

## Syllabus

### 10<sup>th</sup> Grade Chemistry 2015–2016 School Year

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#### Objectives:

1. Students will be able to demonstrate proficiency in scientific communication (asking questions, performing experiments, and forming conclusions) both verbally and in writing.
2. Students will be able to demonstrate organization and time management by successfully completing high-quality work in a timely manner.
3. Students will be able to communicate an understanding of important chemical principles to an external community.
4. Students will be able to work collaboratively with peers and maintain accountability for individual work.

#### Course Description:

##### Essential Questions:

There will be two main themes that we will explore throughout this year in our study of chemistry.

1. What is the nature of human exploration of the universe, and how we use science to learn about worlds we can't touch?
2. How is chemistry integral to our understanding of human interactions with the environment?

##### In Detail:

1. How does the nature of science help us learn about the world around us?
2. What is the nature of matter? How do we know? Where does it come from?
3. How are nuclear chemistry and energy intertwined?
4. How do chemicals react? How does this play out in our lives?
5. Why do complicated chemical systems persist, and how do they change over time?
6. How does the speed of chemical reactions explain the speed of our ecosystem?
7. What types of reactions are critical to living beings? How do humans capitalize

on these molecules?

## My Philosophy:

My belief is that chemistry is an essential part of a well-rounded education. This is not a confirmation bias resulting from my decision to earn degrees in chemistry, but an understanding that the abstract thinking required by a chemistry class is critical part of living and working in an increasingly complex world. I believe that every student has the capability to succeed in a chemistry classroom and as a result I expect excellence from every student. **This is not a one way street!** As a student and parent, you should expect that I will do everything in my power to give you the tools and opportunities so that you can succeed. Everyone requires a different strategy to be challenged and find success, and communication is the key to seeing this happen!

## Classroom Expectations

### Rules:

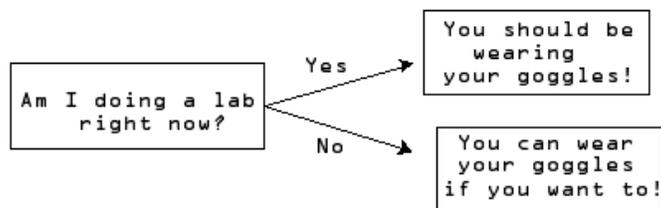
There is only one rule for my class: **Respect.**

1. Respect yourself and your learning.
2. Respect your peers.
3. Respect school staff.
4. Respect your school and community.

We are all part of a community of learners, and learning can't occur unless everyone feels like they are in a safe environment. To maintain a safe, academic environment, we will be striving for discourse and behavior at a more professional level than you would have with your friends on the weekend.

### Norms:

1. One Voice: During discussions, we will respect the voice of the person speaking.
2. Choice Words: When interacting with our peers, we will strive for respectful and constructive language. Disagreements will and should occur, but we will always be hard on the content and soft on the people, and always use evidence to support our claims.
3. No Food Zone: Sorry! Chemistry is fun, but many chemicals can cause serious harm if consumed. Although careful hygiene will be practiced, always assume tables have things you wouldn't want in your body.
4. Follow School Attire and Conduct: Students should wear proper clothing, closed toed shoes, follow the rules for cell phones/music players, etc.
5. Be Safe: We will always wear safety goggles whenever chemicals are being used. Inappropriate behavior or failure to wear goggles during this time will immediately remove you from the experiment to work on an alternate assignment. When you are working in a research lab as an adult, you can make judgements, but our protocol will be simple, and is in the flow chart below:



### Expectations:

1. I expect you to be prepared for class every day, on time, with all materials.
2. I expect you to be a contributing member of our community.
3. I expect you to take advantage of your resources and opportunities.
4. I expect you to try every day to be a better learner.

### Suggested Materials

The Constitution of the State of California requires that we provide a public education to you free of charge. Subject to certain exceptions, your right to a free public education means that we cannot require you or your family to purchase materials, supplies, equipment or uniforms for any school activity.

Many families have been asking what supplies their child may need during this school year. Below, I have a recommended list of supplies that your child may bring to school. Please note that if your child does not bring the recommended supplies, the school will provide the supplies for him/her. If you have any questions/comments about this, please contact me, or Isaac Jones, the school director. Thanks.

1. Bound composition notebook: you will record all your work throughout the year in this. Notes, labs, anything that will help you succeed.
2. Scientific Calculator: Useful for doing calculations!
3. Pens AND Pencils: In your notebook you will be recording everything in pen. For other assignments pencil is OK.

