

Easy Peasy All-in-One High School

An extension of the Easy Peasy All-in-One Homeschool

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Physics with Lab

Honors Physics

Please contact me through the facebook page or by email if you find a problem with a link.

Credits: 1

Prerequisite: At the very least, you need to have taken algebra and know basic trigonometry which can be found at Khan Academy. There are eight links.

Recommended: 11th and 12th grade

Test Prep: AP Physics B

Course Description: This honors course is based on Georgia Virtual Learning's AP physics course. Students use readings, videos and simulators to learn about Newtonian mechanics, fluid mechanics and thermal physics, electricity and magnetism, waves and optics, and atomic and nuclear physics. Students will complete eighteen labs using online simulators to collect their data. The course culminates with a hands-on lab created by the student and a final exam.

Notes:

- This course runs on Java! Very often you will be running Java applications. Make sure you have it installed and it is up to date. If you are supposed to use a simulator and it's not there, check your Java updates!
- This is a tough course, but you can do it. I want you to think about how you best learn, how you best remember information. Can you just listen to something and remember it? Do you remember it best if you write it down? Do you need to read something to get it? Use those things while you take the course. If it's a video, and you are best at listening. Don't take notes. Just sit and listen. If you do best concentrating doing something, take notes; write down key words. Want something to read, take good notes to read afterwards.
- Every day it would be great to sit down with a parent or someone and explain about what you read. Being able to recreate the information in your own words will cement it in your mind. It also shows you really understand it. As you learn the material, stop frequently to put it into your own words. Summarize the page to yourself before you exit.
- This course is based on an AP physics course. It will help you prepare for the AP Physics B test. Here's a link to learn more about AP exams. Also, plan accordingly if you want to take the exam and try for college credit. They are usually offered in May.
- Your final exam will draw on questions from the tests and review pages from throughout the course. After you grade a test, stop and learn from any mistakes. You may see the question again in some form.

Day 1(*)**

If a link is not working to follow the steps on the FAQ page.

1. *Print out this equations sheet to save. Your goal is to be able to read this sheet :) Physics will be easier when you learn to speak its language. Doesn't that equation sheet look like a different language? Take the time to learn the vocabulary. Whenever you come across a formula, an equation, stop and read it out loud in English words. Don't say, "d = v times t." Think, "Distance equals velocity times time." Then say, "You can find out how far you went by multiplying how fast you were going with how long it took you to get

there.” Then it’s no longer a foreign language. Take the time to translate. And eventually, it might not seem so foreign any more. You will be able to use this equations sheet as you work and even when you take tests. My physics teacher always gave us the equations. You can always find an equation, but knowing which, when and how to use it is what you’ll be learning.

2. (*) Print out a [grading sheet](#) or use the [Excel version](#).
3. Read through these lessons on [metric measurement and conversions](#).
4. *Print out the [first three pages](#) of worksheets on metric conversions.
 - o Use the second page of the lesson materials to fill in the boxes at the top of the first worksheet.
 - o Then complete the worksheets.
 - o Check your [answers](#) when you are done.
5. Play [ice slide](#). Write your score in seven different measurements.

Day 2

1. Download this [graphical analysis program](#).
2. Read through this [tutorial](#) on how to use the graphical analysis program and give it a try.
3. Here is your [scientific calculator](#). Yes, you get to use a calculator, so learn how to use it.
4. Read this [introduction and vocabulary list](#). Copy down the vocabulary. Mouse over to see the definitions.
5. Math review, [page 3](#). There are links on the side if you need them. If you haven’t had trigonometry, take the time to do the first ten things on this basic [trigonometry list](#) at Khan Academy.

Day 3

1. *Print out these two note taking guides to use while you watch the video below. [One](#) [Two](#)
2. Watch the videos on [conversions and using a scientific calculator](#). Follow the directions and practice. ([video script](#))

Day 4

1. Take the [quizzes and activities on page 3](#) and practice with your [calculator](#). The exponents are telling you how many times to move the decimal place and in what direction.
2. If you need more practice with this, go to [Khan Academy](#).
3. Record your scores out of 9 and 10 for the self-checking quizzes.
4. Learn about [significant figures by watching a video](#) or by [reading](#) and then [practice the concept](#).

Day 5

1. Read through these [examples](#) of conversion. Copy down each problem and work it through with the example.

Day 6

1. Watch this video on the [relationship between variables](#). Follow any directions it gives.
2. Explain the concept of the video to someone.

Day 7**

1. *Print out some [graph paper](#) to have on hand. (If you are in America, leave the settings.)
2. *Print out these lab sheets, [graph questions](#).
3. To find the force or weight (N, measured in Newtons) you multiply the mass by 9.8 (meters per seconds squared), which is gravity pulling down on the mass.
4. Use the [lab results notes](#) to fill in your lab worksheets.
5. Check your [answers](#).
6. Record your score.
 - o Lab worksheets: 6 points for correctly filling in your chart; 1 point for correctly filling in the blanks (6 possible) , 8 points for your graph (make sure it’s labeled)
7. Always save your written work. Keep it for your portfolio and your records.

Day 8

1. Read the "Who Done It" assignment on page 8. Make the graph and answer the questions at the end of that section.
2. Complete the "Question for Thought" section.
3. Check your answers.
4. Record your scores.
 - Who Done It: 1 point for each correctly filled in blank (6 possible), 4 points for your graph (make sure it's labeled)
 - Question for Thought: 1 point for each of the two parts of the two questions (four possible—write, solve, write, express)

Day 9

1. Complete this lab on graphing scientific data. Follow the instructions. Use your graphing analysis program. (The link on the pdf to learn more about graphs is not working. If you need a refresher, you'll need to look up what you need.)
2. Read through these lab report directions and the lab report rubric. (You don't have to include a photo.)
3. Score the lab out of 30. This means there is a potential for three points extra credit.

Day 10

1. Read through the test review on page 9. Answer each question before scrolling over.
2. Scroll over the key terms to read their definitions. You don't have to know them yet.
3. Read about vectors. Make sure you click on all the buttons!
4. Complete page 2 on vectors. (You don't have to watch the video, unless you don't get it and you think a video would help.)

Day 11*

1. Read about scalar and vector and check your understanding at the bottom of the page. Answer everything out loud to yourself before you click on the answer spaces.
2. *Print out this worksheet on vectors and complete page 1. Save the second page for Day 12.
3. Check your answers.
4. Record your score out of 15. 1 point for each blank and 6 answers for number seven. (potential for extra credit)
5. Remember to hold onto your written work. Keep it nice for your portfolio and records.
- 6.

Day 12

1. Read about vector fundamentals.
2. Complete the second page of the vector worksheets from Day 11.
3. Check your answers.
4. Record your score out of 15. 1 point for each blank and 6 points for number nine.

Day 13

1. Complete this project assignment on flight and vectors. Stop at "Ready to Become a Pilot?"
2. Check your answers.
3. Record 10 points for completing the assignment.

Day 14*

1. Watch the Khan Academy video on displacement and vectors.
2. Read this page on distance and displacement.
3. *Print out these worksheets on displacement and distance. Complete page 1 and save the second page for Day 15.

