

**Introduction**

Physics is pretty much the base science upon which all others are built. It is the study of matter and energy and its motion through space and time. Chemistry is basically just the physics of certain things (compounds and molecules), and biology is pretty much just the chemistry of certain things (biological molecules).

**General Class Format**

\* Be aware of the class website: [www.tritonchem.net](http://www.tritonchem.net)

\* There is not much there for physics right now, but it will expand over the course of the year.

\* I will often ask that assignments be completed in Google Docs or Google Classroom.

\* *If reliable internet or computer access is a problem for you, let me know right away and we will deal with it.*

\* As much as possible, we will be spending time performing experiments and drawing conclusions. There will usually be ungraded practice worksheets before any graded work, but some topics may have graded assignments right off the bat. Quizzes and tests will come as we finish chapters, and as natural breaks in topics are reached during chapters. They will be announced well in advance to give adequate preparation time.

\* Physics is a math-based science. There will be math. None of it is harder than basic algebra and some sine/cosine type stuff, but it can be difficult to apply it. We will focus first and foremost on the *ideas*, and then use the math to help describe them. You will have formula sheets available for use at basically all times, but they are useless unless you understand the ideas.

**Grading Policy**

\* Grades are based off of total points earned divided by total points available; no complicated “10% of this, 15% of that, spin the wheel of fate, and divide by the third Wednesday's date” formulas.

\* There are a series of “basic skills” for the quarter that will be posted to the class website and also in your Aspen. You will be evaluated on each of these skills on a 1-4 scale as follows:

- 1 - Have not yet demonstrated meaningful progress toward the skill
- 2 - Have not yet met the standard, but have shown progress
- 3 - Have generally met the standard, but with some remaining difficulties
- 4 - Mastery of the skill.

*(note: the exact list may change during the quarter depending on the pace of the class)*

Each of these will be pre-assessed midway through the unit. These are temporary grades that won't count toward your average—don't freak out about them!—and will be replaced with higher grades as you demonstrate progress.

\* Each unit will also have an assessment on your ability to use these skills towards higher-level problems. These are more difficult, and it is typical to score lower on these than you may be used to for grades. It is helpful to think of your combined score for the whole unit—you're just getting the easy and hard questions separately.

\* There will typically be some assorted other grades throughout the quarter. Approximate ranges are:

- |                                      |                                      |
|--------------------------------------|--------------------------------------|
| Lab Reports: 30-40 points            | Lab Questions: 5-10 points           |
| Homework (rare): 5-10 points         | Google Forms: ~2 points              |
| Assorted classroom stuff: 3-5 points | Lab Performance: +/- 1 as applicable |

\* Extra credit is *extra*--for going above and beyond what is required for the class. It is not *replacement* credit. If you are struggling with the basics in class, that is where you need to spend your time. That said, if you would like to demonstrate that you are meeting the standards in an alternate way, you are welcome to run it by me.

\* Late work will always be accepted free of penalty for a one day grace period, then reduced by 10% per day up to 50%. Homework videos and other time-sensitive assignments may not be submitted for credit late.

\* You may retake any quiz within two weeks of the day it is returned, to be averaged with the original grade. This must be done on your own time, and arranged ahead of time with me. It will NOT be the same quiz again, but will cover the same material.

**Seriously: don't do this. →**



### **Classroom Expectations**

1. There will typically be something to do posted on the board or in the front of the class when you arrive. Be on time and get started right away please.
2. There is a power strip with some empty spaces and some chargers in the back of the room. That's the only place I want to see your phone unless we're using it for something.
3. Be considerate of me and of your fellow students. This is high school; you know what that means by now.
4. **Be safe.** There are things in the lab that can kill or maim you. Responsibility for safety starts with you (see the safety contract). Triton is looking to make 2018-2019 a zero-maiming year.
5. Help each other out. I am here to help and always happy to answer questions, but often the person next to you also knows the answer.
6. **Use your brain!** It's big, lumpy, gray, and pretty much our only evolutionary advantage. We're basically walking corn dogs for wolves without it. Chemistry is very hard to learn by rote memorization; understanding comes from engaging all those neurons and asking lots of questions.
7. Ask questions. The book has at least a few factually incorrect statements in it. I will make some errors during the year. Don't believe everything you read. If something doesn't make sense, *ask*.
8. You are welcome to use your phone *as a tool* during class, when appropriate. You know what that means.
9. **Try stuff.** There are problems I don't know how to solve just by looking at them. There is always something useful you can try. A wrong answer you worked out by yourself is worth way more than a copied right one.

**Order of Topics:** we will proceed in the order given on the class website:

Unit 1: Forces

Unit 1a: Circular Motion

Unit 2: Mechanical Energy

Unit 3: Heat

Unit 4: Waves

Unit 5: Electromagnetism

Unit 5a: EM radiation

### **TWO FACTS**

1. Without reviewing, you forget more than 50% of what you've learned within 24 hours. Studying now is better than studying right before the test.
2. Writing notes by hand dramatically improves learning, even if you never actually study those notes. Interestingly, this does not occur when typing notes.