**PURPOSE:**

The purpose of Pre-AP Chemistry is to provide students access to a college level chemistry course in order to prepare them for success in the AP classroom or in a subsequent college chemistry course. This course is structured around the six big ideas articulated in the AP Chemistry curriculum framework provided by the College Board. (chemistry is chemistry, ya’ll!)

Big Idea 1: Structure of matter

Big Idea 2: Properties of matter-characteristics, states, and forces of attraction

Big Idea 3: Chemical reactions

Big Idea 4: Rates of chemical reactions

Big Idea 5: Thermodynamics

Big Idea 6: Equilibrium

This course will meet five times a week with alternating lunch periods available for laboratory and problem solving sessions. Laboratories are a vital part of the mission of this course, and a minimum of 25% of our classroom time is spent completing hands-on experiments. Students will perform the labs in small groups but are each responsible for their own lab reports. There will be an emphasis on conducting guided inquiry labs. Time will be given in class for lab design and for proper analysis and communication of results. The students will complete 16 guided inquiry labs during this course. The students will use various methods, including but not limited toVernier data probes to collect data and have access to laptops to work on graphs and reports.

**The Lab Notebook:**

A specific format will be given to the student for each lab. Students must follow that format and label all sections very clearly. Labs not completed during the class-lunch double block must be finished before/after school by appointment. Students must inform me of impending absences so that we can ensure that they have the best opportunity to execute the lab in a timely manner. Each student is expected to have a bound 100 page carbonless duplicate lab notebook in which to record their labs. The students are informed that this is a record of their work in this course, and that their lab reports should be composed in a manner that could be read and understood by a future college professor that asks for documentation of the course. Each lab report is divided into two sections: pre-lab work and post-lab work.

*Pre-Lab Work:*

Pre-lab work is to be completed prior to the assigned lab date. Their work is checked as they enter class. If they have not finished the requisite pre-lab information, then they will not be permitted to participate in the lab. Pre-lab work consists of the following:

1. Title

The title should be descriptive. For example, “pH Titration Lab” is a descriptive title and “Experiment 5” is not a descriptive title.

2. Date

This is the date the student performed the experiment.

3. Purpose

A purpose is a statement summarizing the “point” of the lab.

4. Procedure Outline

Students need to write an outline of the procedure. They should use bulleted statements or outline format to make it easy to read. If a student is doing a guided inquiry lab, they may be required to write a full procedure that they develop.

5. Pre-Lab Questions

Students may be given some questions to answer before the lab is done depending on their familiarity with the lab material. They will need to either rewrite the question or incorporate the question in the answer.

6. Data Tables

Students will need to create any data tables or charts necessary for data collection in the lab.

*During the Lab*

7. Data

Students need to record all their data directly in their lab notebook. They are NOT to be recording data on their separate lab sheet. They need to label all data clearly and always include proper units of measurement. Students should underline, use capital letters, or use any device they choose to help organize this section well. They should space things out neatly and clearly.

*Post-Lab Work*

8. Calculations and Graphs

Students should show how calculations are carried out. Graphs need to be titled, axes need to be labeled, and units need to be shown on the axis. To receive credit for any graphs, they must be scaled in a legible manner. It is acceptable for a student to create a graph in Microsoft Excel and paste this into their lab notebook, as many universities recommend using Excel to graph, run best fit lines, and to obtain chi-square tests.

9. Conclusions

This will vary from lab to lab. Students will usually be given direction as to what to write, but it is expected that all conclusions will be well thought out and well written.

10. Error Analysis and Post-Lab Questions

Students are expected to contemplate any errors made during the lab and discuss how these errors may have affected the resulting data. The students are rewarded for their thought and detail in the examination of these potential problems. Post-lab questions are often assigned to check for student understanding and for AP Test preparation. These questions often deal with theory, laboratory calculations, and how specific errors would affect the data collected/calculations.

**Supplies**

Students will need something to **write with** and something to **write on**. Students will be required to have internet access (this can be accomplished in the computer labs before or after school or during lunches). The class website is [www.sciencedonewright.weebly.com](http://www.sciencedonewright.weebly.com) . The website contains additional resources, videos and links to aid in their pursuit of knowledge. It is *highly* recommended they visit it often. They will use the website for digital submissions. Students might also find it useful to utilize the “evernote” live binder system.