Day 15

1. Complete the second page of the worksheets from Day 14 on displacement and distance.

2. Play with these [vector components](#). The pink lines show two different vectors. The red line shows them combined. Look at them and think about it. If you walked over two blocks and up three blocks, you'd end up in the same spot if you just walked diagonally there.
3. Read page 3 about [adding vectors](#).

Day 16

1. Read about [vector addition](#). Stop after practice A and practice B. Do them both BEFORE you look at the answers.
2. Complete this [interactive activity on vectors](#). Read all of the directions and questions. You can explain the answers to someone or write them down.

Day 17

1. Complete this [project assignment on flight](#). Read and follow the directions. Only do numbers 1 and 2 under part D.

Day 18

1. Read about [resultants](#).
2. Play with the [resultant finder](#).
3. Complete page 4 on [composition and resolution of vectors](#). Complete the bottom nine questions first. Find the answers before you look at the answers.
4. Then complete the matching section. Check your answers and record your score.

Day 19

1. Learn another method, the [parallelogram method](#), of finding a vector's components.
 - o Click on "find out components."
2. Read page 8 on the [parallelogram method](#) and use the java applet as directed.
3. Read again about adding vectors [head to tail](#) on page 9. Read more and watch the animation on the [head to tail website](#).

Day 20

1. Read about [adding vectors algebraically](#) on page 10.
2. Use the links on the page. Watch the [video](#). Read the [additional page](#).
3. Answer the [questions](#) at the bottom of page 10. Record your score out of 2. (potential for extra credit)
4. Remember that you have a [calculator](#).

Day 21

1. Complete the [vocabulary review matching](#) on page 12.
2. Read the [sample problem](#) and (solve the four problems at the end. I don't have answers for these. You can use the problems below instead if you like.)
3. Either use the sample problems on the worksheet, but I don't have the answers yet, or try some of the [three types of problems](#) using trigonometry at the bottom of the list.

Day 22*

1. *Print out this test, [Vectors Test](#).
2. Check your [answers](#).
3. Record your score out of 30, 2 points for each question. (There are three parts: 9 questions, 4, 2.)
4. There are links at the bottom of page 12 if you want to [review](#) anything, especially math things.

Day 23

1. Complete this [projectile simulation lab](#).
 - o Read the directions.
 - o Use the link to go to the [simulation](#).
 - o Use the link on that page to find your [activity sheet](#).
 - o Go through your activity sheet to find what you need to write up your lab and answer the question posed.

- Read through these [lab report directions](#) and the [lab report rubric](#). (You don't have to include a photo.)
- Record your score out of 30. (potential for extra credit)

Day 24

1. Copy the [definitions](#) on page 1 about kinematics.
2. View the flicker page and read about the [types of motion](#) you'll be learning about.
3. Watch this presentation on [one-dimensional motion](#). Take notes.

Day 25

1. Use the links to learn more about one-dimensional motion.
 - [Distance and Displacement](#) (push play on the top [simulator](#) on page 5)
 - [Speed and Velocity](#)
 - [Acceleration](#)
2. Answer the first three [kinematics](#) problems. Remember, you can use a [calculator](#).
3. Make sure you check your answers and understand how to get the right answer.

Day 26

1. Use the links to learn more about one-dimensional motion.
 - [Position vs. Time Graphs](#)
 1. Make sure you use the graphing applets. Also, make sure you check your understanding BEFORE looking at the answers.
 - [Velocity vs. Time Graphs](#)
 1. Play with the [car acceleration](#) applet. What does each graph show?
 2. Apply the [brakes](#). What are you seeing?
2. Remember these? Take a look again and read the [types of motion](#).
3. Now, [name that motion](#).

Day 27

1. Use the links to learn more about one-dimensional motion.
 - [Kinematics Equations](#)
 1. Copy down the kinematic equations. What are they talking about? Read the equations to someone in English. Use words, not letters and symbols.
 - [Kinematics Equations and Problem Solving](#)
 1. Copy down the sample problems.
 2. Do [problems 4-8](#). Remember, you can use a [calculator](#).
 3. Try problem 9. It's blue because it's harder. Give yourself two point extra credit if you get it right.

Day 28

1. Read the [tips and summaries](#) on page 2. Actually, read them slowly out loud. Yes, I'm serious. Even better, find someone to teach them to. Make sure you know what they say.
2. Take the quiz. The three box questions and the one book question. Answer before you turn the page!
3. Record your score out of 4.
4. Answer the questions about "[Running in Circles](#)."
5. **NEED ANSWERS**

Day 29

1. *Print out these [questions](#) and answer numbers 1-14. Login: easypeasy allinone
2. Check your [answers](#) and give yourself two points for each correct answer.
3. Record your score out of 28.

Day 30

1. Watch these videos and take note of the different types of motion in play.
 - o Watch the [physics of skateboards](#).
 - o Watch [robofish](#) for a bit. (on youtube — make sure it is on safe mode, found at the bottom of every youtube page)
 - o Watch the [physics of flight](#). (on youtube)
2. Look at the [first three problems](#) on this page. The question titles on the right correspond to the bold words on your question page. You are going to be using those graphs/pictures to answer the questions on [page 3](#).
3. Check your [answers](#).
4. Also explain number 8 on page 3.
5. Finally, answer [number 10](#).

Day 31

1. On page 4 skip the running man. Use the second [simulation](#). Click on all of the graphs and on the first few letters on the left. Take notes or explain to someone. (Graph 1 shows a steady acceleration over time, etc.)
2. Also read the graph section at the bottom of the page. At the end of the reading, click to try the graph. Write a paragraph about what the graphs show or teach it to someone.
3. Draw your own three properly labeled graphs. Write on there what it shows. Need [graph paper](#)?

Day 32*

1. Complete the [virtual lab on acceleration](#) on page 6.
2. *Print the worksheet and complete them using the given websites.
 - o [Directions/worksheet](#) Login: easypeasy allinone
 - o [velocity and acceleration](#)
 - o [the linear cow](#) (Allow pop-ups for this page. Check for a blocked pop up on your browser bar if a new page doesn't open.)
3. Write a conclusion paragraph.

Day 33

1. Watch the presentation on [2D motion](#).
2. Go to page 7 and watch the [simulations of 2D motion](#).
3. Where it says activity, don't follow the directions. Click [here](#).
4. Take the [quiz](#) on page 7.
5. Record your score.

Day 34

1. On page 8 scroll past the first simulator and begin where it says motion in 2D animation. Follow the directions and use the [projectile motion](#) simulator. Answer the questions at the bottom BEFORE looking at the answers.
2. Stop after the last question, number 7.

Day 35*

1. Use the [projectile motion simulator](#).
2. Create three graphs. They will show the height, range and time. (One graph will have height on the y axis. One will have range on the y axis. One will have time on the y axis.)
3. Use three different colors and include on each graph lines for speed, mass and angle.
4. Record your score out of 30, up to ten points for each graph. Each graph should show three lines, plus should be labeled appropriately on the x and y axis and be titled.
5. You might want to include this in your portfolio.

Day 36

1. Complete the question for thought assignment on page 8. Use at least one quote from the article. Make sure the article name and website address is listed under your paragraphs for your citation.
2. Score your assignment. 5 points for finding and reading an article on kinematics. 5 points for each paragraph. Take off a point for missing any of the following: introduction, conclusion, details, quote.
3. You might want to include this in your portfolio.

