 Test.** Give test and lab notebook to mom.

WOW! Ya’ll have done an awesome job! Congratulations on finishing Physics. I’m proud of you!