

Dear Parent/Guardian and Student,

Welcome to PreAP Chemistry! Enclosed in this packet you will find information about the course. Also, included is a summer assignment due upon return to school. A list of 50 elements, their names and symbols are to be memorized. There will be a quiz the 2nd day of classes.

Chemistry is a difficult course for many students, since this is an honors college preparatory course it will be even more challenging. It is fast paced and rigorous and it is important students do their homework assignments and readings on a daily basis. Chemistry is a problem solving based science involving a great deal of math. The student must be willing to put the time and effort required to succeed in PreAP Chemistry.

If you have any questions, please feel free to contact me at the following email: Pszpila@kahoks.org. I will be working at school throughout the summer and will check my emails periodically and get back with you.

I look forward to working with you.

Patricia Szpila
Amy Reich

Pre-AP Chemistry Syllabus

1. Overview of Course

This chemistry course covers the following concepts: matter, atoms, molecules, ions, chemical formulas and equations, mole calculations, aqueous solutions, solutions, stoichiometry, electron structure of atoms, properties of the periodic table, and concepts of bonding.

2. Philosophy

PreAP Chemistry is a very rigorous course that will provide students with the fundamental concepts of chemistry.

Students will be involved in laboratory experiments and must use appropriate safety precautions which will be covered at the beginning of the school year. Students will be expected to read, complete homework and laboratory assignments, and write laboratory assignments.

The textbook is a college level chemistry book. Students should be able to read and comprehend at this level. Students will be given a schedule of readings and assignments.

Prerequisite for Pre AP Chemistry

- Strong math skills
- Completed one year of Pre AP Algebra or CP Algebra with a B or better (Paced Algebra or Pre-Algebra does not count as Algebra)
- GPA over 3.25 or recommendation by a science or math teacher.

3. Resources of the course

Text: General Chemistry Hill/Petrucci/McCreary/Perry Pearson Prentice Hall

Students will be provided handouts for laboratories they will perform. Also, any additional readings will be provided.

Students need to provide the following for class:

- 3-ring binder: preferably a 2-3 inch binder
- Scientific calculator
- Mead notebook (for journaling)
- Highlighter would be useful

4. Grading Policy

Grading policy follows CHS handbook.

90-100 A 80-89 B 70-79 C 60-69 D 59 and below F

A portfolio is required for Pre AP and AP courses (as per Board of Education). Grades will count as follows: Portfolio 20%; homework /daily work 10%; Labs and quizzes 30%; tests 40%

Exams will administered the end of each semester and will count as 20% of semester grade. This is in accordance with Collinsville Board Policy and explained in the CHS handbook.

5. Discipline Policy

- All CHS rules listed in handbook will apply and are expected to be followed.
- Late work will not be accepted and recorded as a zero. The only late work accepted will be from students who have an excused absence.
- Students are expected to be on time to class, if late have a signed pass.
- Behavior is a serious issue during chemistry class. Students will be doing labs and working with dangerous materials—any fooling around will lead to pulling the student from the lab and giving them a zero for that lab. I take behavior very seriously, this is how students get injured.
- Students are required to make up all work missed when they have an excused absence. It is their responsibility to find out what was missed and set up a time and day to make up work/labs. Try to avoid absences if at all possible. I realize we all get sick and have to miss.
- Cheating is a very serious offense. Copying other students work, plagerism, stealing other student's work or materials belonging to the teacher is a serious offense. Consequences include receiving zeros for those offenses.

Pre AP Chemistry Course Topics

1. The Basics
 - a. Classifications and properties of matter
 - b. Measurement (units, uncertainty, and dimensional analysis)
 - c. Atoms, molecules, and the Periodic Table
 - d. Inorganic Nomenclature
2. Electron Structure and Periodicity
 - a. Electron energy levels and quantum mechanics
 - b. Electron configurations and the Periodic Table
 - c. Periodic relationships: atomic radii, ionization energy, electron affinity, and oxidation state
3. Basic concepts of chemical bonding and molecular geometry
 - a. Lewis dot structures
 - b. Bond polarity and molecule polarity
 - c. VSEPR theory
4. Chemical Reactions
 - a. Chemical reactions and patterns of reactivity
 - b. Electrolytes
 - c. Precipitation reactions
 - d. Acid-base reactions
 - e. Redox reactions
5. Stoichiometry
 - a. Atomic and molecular mass and the mole
 - b. Percent composition, formulas, and combustion analysis
 - c. Reaction stoichiometry
 - d. Limiting reactants
 - e. Solution concentration: M
 - f. Solution stoichiometry (titration)
6. Thermochemistry
 - a. Energy and its conservation (1st Law of Thermodynamics)
 - b. q , w , ΔE
 - c. Calorimetry
 - d. Hess's Law
 - e. ΔH° ; ΔH_f°

You will be responsible for learning the names and symbols for these elements. Note that the chemical symbols for an element is composed of one or two letters. The first letter is always capitalized and the second letter if present is always lower case. Symbols must be printed, not written in cursive handwriting. The spelling of the element names MUST be correct. Flash cards would be a great way of learning these elements and symbols.