Day 37 (*)

1. Watch this video demonstrating air resistance in action.
2. Write a paragraph about air resistance, how it effects things in your world and how its impact can be limited. Give examples.
3. Record 5 points for a complete paragraph that follows the instructions.
4. (*) These worksheets are preparation for the ACT, a test similar to the SAT except that it also tests science reasoning. This is the type of thing you would have to do, and it's on kinematics. Read the passage and answer the questions.
5. Check your answers and make sure you understand.

Day 38

1. Complete the review on page 11.
2. Take the test. Do numbers 1-19. (Skip the last problem.)
3. Check your answers on page 9.
4. Add one point and record your score out of 20.
5. You might want to save this in your portfolio.

Day 39

1. Do problems 11 -16.
2. Give yourself one point extra credit for each one you got right. Record how many you got right.
3. Try graphing motion.

Day 40

1. Copy down the key terms.
2. Write down each force and a sentence that helps you remember what it is. (Or, you could draw a picture for each one, whatever helps you remember.)
3. One more, copy down the terms, starting with weight, on page 2. Write a short definition for each one.
4. Click on the simulation at the bottom of page 2. (It will download onto your computer. Open it.) Use all of the tabs. Click to turn on the free body diagrams.

Day 41

1. Watch this presentation on the Newton's first law of motion.
2. Read about Newton's first law on page 3. Tell it to someone. No, explain it to someone.
3. why we wear seat belts
4. Try problems using Newton's First Law.

Day 42

1. Remember your calculator.
2. Read about equilibrium and check for understanding.
3. Even if I don't have you record a score for something like this, in the end you will receive points IF you complete your daily assignments. Even if you didn't, it's still smart to do all of your work to the best of your ability. You should always do your best because we are told to do all things to the glory of God. But it is smart to always try your best, then you will be at your best when it's time to test.

Day 43

1. Watch this presentation on Newton's second law of motion.
2. Read about Newton's second law. Stop at the lab assignment.

3. Read about [the elephant and the feather](#).
4. Watch this example of [free falling objects](#) hitting the ground at the same time. (on youtube, make sure safety mode is on)
5. The astronaut didn't say Newton first made the observation. Who did he say? (answer: Galileo)

Day 44

1. Complete the lab on [Newton's second law](#). If you use the link in the lab notes, it will download a program onto your computer. Some of the buttons appear off my screen, but I could drag my screen up to see them to know what to click on. If you don't want to download it, follow the instructions for the lab but use the [simulation](#) right on page 4.
2. Follow the lab instructions and write a lab report.
3. Score your lab report.

Day 45(*)

1. Do the [question for thought](#) on page 3. You don't have to write anything. Just explain your answer to someone.
2. *Complete this [worksheet](#) on Newton's second law.
3. Check your [answers](#). (page 12) (Someone sent in this corrected answer for letter h. Click and drag to reveal: 96)
4. Score your work and record your score out of 10.
5. Here are extra practice problems IF YOU WANT them, [Newton's second law](#). You could do five for extra credit if you need the points.
6. This is the end of the first quarter. If you are using a paper grading sheet, divide your total score by the total possible. It should be less than 1 (unless you have a perfect or better than perfect score.) Multiply your result by 100. (Just ignore decimals.) That's your grade percentage (eg. 87%). Your goal is 90% or better.
7. Remember to hold onto written work for your portfolio and records.

Day 46(*)

1. (*)Print out the [grading sheet](#) for the second quarter or use the [Excel version](#).
2. Watch this presentation on the [concepts of Newton's FIRST law](#) of motion.
3. Read about the [Atwood machine](#) on page 5.
4. Use the links on the page to learn more. [Atwood Machine](#)[Atwood Machine More](#) (An application of Newton's second law of motion)
5. Try the [two problems](#) given under the example, still on page 5. When you have your answers, use [this simulator](#) to check your answers.

Day 47

1. Read page 6 about the [Atwood machine](#). Stop after the example problems.
2. *Complete this [quiz](#) on the Atwood machine.
3. Check your [answers](#).
4. Record your score.
5. Complete [problems 1-3](#).

Day 48

1. Complete this [lab](#) on Newton's second law of motion. It's nicest to use a computer that you can print from, but it's not mandatory.
2. Follow the directions. Click on the chart to fill in the info. Click on the journal to answer the questions.
3. Write up a lab report.
4. Score your lab and record the grade.

5. You might want to include this in your portfolio.

Day 49

1. Watch this presentation on [Newton's third law of motion](#).
2. Look at this poster. Find [Newton's third law at work](#).
3. Read page 2 to learn about the [poster](#).
4. What makes this [balloon](#) fly?
5. Read [page 4](#) to find out and to read even more examples.
6. What's another example of Newton's third law in everyday life? (my answer: jumping)

Day 50*

1. Watch the number 8 video, The Apple and the Moon, on [Newton's Laws](#). Scroll down to find it. Click on the little VoD button. (This is only available in some countries. If you can't view it, try a VPN or search for it on youtube.)
2. *Print this [worksheet](#) and answer the questions as you watch.

Day 51*

1. Use the links on the page to learn more.
 - [Newton's third law](#)
 - [action-reaction](#)
2. *Print out this [worksheet](#) and complete it.
3. Check your [answers](#). (page 23) (The answer to number for is missing from the worksheet. Click and drag to reveal: 600N up)
4. Record your score out of 15. (16 possible)
5. You might to keep this in your portfolio.
6. Here are extra practice problems IF YOU WANT them, [Newton's Third Law of Motion](#).

Day 52

1. Watch this presentation on [gravity and normal force](#).
2. Read page 8 and work through the [problems](#) to make sure you understand. (If the question isn't visible, click on the keyhole.)

Day 53

1. Here is another problem similar to what you'd find on the [ACT](#). This one is related to Newton's laws. Read the passage and answer the questions.
2. Check your [answers](#).
3. Copy the [key terms](#) on page 1.
4. Watch this presentation on [unbalanced forces](#).

Day 54

1. Use the links on page two to learn more. Answer the questions on each page.
 - [the meaning of force](#)
 - [balanced and unbalanced forces](#)
 - [inclined plane](#)

Day 55

1. Try five problems on the [application of Newton's laws](#).
2. Read page 2 about [unbalanced forces](#) and answer the questions.
3. It's up to you if you want to read any of the links I didn't choose for you.

Day 56

1. Watch this presentation on [friction](#) and balanced forces.
2. Read [page three](#) and use the simulators. Explain to someone what one of them shows. (They are linked to directly below.)
 - [friction](#)

- Under c04 click on [4.2](#), [4.3](#) and [4.4](#)
- Skip the “click to run” and the other inclined plane simulator.

Day 57

1. Complete the [inclined plane lab](#) at the top of the page.
2. Use your lab directions and rubric.
3. Use one of the [inclined plane](#) simulators on [page three](#) to create a table of data.

Day 58

1. Watch this presentation on [circular motion](#) and centripetal force.
2. Read about [speed and velocity](#).
3. Read about [acceleration](#) and answer the questions.

Day 59

1. Read page 4 about [circular motion](#) and stop when it sends you to another site.
2. Read about [centripetal force](#). Watch the animation and answer the questions.

