2021-2022

The Salisbury School

Advanced Placement Chemistry Syllabus

Course Description This AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first year of college. For most students, the course enables them to undertake, as a freshman, second year work in the chemistry sequence at their institution or to register in courses in other fields where general chemistry is a prerequisite. This course is structured around the 6 Big Ideas articulated in the AP Chemistry curriculum framework provided by the College Board. A special emphasis will be placed on the seven science practices which capture important aspects of the work that scientists engage in, with learning objectives that combine content with inquiry and reasoning skills. AP Chemistry is **open to all students** that have completed a year of Honors Chemistry who wish to take part in a rigorous and academically challenging course.

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

You will need your laptop and calculator every day!

Text
Chemistry: The Central Science, 12th Edition AP* Edition ©2012
Theodore L. Brown, H. Eugene LeMay, Jr., Bruce E. Bursten, Catherine J. Murphy with contributions from Patrick Woodward

Princeton Review 2020 – will be provided

Laboratory Manual Resources
Jack Randall*, Advanced Chemistry with Vernier*
College board, *AP Chemistry Guided-Inquiry Experiments: Applying the Science Practices Teacher Manual*
Flynn Scientific Lab Manuals with individual Labs

ALL INFORMATION WILL BE POSTED ON THE WEB AT drduick.com
Username: tssapchem password: student2021

To develop the requisite intellectual and laboratory skills, students have a minimum of 225 minutes. Unfortunately our schedule only allows us 185 minutes of instruction (2- 70 minute sessions and one 45 minute session = 185 minutes) in a five day cycle. Students may be asked to forfeit their Flex time and Academic Support time to accommodate this difference. These out of class session will be announced, Mondays flex time is directly after class and will repetitively be impacted with laboratory sessions. In addition, students will have to spend at least five hours a week studying outside of class.

Laboratory Program

The laboratory activities are comprised of "hands-on" labs so the students can accomplish multiple trials and can use statistical analysis to derive conclusions. Students are required to have a bound student lab notebook which will be used as their lab portfolio. For each lab students complete a lab report that includes: replicated data tables and answers to the post lab discussion. These items are collected and graded as part of their lab grade. Reports will be compiled on google docs as per instructions given in class. During a lab session, the instructor (Dr. Duick) ***must sign*** off on your recorded data for the class meeting (direct signature in the lab notebook). This method of data verification is mandatory for your lab notebook portfolio.

Every lab assignment must have a lab report including the following in order to receive maximum credit:

For the Lab Notebook:

1. To prevent bleed through, you ***must*** use pencil in your laboratory notebook
2. First page must have:
   - Date experiment performed
   - Title of experiment
   - Table of Contents
   - Total number of class periods used conducting the experiment
3. Pages should all be numbered
   - Do not skip pages use the front and back (except behind the title page, where the lab handout will be stapled.
4. Lab handouts should be stapled into wire bound lab notebook (two staples, will be shown in class) behind the title page. Should be accomplished at the end of the lab fpr ease of conducting and recording data during the experiment.
5. Data recording
   - All data must be recorded **directly in lab notebook** before being compiled in google docs, Do ***not*** fill out the data tables in the handouts, they are examples for how you would construct a table! You will construct your own tables in the Lab Notebook.
   - Graphs (with axis labeled) must be first compiled **directly in lab notebook** before producing a polished version in google docs

Report Criteria

- **Introduction**
  - Title
  - Purpose -State the problem/ questions clearly substantiate the question and explain the reason for the investigation?
  - Theory (Refer to the handout stapled in the book)
- **Materials and Methods**
  - Procedure (Refer to the handout stapled in the book). Labs must have noted any procedural changes. Give explicit details of methods and give precise quantitative directions. Make sure modifications stated in lab report
- **Results**
  - Written results section
- **Discussion and Conclusion**
  - Explain all calculations which produced data in data table
  - Answers to questions written in complete sentences with question stated in answer (Refer to Handout stapled in lab notebook)
  - Explanation of data and results