A quiz will be given over these elements the second day of classes.

Name	Symbol	Name	Symbol	Name	Symbol
Aluminum	Al	Copper	Cu	Oxygen	O
Antimony	Sb	Fluorine	F	Phosphorus	P
Argon	Ar	Gold	Au	Platinum	Pt
Arsenic	As	Helium	He	Potassium	K
Barium	Ba	Hydrogen	H	Radon	Rn
Beryllium	Be	Iodine	I	Rubidium	Rb
Bismuth	Bi	Iron	Fe	Selenium	Se
Boron	B	Krypton	Kr	Silicon	Si
Bromine	Br	Lead	Pb	Silver	Ag
Cadmium	Cd	Lithium	Li	Sodium	Na
Calcium	Ca	Magnesium	Mg	Strontium	Sr
Carbon	C	Manganese	Mn	Sulfur	S
Cesium	Cs	Mercury	Hg	Tin	Sn
Chlorine	Cl	Neon	Ne	Titanium	Ti
Chromium	Cr	Nickel	Ni	Tungsten	W
Cobalt	Co	nitrogen	N	uranium	U
		Xenon	Xe	Zinc	Zn

Name: _____ Due 1st day of classes

Math Skills Inventory: Solve each of the following problems. Please show work where indicated. This allows me to see where you are making your mistakes.

1. $12(84 - 5) - (3 + 54) =$ _____
2. Estimate the value of $6,302 / 63$: a)1; b)10; c)100; d)1,000
3. What is the value of $43,254 / 8$, rounded to the nearest whole number? a)5,000; b)5,400; c)5,406; d)5,407
4. Roberta takes \$58 with her on a shopping trip to the mall. She spends \$18 on new shoes and another \$6 on lunch. How much money does she have left after these purchases? Show work.
5. The drivers at G & G trucking must report the mileage on their trucks each week. The mileage reading of Ed's vehicle was 20,907 at the beginning of one week, and 21,053 at the end of the same week. What was the total number of miles driven by Ed that week? Show work.
6. What is the value of the expression $5(4^0)$? _____
7. $(4.1 \times 10^{-2})(3.8 \times 10^4) =$ _____
8. $0.31 + 0.673 =$ _____
9. Hal wants to buy a used car to take to college. The car costs \$4999.95. For graduation, he receives gifts of \$200.00, \$157.75, and \$80.50. His little brother gave him \$1.73 and he saved \$4332.58 from his summer job. How much more money does he need? Show work.
10. If you take recyclables to whichever recycler will pay the most, what is the greatest amount of money you could get for 2,200 pounds of aluminum, 1,400 pounds of cardboard, 3,100 pounds of glass, and 900 pounds of plastic? Show work.

Recycler	Aluminum	Cardboard	Glass	Plastic
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X	0.06/pound	0.03/pound	0.08/pound	0.02/pound
Y	0.07/pound	0.04/pound	0.07/pound	0.03/pound

11. 60% of 390 = _____
12. What is 0.2% of 20? _____
13. Approximately how much money is a 20% tip on a restaurant bill of \$16? Show work.
14. Ten students from the 250-student senior class at Jefferson High School have received full college scholarships. What percentage of the senior class received full college scholarships? Show work.
15. If $2x = 20$, then x is _____. Show work
16. If $3n + 4n = 42$, then n is? Show work
17. The product of 16 and one-half a number is 136. Find the number. Show work.
18. Which of the following is an example of the Associative Property of Multiplication?
a) $a(b + c) = ab + ac$; b) $ab = ba$; c) $a(bc) = (ab)c$; d) $ax1 = a$
19. Two saline solutions are mixed. Twelve liters of 5% solution are mixed with 4 liters of 4% solution. What percent saline is the final solution? Show work.
20. A grain elevator operator wants to mix two batches of corn with a resultant mix of 54 pounds per bushel. If he uses 20 bushels of 56 pounds per bushel corn, which of the following expressions gives the amount of 50 pounds per bushel corn needed? Show work.

21. Jeff was 10 minutes early for class. Dee came in four minutes after Mae, who was half as early as Jeff. How many minutes early was Dee? Show work.
22. Fire departments commonly use the following formula to find out how far from a wall to place the base of a ladder: $(\text{Length of ladder} / 5 \text{ feet}) + 2 \text{ feet} = \text{distance from the wall}$. Using this formula, if the base of a ladder is placed 10 feet from a wall, how tall is the ladder? Show work.
23. A rain barrel contained 4 gallons of water just before a thunderstorm. It rained steadily for 8 hours, filling the barrel at a rate of 6 gallons per day. How many gallons of water did the barrel have after the thunderstorm? Show work.
24. The perimeter of a rectangle is 148 feet. Its two longest sides add up to 86 feet. What is the length of each of its two shortest sides? Show work.
25. How many feet of ribbon will a theatrical company need to tie off a performance area that is 34 feet long and 20 feet wide? Show work.