### Assignment Categories:

- 1) **Projects and Presentations** – The bulk of the work in the class is built around your projects and subsequent presentation. Details of the grading will vary by project, but will always incorporate the timely delivery of your final product, your effort in the process of producing the project, and your individual role in creation of the project.
- 2) **Classwork, Experiments, and Homework** – In creating our final products, there will be frequent and varied types of classwork to assist in your learning goals. This will include laboratory experiments, digital simulations, mini-projects, and practice problems. Though nearly everything will be designed for completion in class, there will be occasions where outside work is needed to finish something up. Your classwork will be assessed on your safe, thoughtful, participation in the activity and a demonstration of full effort through careful record keeping in your Lab Notebook.

- 3) **Reports** – Certain experiments will include a formal written report to be submitted. This will follow typical conventions of scientific writing and will indicate your ability to communicate your results and conclusions in writing. These will be assessed on adherence to proper scientific discourse, the clear discussion and presentation of data, and the formation of thorough, detailed conclusions.
- 4) **Quizzes** – These will be used so that I can assess your understanding of the finer details of what we are learning. All quizzes can be taken again for a better grade after visiting my office hours or indicating to me your study efforts. My goal is for every student to earn 100% on all quizzes.
- 5) **Digital Portfolio** – You should maintain an updated DP showcasing your work. This will be checked occasionally to make sure you are accurately and completely presenting your work to the world.

Grading Scale:

The grading scale and breakdown by assignment category are below. A 70% is the passing grade for the course.

Percentage	Grade
> 90%	A
80–89.99%	B
70–79.99%	C

Category	Percentage
Projects and Presentations	40%
Classwork and Homework	25%
Reports	15%
Quizzes	10%
Digital Portfolio	10%

A note on group work: Though you will be doing nearly everything in this class as part of a group, your grade will be a reflection of YOUR individual efforts. If you feel like the work of your group mates is harming your ability to learn, please talk with me privately and we can work to make sure everyone is getting the most out of their time in class.

Absent/Late Work:

Learning is a social process, so it is important for you to be in class every day. Things happen for everyone, though, so if you are absent for whatever reason: It is YOUR responsibility to talk with me before or after class so that I can get you the materials needed for you to make up the learning you missed out on.

Due dates are hard deadlines, and all assignments must be submitted at the beginning of class UNLESS otherwise indicated. Late classwork will be accepted and assessed for proficiency (ie. Your maximum grade will be 70%). Late projects will NOT be accepted. In the real world, the deadline is the deadline, so start practicing now.

### Makeup Work/Retakes:

Learning is a process, and everyone takes a different path to achievement. I believe that it is never too late to learn. Therefore, all assignments EXCEPT projects can be redone for a better grade at any time during the semester. There will be no penalties for this – I just want you to learn the material.

Retakes on projects will not be allowed – your project is your final product, and so it is your responsibility to make it high quality before submission. Companies that release a failing product don't get to re-release it later after improving it and still get a top score, and so that will be the standard here.

(You might be wondering about why late work is penalized but makeup work isn't. It's simple: late work indicates a failure to meet deadlines, which is not acceptable. Getting a poor grade on a quiz or assignment just indicates that you need more time to learn the material, and I won't punish people who take their learning into their own hands.)

### Extra Challenges (or “Achievements”)

I will occasionally present extra challenging questions for the “thrill seekers” out there. Though these will almost never come with extra credit, they do win you accolades and a general good feeling of a job well done, and so I encourage all to give them a shot!

### Academic Dishonesty

If the student is caught cheating the penalties entail receiving an automatic zero. Your parents will be notified of the indiscretion. If there is a second incident, an academic integrity contract will be set up through the Dean of Students.

There are no retakes for these assignments.

### Homework Policy

I will not be giving out homework assignments as part of a paper-treadmill. Homework is intended to reinforce ideas covered in class and prepare you for the next activity. Though these may occasionally be scored by your peers, my concern is that you have put your best effort into this class, and my scoring will reflect this.

### Helpful Resources and Reading:

We do not use a textbook for this class. However, for those that find it helpful to have a book, here are some options:

- Find one at a used book store. You can typically find older editions of textbooks for less than 10 dollars at the book store or online. The chemistry covered by a textbook hasn't changed much in the last 40 years, so get

- something affordable!
- Use an online textbook. This one is intended for introductory college classes, but has some great resources.  
<http://www.chem1.com/acad/webtext/virtualtextbook.html>.
  - Ask me via email and I can arrange to have one provided to you, though it may take a few days.

### The Last Word:

Chemistry is an exciting and important branch of science that weaves through physics, biology, the environment, astronomy, psychology, and more. It is the study of matter, and everything in our lives is some type of matter. My hope is that you will learn to appreciate the beauty inherent in every part of the world around us.

Chemistry is also a challenging topic for many people. That said, EVERYONE can be successful at it, provided the work is put into the process.

My job is to help you connect with and explore this wonderful world of the microscopic in ways that will challenge you and push you to be a better learner. If there is a way that I am failing at this, I encourage you to let me know (be kind and constructive like for all critiques!) sooner than later, so I can provide you with the best chemistry experience possible.