Day 60

1. Read about [centrifugal force](#).
2. Read about the [mathematics](#) behind circular motion.
3. Complete [problems 11-15](#). Give yourself one point extra credit for each one you got correct.

Day 61

1. Read through three pages on [circular motion](#). The last is on vertical motion. Copy down example problems.
2. Use the [circular motion applet](#). Explain to someone what you are looking at.
3. Simple [review](#)
4. Read this sample ACT passage and answer the questions.
5. Make sure you understand by [checking your answers](#). On the ACT there are no points deducted for wrong answers, so it's better to guess than to leave an answer blank.
6. Complete [problems 16-20](#).
7. Check your answers.
8. Record your score.

Day 62

1. Complete this circular motion lab.
 - Use the [simulator](#).
 - Follow the directions and [answer the questions](#). Write a paragraph for your summary.
2. Record your score. 15 points for numbers 2-8. 5 points for a summary paragraph if it meets the given guidelines.

Day 63*

1. Read page 5. Copy the [example problem](#).
2. *Print out this [worksheet](#) and complete it. Remember your [calculator](#).
3. Check your [answers](#).

Day 64

1. Watch this presentation on [torque](#).
2. Read page 6 about [torque](#).
3. Read this page with an example of [static equilibrium](#).
4. Find a [sports example](#) as described in the question for thought section on page 6. You don't have to write anything. You can just explain it to someone.

Day 65

1. Complete the [review](#) on page 9.
2. Do the forces [review](#) on page 7.

3. Complete the review activity on page 11.
4. For more review, read through page 9 and answer the questions.

Day 66

1. Take this test on using Newton's laws.
2. Check your answers. (Add 2 points to your total.)
3. Record your score out of 15.
4. Complete the questions, free response test.
5. Check your answers.
6. Record your score out of 3. (potential for extra credit)

Day 67

1. Copy the key terms.
2. Watch this presentation on work.
3. Read page 2 on work. Don't click on anything yet or answer the questions.
4. Read this page on work. Watch the examples of work. Answer the three problems at the bottom of the page.
5. Try the problems at the bottom of the page 2.

Day 68

1. Read about work. Answer the questions before you look at the answers. Watch the animations.
2. Complete these problems on work.
3. Look at and read about work and energy in our lives.

Day 69*

1. *Print out and complete these worksheets on work.
2. Check your answers.

Day 70

1. Watch this presentation on potential energy.
2. Read page three on potential energy. Don't use the links.
3. Read the page about the mass on a spring.

Day 71

1. Run the energy skate park simulation. Explore.
2. Answer the questions at the bottom of the page three.
3. Read this page on the work-energy relationship and answer the questions.

Day 72

1. Read about potential energy and check your understanding.
2. Read about kinetic energy and check your understanding.
3. If you are interested, The Energy Story.
4. Play at Warp Speed central to learn about energy and particle physics.

Day 73*

1. Read about mechanical energy.
2. Read about power and check your understanding.
3. *Print out this worksheet and answer the questions about power.
4. Check your answers. Scroll to page 5.
5. Record your score out of 10. (A few have two blanks.)

Day 74*

1. Read page 4 about power and machines. Don't use the links.
2. Here's a reminder about the simple machines.
3. *Print this data table and complete a lab on pulleys. Use your directions for writing and scoring a lab.
4. Use this simulation to complete the lab. If you want help using the simulation, here are two videos.
5. Record your score out of 30.

6. Include the lab in your portfolio.

Day 75

1. Watch this presentation on [mechanical advantage](#).
2. Read page 5 about [mass spring systems](#).
3. Use the simulators. [First](#) [Second](#)
4. Take the quiz at the bottom of page 5. Click on Quiz Group if it's not visible.
5. Check you answers and record your score out of 6.
6. Read the [passage](#) example from the ACT test on mass spring systems and answer the questions.
7. Check your [answers](#).

Day 76

1. Watch the presentation on [pendulums](#).
2. Read page 6 on [pendulums](#).
3. Use the [simulation](#).
4. Take the quiz.
5. Check your answers and record your score out of three.
6. Read this ACT example [passage](#) on energy and answer the questions.
7. Check your [answers](#).
8. Try problems 21 and 22 for [extra credit](#). You get 1 point for 21 and 2 for 22.

Day 77

1. Watch the [presentation](#) on momentum.
2. Read page 7 on [momentum](#).
3. Use the [link](#) about angular momentum.
4. Answer the questions at the bottom of page 7.
5. Read about [momentum](#) and check your understanding.
6. Look at/read about [momentum in pictures](#).

Day 78

1. Watch the presentation with a [momentum](#) example.
2. Read about the [momentum-impulse connection](#) and answer the questions.
3. Read page 8 on [collisions](#).
4. Use the [simulator](#).

Day 79

1. Do the [elastic and inelastic labs](#) (#s M7 and M8). You can write them up as one lab.
2. Use this [simulator](#).
3. Create a data chart.

Day 80

1. Read the [review](#) on page 10.
2. Complete the questions and answer review exercises as a quiz.
3. Check each answer. Give yourself 1 point for each correct answer. The matching each count as one.
4. Record your score out of 15.
5. Complete this [test](#) on circular motion.
6. Check your [answers](#).
7. Record your score out of 3. (potential for extra credit)

Day 81

1. Copy the key terms on the [heat and energy](#) chapter.
2. Watch this presentation on the [mechanical equivalent of heat](#).

3. Read page 2 on [heat exchange](#).
4. Use the [link](#) on the page.
5. Watch the presentation on [specific heat](#).
6. Try the question for thought, the [cold water diet plan](#). Find your answer and then explain it to someone.

Day 82

1. Watch this presentation on [thermal expansion](#).
2. Read page 3 on [thermal expansion](#).
3. Look at the [thermal expansion equations](#).
4. Here are the [thermal expansion coefficients](#).
5. Read through this [lab](#). Use all of the “click me” buttons. You can’t stream the video. One of the buttons is for reading the video script.

Day 83(*)

1. Read page 4 on [thermal conductivity](#) and answer the questions.
2. Use the [labs](#) to answer the (*)[questions](#).
3. Check your [answers](#).

Day 84

1. Complete the two [heat and energy review activities](#) on page 7.
 - o [crossword](#)
 - o [flashcards](#)
2. Take the [heat and energy test](#) on page 5.
3. Answer each question and check your answer. You get one point for each correct answer.
4. Record your score out of 10. (potential for extra credit)

Day 85

1. Read the ACT practice passage on [collisions](#) and answer the questions.
2. Check your [answers](#).
3. Copy the key terms in [fluids and pressure](#).
4. Complete the first five problems on [collisions](#).
5. Check your answers and use the guide to help you understand.
6. Complete the first five problems on [circular motion](#).
7. Check your answers and use the guide to help you understand.

Day 86

1. Read page 2 on the [states of matter](#) and take notes.
2. Watch this [plasma video](#). (youtube, make sure safety mode is on) I don’t think the first way will hurt your microwave. We’ve done it several times. I’ve not tried the plastic container way.
3. Use the simulator on page 2.
4. The [diagram](#) on the page is hard to see. Here it is large.
5. Can you answer the [questions](#)?

