

Science Assignments

- **Reason for Assignments:** There are many ways to explore and exhibit understanding and communication of physics. These assignments are designed to provide you with lots of choice, so that this course fits your needs and interests better. You are encouraged to suggest modifications to the suggested assignments or propose completely different ones.
- **Marking Scheme:** The explore/understand part is worth 20 (10 marks x 2). It should take about two hours to complete. An assignment that is **Complete, Correct, Clear and Concise** will get 8/10. To get a mark of 9 or 10, your work needs to be of very high quality or demonstrate going beyond the instructions and showing initiative and creativity. An additional 5 marks will be allotted to presentation/format. Hand in your best work looking its best. Refer to the ‘How to Do Science’ book for what is expected in the various formats.
TOTAL MARKS = 25. (20 application + 5 communication)
- **Individual or Partner:** You may do an assignment with a partner, but only if you work together and equally hard. Your science marks must be within 10%. You must work with a different partner each time unless you have special permission. Check with me first.
- **References:** Assignments must provide research notes and A.P.A. references. If someone helps you with your work, include them in your references (primary reference). Refer to the “How to Do Science” booklet for details on format. Your plan and research notes are due BEFORE the project and are marked separately as an inquiry mark.
- **Jargon:** Avoid using terms that you did not know before doing this assignment, unless they are essential. If you feel that they are essential, explain what they mean the first time that they appear. There should not be more than a few of these words.
- **Run-on Sentences:** Break these into short sentences containing one idea.
- **Comma Splices:** Do not join 2 full and complete sentences with a comma. Use a period to separate. Use a semi-colon if two sentences are closely related.
- **Unnecessary words:** Read your work and remove all words that are not necessary. (concise)
- **Read Slowly and Out Loud:** You will catch lots of errors in grammar and clarity.
- **Images:** Assignments may not include any copied diagrams or photos. Make your own diagrams and cite the original. Any image included should be referred to in the writing just before or after the image. Images can be drawn with the simple tools in MS Word and should be labelled. If you feel you simply ‘must’ use a found image, clear it with me first.
- **Submission:** The assignments should be shared as a Google Doc in your science folder. They can also be submitted by hand. Please do NOT email.

Due Date: Research notes/plan /5

Due Date: final project /25

Waves

Medical / Biological

- Do a radio interview (from the back of the room) or a TV interview (front of the room or recorded) that announces a new medical breakthrough: cavitron ultrasonic surgical aspirators (CUSA). What does this technology do, how does it work and why it is preferred over traditional surgery?

Creative

- Create a simple musical instrument upon which you can play 'Mary Had a Little Lamb'. May I suggest that air columns are the easiest method. Be able to play one chorus of the song in class on your instrument. Also hand in your research notes which explain your experimental process, the math you needed (you will need calculations), designs and design changes.

History / Biography

- Historically there was a great debate about whether light was a wave or a particle. Create an illustrated timeline outlining the key historical breakthroughs.
- Traditionally, where are tsunamis likely to occur? Why? Create an info-poster showing where in the world do tsunamis occur most often. Your poster is also to educate: Why? How to we warn people and limit damage?

Career

- Research a career in sound technology (or another wave-related field). Report your findings in an illustrated flowchart. Include personal interests you should have, where you need to go to study (how long, cost etc.), who might hire you, what you will do in your job ad wha you can expect as a salary. Anything else you can think of? (MyBlueprint would be a good source here ;)

Experimental

- Design and conduct an experiment determining what factors affect the frequency of a longitudinal wave. (I have some equipment in class – see me). Write up your findings in a formal lab report.