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 **C**omplete, **C**orrect, **C**lear and **C**oncise 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 <u>not</u> 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

Kinematics / Motion

Medical / Biological

- Fighter pilots and astronauts wear g-suits. What are they, why are they necessary and how do they work? Create a physical infoposter to demonstrate what you have learned.

- Create a slide show with 5-7 examples of how we have safety equipment to keep athletes safe as they travel at high speeds. Briefly explain how each method works to protect athlete and minimize injury. Your slide show should maximize visuals and oral explanation while minimize text.

Creative

- Migration → Show how 'tags' are used to monitor the migration / movement patterns. Pick one specific land or water animal to focus on. Briefly explain orally to the class how this tag works. (You may have one simple visual here). Create a map (to show us) that outlines one animal's 'story'.

- Create a rollercoaster that allows a marble or other small round object to navigate for at least 4 seconds. You must release it and let it go without touching it again. Keep a engineer/inventing journal that documents your process as you create and fix 'problems' along the way. Date your entries and include sketches. Calculate its average speed and its average velocity.

History / Biography

- The first time a human broke the sound barrier it was an historic event. Find about this time. Conduct a radio (performed at back of class) or TV interview (done as a skit or videotaped) enacting an interview with a key person from this time. You will cover the relevant details as you interview. Ask the relevant questions: who, where, when, why, how etc..??

Career

- Research a career in a motion related field.(aerospace engineer, NASCAR driver…) 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 and whay 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 that tests reaction time. Please get my approval before you spend lots of time on this project. (I am the healthy and safety board). Start by asking a testable question. This can be begin with: which group has faster reaction times…….. or ……..?