Day 87

1. Watch the presentation on [hydrostatic pressure](#).
2. Read page 3 about [hydrostatic pressure](#). Stop at the simulator.
3. Use the [simulation](#).
4. Answer the questions under [respond](#). Login: easypeasy allinone
5. Check your [answers](#).

Day 88

1. Watch the [presentation](#) on buoyancy.
2. Read about [buoyancy](#). Click on mechanics, fluids off to the right, and buoyancy in the middle. Scroll down to keep reading. (There are two scroll bars.)

3. Read page 4 on buoyancy. Skip the simulators.
4. Use the two simulator.
5. Do the question for thought.

Day 89

1. Complete this lab on buoyancy.
2. Use the simulation.
3. Check you answers.
4. Record your score out of 20. (potential for extra credit)
5. You might want to save this for your portfolio.

Day 90

1. More review today. Do at least three problems from each of the mechanics problem sets.
2. If you want to challenge yourself, use the blue numbered problems.
3. Check your answers and use the explanations.
4. This is the end of the second quarter. See Day 45 if you need a reminder of how to find your grade. Remember to be saving written work for your portfolio.

Day 91(*)

1. (*) The third quarter starts today. Print out your new grading sheet or use the Excel version.
2. Watch this presentation on fluid flow continuity.
3. Read page 5 and copy down the equation of continuity.
4. Explain to someone what the equation says.
5. Watch this presentation on Bernoulli's equation.
6. Read page 6 and copy Bernoulli's equation.
7. Explain to someone what the equation is saying.
8. Use this fluid simulator to make observations about how the viscosity and density of a liquid affect its flow.
 - On the page there is a link to a youtube video about the simulator if you need help.
 - Write or tell someone to state and explain your observations.

Day 92*

1. *Print out the lab assignment. Use the listed websites and follow the directions.
 - water tower
 - hydrostatic pressure
 - buoyant force
 - Pascal's principle
 - another example
2. Record your score.
 - If the assignment was finished on the day assigned and it is complete, record 30 points.
 - If the assignment is complete but not finished on the day assigned, record 20 points.
 - If the assignment isn't complete, record with 10 points.
 - Never lose points for an incomplete or late assignment! It's always worth trying your best and getting it done.
3. You might want to save this in your portfolio.

Day 93

1. Complete the review activity on page 9.

2. Study for your test on Day 94. Click on each page and reread. Look at the examples and simulators. Make sure you understand the equations. Read them out loud in English, not symbols. Explain to someone what they are used to find.

Day 94

1. Take the test on fluids and pressure.
2. Check your answers on page 7.
3. Record your score out of 20.
4. You might want to save this for your portfolio.

Day 95

1. Copy the key terms.
2. Watch this presentation on ideal gases and kinetic theory.
3. Read page 2 and take notes on the different laws.
4. Use these links from the page.
 - Charles' Law examples
 - Charles' Law calculator
 - Boyle's Law calculator

Day 96 (Materials: straw, zip lock bag, if you don't have it, you can use a balloon or your imagination, it's a simple activity)

1. Use the Boyle's law page and...
2. Use the animated gas lab to...
3. Complete this activity and answer the questions.
4. Record your score out of 20. (potential for extra credit)

Day 97

1. Watch this presentation on the laws of thermodynamics. (Oh, just for fun, if you like, because I like Joplin and musical theater.)
2. Read page 3 on thermodynamics.
3. Use the links on the page.
 - First law
 - Thermodynamics
4. Use the simulator.
5. Explain to someone the first law of thermodynamics. Be the teacher and make them get it. Draw a diagram if you need to.

Day 98

1. Read page four on the second law of thermodynamics.
2. Use this link from the page to watch "the virtual simulation of a gaseous mixture reaching thermodynamic equilibrium." (from page four)
3. That was the first experiment. Use the other experiments and predict what's going to happen. Use the questions on the pages.
4. Do the quiz question at the bottom of page four.

Day 99*

1. *Complete the thermodynamics lab according to the directions on the page. Complete the worksheet questions.
2. Record 15 points for completion.

Day 100

1. Complete the review activity on page 7.
2. Complete the thermodynamics test on page 5. Keep your mouse on the scroll bar!!!

3. Answer all of the questions before you look at any of the answers.
4. Score your test and record you score out of 10.

Day 101

1. Copy the key terms of electrostatics.
2. Watch this presentation on electric charges and Coulomb's law.
3. Read page 2 about electric charges. Take notes. Copy the example problem.
4. Use the physlet to discover the electric forces.
5. Use the simulator on the page.

Day 102

1. Read about the structure of matter and check your understanding.
2. Read about neutral vs. charged objects and answer the questions.
3. Look at the photos and read about static electricity.
4. Can you answer number 1?
5. Check you answer and use the solution guide if necessary.

Day 103

1. Read about charged interactions and check your understanding.
2. Read about conductors and insulators and check your understanding.
3. One more page on charged interactions.
4. Answer questions 1 and 2.

Day 104

1. Read the ACT practice passage on heat and answer the questions.
2. Check your answer and make sure you understand the solution.
3. Read about the inverse square law. Copy the equations. What do they mean?
4. Do the problems at the bottom of the page.

Day 105

1. Read page 3 about multiple charges. Take notes. I suggest copying the example problems to help you follow them.
2. Answer the questions before you look at the answers.

Day 106

1. Read page four on methods of charging.
2. Use the two simulators.
3. You will not be watching the video.
4. Use the links in the sidebar to make sure you understand this topic. You don't have to do every question. You can read the questions and then read the answers. Try what you need to though, to make sure you understand.
 - charging by friction
 - charging by induction
 - charging by conduction
 - grounding

Day 107

1. Watch this presentation on electric fields.
2. Read page 5 about electric fields. You will not be watching the video.
3. Use the simulator when you get to it.
4. When you get to the next presentation, stop to watch it (below).
5. Watch the second presentation on conductors.
6. Try to answer the questions at the bottom of page 5.

Day 108*

1. Read about electric field lines and check your understanding.
2. *Print the first two pages. Take the quiz.
3. Check your answers.
4. Record your score out of 9. (potential for extra credit)
5. Watch this presentation on electric potential.

Day 109*

1. Read page 6 about electric potential. You will not use the video. Take notes; I suggest copying the example problems.
2. Answer the questions at the bottom of page 6.
3. Read about the electric potential difference.
4. *Print out these worksheets and complete them.
5. You might want to save this in your portfolio.

Day 110

1. Watch this presentation on capacitors and then on the energy of a capacitor.
2. Read page 7 about capacitors through to the second presentation. Use the links on the page.
 - How Stuff Works
 - capacitors
3. Watch the second presentation on capacitors in a circuit.

Day 111

1. Do the example problems on page 7.
2. Use the simulator.
3. Try the problems to check your understanding on the bottom of page 7.
4. Do the vocabulary review on page 9.
5. On Day 112. You are going to have a test. Use the links on page 9 to study. I'm telling you what to study. If a teacher tells you what to study, that means it's going to be on the test. Know it.

Day 112

1. Take the electrostatics test. Open it on your computer and NO OTHER PAGES. Once you open the test page, you can no longer study. You must close your notebook and any other windows. In school you would have no other paper on your desk and would have to keep your eyes on your own paper.
2. (Answers Click and drag to highlight the area to the right AFTER you are done with the test: Go to page 9 and use the links in order. The problems are numbered. I told you to study those pages. Teacher will often take test questions right off of homework or quizzes. They are great study tools.)
3. Record your score out of 20. (If there is an A and B, both parts are one point.) There is a potential for extra credit.

Day 113*

1. Copy the key terms.
2. Watch this presentation on current, resistance and power. This does not open full screen. You can click to maximize to make it a bit bigger.
3. Play around with this circuit to learn about current and resistance. The lightening bolts are the batteries. The others are the resistors. They go on the top line of the circuit. Flip the switch and watch the light bulb. Turn the switch off. Change what you have there and flip the switch again. (Give it a minute to load. It's in the white space toward the bottom and runs on Java.)
4. *Complete this voltage simulator worksheet as you play around.
5. To see if you really came to the right conclusion. Complete this circuit correctly in one try. Answer the second half of the worksheet.
6. Read current, voltage and resistance on page 2.

Day 114

1. Do problem 6. I don't want you to forget. Check your answer and use the guide if needed.
2. Read page 2 on currents. You are not going to watch the video.
3. Copy the equations. Take notes.
4. Try the problems before you look at the answers.
5. Use the first simulator on page 2.
 - o battery resistor circuit

Day 115 (materials: drinking straw)

1. Use the second simulators on page 2 to complete this lab.
 - o Ohm's law
 - o resistance in a wire
2. Complete the worksheet for the lab. One of problems you will have to calculate on your own and not use the sliders.
3. Score yourself 11 points for completion plus 1 point for each correct answer for the four questions at the bottom of the page.
4. You can check your conclusion answers using this site. (Final answer: The extension cord's resistance increases over the distance traveled. If the extension cord is only designed to carry the current 50 feet, the resistance over several cords may prove too great to carry the needed power.)

Day 116

1. Read about electric current.
2. Read about Ohm's law and answer the questions to check your understanding.
3. Take this Ohm's Law quiz.
4. Record your score out of 8. (potential for extra credit)

Day 117

1. Watch this presentation on series circuits.
2. Read page three about series circuits.
3. Teach someone about what you just read.
4. Read about circuit diagrams.
5. Complete the online ammeter activity through the questions at the end.
6. Now the online voltmeter...

Day 118

1. Read about parallel circuits. Read up to equivalent resistance.
2. Read through combination circuits and check your understanding.
3. Read page 4 on circuits. Take notes, copy an example problem, use the simulator.
 - o combination of resistors

Day 119*

1. *Complete this circuit lab by following the directions on this worksheet.
2. Record 10 points for completing this lab.

Day 120

1. Read page 5 about Kirchoff's rules. Take notes.
2. Use the Wheatstone's Bridge simulator embedded on the page.
3. Use the link to the electric current simulator. Choose different types of circuits from the menu. There are too many to see them all. Spend five minutes observing different circuits. What are your observations?
4. Complete the water heater question for thought. Explain your thoughts to someone.
5. Give yourself 5 points for COMPLETING the question for thought, IF you answered each part.

Day 121

1. Watch this presentation on [capacitance](#) and RC capacitors.
2. Read [page six](#). Take notes.
3. Use the [simulator](#) on the page.
4. Do the [review activities](#) on page 8.

Day 122*

1. *If you don't mind using the ink, print all of the pages of this [quiz](#). You can just read this online. If you print it, you can include this in your portfolio. Follow all of the directions. This teacher confirms what my father (a teacher) ALWAYS said, "Neatness counts." Presenting a neatly completed assignment is like coming into a job interview with unwrinkled clothes and clean hands. If someone walked into an interview like that and another person came in looking dirty and sloppy, who would be hired even if they were the same in every other way?
2. **NEED ANSWERS to the quiz (If we don't have answers, can switch to questions from [here](#).)**
3. Score your answers using her point guide then divide that score by four and record it.
4. Try one or all of problems 11-13 for [extra credit](#). (1 point for each right answer)
5. Record any extra points.

Day 123

1. Copy the [key terms](#).
2. Read page 2 about [magnetism](#) and take notes.
3. View the [magnetic pole lines](#) and read the explanation. (Wait for it to load in the blank space.)
4. Watch this presentation on the [forces on moving charges](#).
5. Read page 3 on [charged particles in a magnetic field](#) and take notes. You won't watch the video.

Day 124

1. Read these slides on [magnetic forces and charged particles](#) and do the check your understanding and example problems. Stop and pay attention to each diagram and equation. What are they showing? What are they saying?
2. Watch this short video of a [charged particle moving in a magnetic field](#). (youtube)
3. Try the [right hand rule](#).
4. Use the [simulators](#) on page 3. Explain to someone what they show.
 - o [Magnet and compass](#)
 - o [Magnetic field of a bar magnet](#)
5. Answer the [questions](#) at the bottom of page 3.

Day 125

1. Watch this presentation on [current-carrying wires in a magnetic field](#).
2. Read the top of [page 4](#) on the same topic and stop at the next presentation.
3. Watch the presentation on [fields of long current-carrying wires](#).
4. Finish reading [page 4](#). Take notes.
5. Use the [simulator](#) on the page. What does it show?
6. You DO NOT have to do the problems yet.

Day 126

1. Read about magnetic fields and [current-carrying wires](#).
2. Check out the [thumb](#) in the diagram and read the page.
3. Read these slides on the topic and [answer the questions](#).
4. Answer all of the [odd problems](#) on page 4.

Day 127

1. Take this [magnetic fields quiz](#).
2. Check your [answers](#) on page 4.
3. Record your score out of 6.

4. Watch the presentation on [electromagnetic induction](#).
5. Read page 5 on [electromagnetism](#). (You don't have to use the simulator today.)

Day 128 (optional materials: pencil, masking or other tape)

1. Use the [magnet and electromagnet simulator](#).
2. Read page six on [electromagnetic induction](#) and take notes.
3. Use the links on the page and read about [Michael Faraday](#) and [Lenz's Law](#).
4. You won't be watching the videos, though here is one on [Eddy Currents](#). I love his accent. It reminds me of our very good friends. On day 129 you will watch a video on the applications of electromagnetic induction.
5. You will be doing the simulators on another day.
6. Do this [question for thought](#). Explain your thoughts to someone.

Day 129

1. Watch the video on applications of [electromagnetic induction](#). Take notes.
2. Tell someone about what you learned.

Day 130

1. Read today. This is Michael Faraday's own lecture, in written form, on [magnetism and electricity](#).

Day 131*

1. *Complete this [lab](#) using the following simulators:
 - o [Faraday's law](#)
 - o [Faraday's electromagnetic lab](#)
2. Complete the worksheet but also write up your lab.
3. You might want to include this in your portfolio.

Day 132

1. Read page 7 and answer the questions on [motional emf](#).
2. Explain to someone what motional emf is.
3. Use the [review activities](#) and study for your test.

Day 133

1. This is the first part of your test, on [electromagnetic induction](#).
2. Write down your score out of five.
3. Take this [quiz](#).
4. Write down your score out of 20.
5. Answer the following two questions:
6. 5) A 150 turn solenoid carries a current of 12 A. The radius of the solenoid is 0.050 m and its length is 0.18 m. Determine the magnetic flux through the circular cross-sectional area at the center of the solenoid.6) A flat coil with radius 8.0 mm has 50 loops of wire. It is placed in a magnetic field $B = 0.30$ T in such a way that the maximum flux goes through it. Later, it is rotated in 0.02s to a position such that no flux goes through it. Find the average emf induced between the terminals of the coil.
7. Check your [answers](#). Give yourself two points for each correct answer.
8. Record your total score out 30. 5+20+4+1 point if you completed the test and wrote your scores without any cheating or lying. If you did lie, write down your true scores. If you did cheat, give yourself a zero! Cheaters never win!

Day 134

1. Today you will be doing review problems from the [mechanical and electricity sections](#).
2. Work for 30-40 minutes on problems. You need to get through at least one problem in each category.

Day 135

1. Today work for another 30-40 minutes on review problems. Start on this page with review of [heat energy](#).

2. Please review thermodynamics.
3. Please review fluids and pressure.
4. This is the end of the third quarter. See Day 45 if you need a reminder of how to find your grade. Remember to be saving written work for your portfolio.

Day 136(*)

1. (*) The fourth and final quarter starts today. Print out your new grading sheet or use the Excel version.
2. Copy the key terms.
3. Watch the presentation on wave basics. Take notes.
4. Read about electromagnetic spectrum and use the links on page 3.
 - NASA: Electromagnetic Spectrum
 - MicroWorlds
 - UT
 - Hyperphysics
 - Nigel Purchon
 - GCSE Physics

Day 137

1. Watch this class on electromagnetic waves.
2. Tell someone about his experiments.

Day 138

1. Watch this presentation on waves and the Doppler effect.
2. Sound is a Mechanical Wave — Read and check your understanding. Make sure you watch the animation.
3. Sound is a Longitudinal Wave — Make sure you watch the animation.

Day 139

1. Sound is a Pressure Wave — Read and check your understanding. Make sure you watch the animation.
2. Read this page on sound. Take notes.
3. In regular words, tell someone what this quote says. "Sound is a longitudinal or compressional mechanical wave. It needs a medium to propagate and the motion of its particles is parallel to the direction of the propagation of the energy of the wave." from page 4 <http://cms.gavirtualschool.org/Shared/Science/APPhysicsB/WavesandSound/index.html>
4. Just take a look at these sound animations.
5. Use the sound simulator.

Day 140

1. Use the following websites (as listed on page 4) to complete this sounds and waves activity. (not the websites on the handout)
 - Kettering EDU: Wave Motion Questions 1-11
 - Kettering EDU: Doppler Effect Questions 12-21
 - Kettering EDU: Reflection Questions 22-33
 - Kettering EDU: Superposition Questions 34-38
2. Score up to 35 points for completion.

Day 141

1. Read page 5 about the pitch of sound. The links on the page are found separately below.
2. Read about pitch and frequency. Try the activities and question on the page.
3. Read about infrasonic sound.
4. Read about ultrasonic sound.

Day 142

1. Read about sound intensity and check your understanding.

2. Complete this page on [sound intensity](#). Use the chart and answer the questions. The H is for Help/Hint. The Arrow gives the answer.
3. Read this ACT practice section on [sound intensity](#). Check your [answers](#).

Day 143

1. Read page 6 on the [speed of sound](#) up to the short video you will not be watching.
2. Use the following links on the page:
 - [speed of sound calculator](#)
 - Read about the [speed of sound](#) and check your understanding.
 - Explain to someone [what \$a\$ equals](#).
3. Look at these [sound photographs](#).

Day 144

1. Watch this interesting video on [sound waves](#).
2. Answer the following questions from the video. Why are two ears better than one? What is the difference in the sound between the two rooms he played in and what caused the difference?
3. Complete [sound problems 1-6](#). Use the solution guides as needed.

Day 145

1. Read about the [Doppler effect](#) on page 6. Use the physics classroom link from the page, also linked below.
2. Read about it in the [physics classroom](#) and check your understanding.
3. Take a look at these [Doppler effect animations](#).
4. Check out this [sonic boom video](#).
5. Complete [problems 8-13](#). Use the solution guides if needed.

Day 146

1. Use the [Doppler Effect simulator](#) from page 6 and complete the web inquiry.
2. Complete the [respond](#) section using links in the research section. Use the other pages as needed. login: easypeasy allinone
3. Check your [answers](#).
4. Record your score out of 24.

Day 147

1. Read on [standing waves](#).
2. Read page 7 on [standing waves](#) and take notes. Don't use the links on the page yet.
3. Use the [standing longitudinal waves simulator](#).
4. Write a paragraph discussing the [pipe organ](#).

Day 148

1. Try the ACT test prep question on the "[sound of music](#)."
2. Check your [answers](#).
3. Read about [standing waves](#).
4. Read about [harmonics](#) and check your understanding.

Day 149

1. Read about [open-air columns](#) and check your understanding.
2. Read about [closed-air columns](#) and check your understanding.
3. There is a test on sound waves on Day 150. It will test conceptual understanding, not mathematics.

Day 150(*)

1. (*) Complete these worksheets for your sound test.
 - nature of sound [waves](#)
 - properties of [sound waves](#)
 - [Doppler effect](#)

2. Check your answers, 1 point each, and record out of 25. (potential for extra credit)

Day 151*

1. Copy the key terms.
2. *Complete the properties of light worksheet using the sites listed on the printed page.
3. Record your score out of 15.

Day 152

1. Watch this presentation on reflection and refraction.
2. Read page 2 on reflection until the next presentation. Take notes. Write down the formulas.
3. Watch the presentation on mirrors.
4. Finish reading page 2 up to the Discovery video which we will not be using. Take notes.
5. Copy the “math of image formation” formulas down. Now write them with words as an English sentence.
6. Explain to someone the rules for the mirror equations. Don’t read them. Explain them with regular words.

Day 153***

1. Watch this video on optics.
2. *Print and complete this note taking guide while you watch.
3. *Print and complete the mirror lab sheet when directed to.
4. *Print and complete the ray diagrams, “problem set one”. You can refer to this page for help.
1. *Complete this reflection lab. Page 11 holds the links you will need. (also copied below from GAVS)
 - Definitions: Reflection Definition
 - Simulation #1: Reflection Angles
 - Simulation #2: OMIT
 - Simulation #3: Concave Mirror
 - Simulation #4: Concave Mirror – Virtual Image
 - Simulation #5: Convex Mirror
- Record a score of 25, 5 points for each completed section of the lab.

Day 154

1. Read page 4 about reflection and refraction. (Don’t worry about the video.)
2. Use the simulators on the page.
 - bending light
 - refraction simulation
 - reflection and refraction light waves simulator
3. Explain to someone what you are looking at.
4. Read about Snell’s law.

Day 155*

1. Watch this video on lenses.
2. Complete this note-taking guide while you watch.
3. Complete the problem sets and lab as directed. Problem sets: one two three

Day 156

1. Read about the anatomy of a lens.
2. Read page 5 about lenses.
3. Watch this presentation on converging lenses (and the second part). Now, watch this first video on diverging lenses (and the second part).
4. Use the simulator on the page. Explain what you are looking at.

Day 157

1. Solve these mirrors and lens problems. Do two problems from each set. There are 8 sets of questions. 2 for concave, 2 for convex, 4 under "General Optics 4," all found on the side menu to the left. Keep track of your score.
2. Record your score out of 15. (potential for extra credit)

Day 158

1. Watch this presentation on interference and diffraction.
2. Read page 6 on thin film interference.
3. Copy the equations in the middle of the page, BUT also either write out that whole thing in plain English or tell what it says to someone. "Since...Then..." etc.
4. Play with soap bubbles.
5. Read this ACT prep passage and answer the questions about cell phone dangers.
6. Check your answers.

Day 159

1. Try Young's two-slit experiment.
2. Read about diffraction on page 7. Remember to read equations with REAL WORDS.
3. Stop at the quiz.
4. Complete five diffraction problems.
5. Record your score out of 4.
6. Complete the ACT practice questions related to refraction.
7. Check your answers.

Day 160*

1. Read the rest of page 7 on single-slit diffraction and use the link and the diffraction simulators on the page.
2. *Print this lab and complete the introduction and part 5—You may need to be creative to make this work in your circumstances.
3. Use the simulator on wave interference to get familiar with it. This is what the lab is based on. You can begin today if you like. You will finish tomorrow.
4. You might want to include this in your portfolio.

Day 161

1. Complete the wave interference lab from Day 160. (Do parts 1 and 2. Read through the rest.)
2. Record your score. Start with 30 point for completing it. Take off 1 point for any skipped answers.

Day 162

1. Read page 8 about polarization. Take notes. Stop at color.
2. Follow the directions on the page and use the links.
 - filters
 - Brewster's law
 - scattering
 - optically active
 - Read about polarization and check your understanding.

Day 163*

1. Watch the video on color.
2. **Use the two note taking guides as you watch. One Two

Day 164

1. Read the rest of page 8 about color.
2. Read the pages on color addition and color subtraction and check your understanding.

Day 165

1. Complete the page 12 as review.

2. Read through the [timeline](#) on page 9 by clicking on each date.
3. Try the first two [problems](#). You will be doing more of these on your test.
4. Try the first two [problems](#). You will be doing more of these on your test.

Day 166

1. Test day: Complete [numbers 3-8](#). Show your work.
2. Also complete [numbers 3-8](#). Show your work.
3. Check your answers and score two points for each problem: one point for the answer and one point for showing your work.
4. Record your score out of 20. (potential for extra credit)

Day 167

1. Copy [key terms](#).
2. Watch this presentation on the [photoelectric effect](#).
3. Read page 2 on the [photoelectric effect](#) up to the simulators. Ignore the videos. Make sure you read equations with words.
4. Watch this video on the [photoelectric effect](#). (This is on youtube. Make sure you have safe mode on at the bottom of the screen.)

Day 168*

1. Print and complete pages 1-4 of this [*lab](#) based on the [photoelectric simulator](#).
2. Check your [answers](#). Scroll.
3. Record your score out of 20. (1 point each for a problem or a part like a, b, c etc. 25 total, potential for extra credit)

Day 169

1. Complete [page 5](#) of the lab packet.
2. Check your [answers](#).
3. Record your score out of 4.
4. Watch this presentation on [atomic energy levels](#).
5. Read page 3 on the [atomic model](#). Take notes. Don't worry about the links yet.
6. When it talks about the gold foil experiment it compares it to [BBs](#) being shot at a [tennis net](#).
7. Use the following simulation.
 - o [Models of the hydrogen atom](#)

Day 170

1. Complete this [lab](#) on Bohr model. Follow the directions for page 1 and complete (or recreate and fill in) the table on page 2.
2. Use the given links.
 - o With the first link choose Chemistry Topics, then Atoms and Molecules..., then [atomic emission spectra...](#)
 - o [Bohr Model Applet](#)
 - o [University of Oregon Atomic Emission Spectra](#)
 - o [Walter Fendt Bohr Model](#)
3. Then you will follow the instructions at the end of page 2 of the [lab](#) and construct the Balmer series for the hydrogen atom using the given [link](#).
4. Record your score of 20 for completing the lab and following all of the directions.

Day 171

1. Take this [Bohr model quiz](#).
2. Record your score. All bonus points!
3. Let's go back to [Young's experiment](#). Read and then click on next and continue.

4. What does duality mean? (especially look at number 4)
5. Watch this presentation on wave particle duality (part 2).
6. Watch the first 16 minutes of this video from MIT on wave-particle duality with a little history.

Day 172

1. Watch this presentation on nuclear reactions.
2. Watch this half-life decay animation on page 4.
3. Read about alpha decay.
4. Read about beta decay.
5. Use the simulators on page 5, links also below. Explain to someone what you are looking at.
 - alpha decay
 - beta decay
 - radioactive decay series

Day 173*

1. Watch this video on nuclear science.
2. *Use this note-taking guide.

Day 174

1. Watch this presentation on mass energy equivalence.
2. Read page 6 and use the following link from the page as well as the simulator.
 - the curve of binding energy
 - nuclear fission
3. Take the fusion and fission quiz.
4. Record your score.

Day 175

1. Complete the crossword puzzle review on page 8.
2. Go to the amusement park.
3. Read about the AP exam.
4. Go on...read below.

Day 175-179

1. On 180 you will be taking a final exam, a big test on all that you have learned. You have five days to review the material and to write up one final lab.
2. To review go through your notes and especially through the tests and the review pages from the different units.
3. To complete your lab, you will use your lab directions from the beginning of the course. Choose one physics concept, create a question and lab to test it. It can be simple like this lab, but it must be complete.

Day 180

1. Turn in your lab if you haven't already. It should be scored by your lab rubric. Record your score out of 30.
2. Take your final. You can use your equation sheet and a calculator.
3. Score your final.
4. Record your score out of 100.
5. Congratulations on a huge accomplishment!
6. If you are planning on taking the AP exam. You'll find study help below.
7. Please take the polls below. Answer honestly to help others choose the best courses for themselves.

Figure your course grade. Enter on your fourth quarter grading sheet your total score for each quarter. Divide by the total score from all four quarters. That can be your grade, but I also think you can award up to half of the grade for completing the daily assignments. Then you would take the grade you just calculated, divide it in half and add it

to 50, or whatever grade you deem appropriate for completing the readings, watching videos, etc... Example of the scoring calculation: (the numbers aren't from the physics course)

- four quarters total: $126 + 115 + 110 + 233 = 584$
- dividing by total possible $584 / 669 = .87 * 100 = 87\%$
- dividing in half for being worth half the grade: 44%
- 100% completion of daily assignments, readings, homework, etc.
- Half of that 100% for being worth half of the final grade: 50%
- Final grade would be: $50 + 44 = 94\%$, A

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I found Physics to be...

easy just about right hard extremely hard

Vote [View ResultsPollDaddy.com](#)

About how much time I spent each day on Physics

20 minutes 30 minutes 40 minutes 1 hour +

Vote [View ResultsPollDaddy.com](#)

If you plan on taking the AP exam, take a practice test and go over your mistakes. Take another part of an AP test and go over your mistakes. Retake the first test and go over your mistakes. Go over your mistakes. Retake the second exam and go over your mistakes. Look for a third...

Here is a good place for review if you need it.