- All calculations using data

- **Figures Data Tables**
  - Data must have numbers with descriptive units in correct significant figures

**Students always work in groups of 2-3.*

Flynn scientific labs used during this course are correlated to the AP Chemistry Big Ideas:

The new AP Chemistry curriculum framework is organized around six Big Ideas. These big ideas provide the structure for the course and exam. Each Big Idea includes a set of Learning Objectives. These Learning Objectives are based on the Enduring Understanding and Essential Knowledge statements, which both serve to identify content knowledge and thinking skills that students should be able to demonstrate. There is also a greater emphasis on Science Practices, such as using mathematics skills, data collection and analysis, inquiry investigations, and using models and representations to communicate and solve scientific problems. In this class we will be conducting the following experiments using Flynn science lab kits.

Big Idea 1—Atoms and Elements

The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrange- ments of atoms. These atoms retain their identity in chemical reactions.

• AP7642, Analysis of Food Dyes in Beverages (Investigation 1)

• AP7643, Percent Copper in Brass (Investigation 2)

• AP7660, Gravimetric Analysis of Calcium and Hard Water (Investigation 3)

• AP7645, Acidity of Beverages (Investigation 4)

Big Idea 2—Structure and Properties of Matter

Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or mol- ecules and the forces between them.

• AP7661, Separation of a Dye Mixture Using Chromatography (Investigation 5)

• AP7664, Qualitative Analysis and Chemical Bonding (Investigation 6)

Big Idea 3—Chemical Reactions

Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.

• AP7653, Green Chemistry Analysis of a Mixture (Investigation 7)

• AP7647, Analysis of Hydrogen Peroxide (Investigation 8)

• AP7662, Separating a Synthetic Pain Relief Mixture (Investigation 9)

Big Idea 4—Kinetics

Rates of chemical reactions are determined by details of the molecular collisions.

• AP7648, Rate of Decomposition of Calcium Carbonate (Investigation 10)

• AP7644, Kinetics of Crystal Violet Fading (Investigation 11)

Big Idea 5—Thermodynamics

The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.

• AP7654, Designing a Hand Warmer (Investigation 12)

Big Idea 6—Equilibrium

Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.

• AP7659, Applications of LeChâtelier's Principle (Investigation 13)

• AP7656, Acid–Base Titrations (Investigation 14)

• AP7665, Buffers in Household Products (Investigation 15)

• AP7663, Properties of Buffer Solutions (Investigation 16)

Expectations & Assessments

Virtual Submissions for Classwork, Homework, Assessments, Test, Quizzes, Exams and Lab Reports

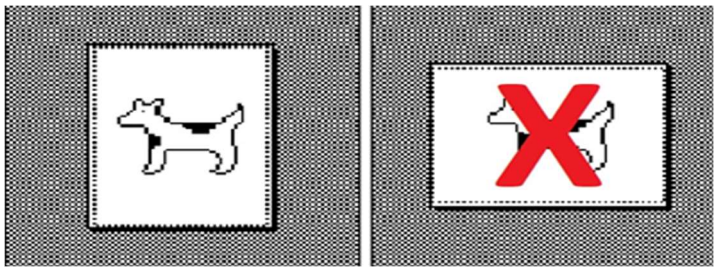
In order to reduce the risk of COVID-19 spreading between students and faculty, a virtual submission will be sometimes used this year. Assignments and due dates will be posted on the school website, and some assignments and assessments will be submitted via Google Classroom.

Classwork & Homework:

1) Assignments and due dates will be posted on the school website.
2) A corresponding repository folder will be created in Google Classroom for the assignment.
3) Students will complete their assignments in a sewn bound unlined composition notebook in pencil with the following information in the heading
    a) The assignment **Number** and **Name**
    b) Your **First Name**
    c) The **Date**

4) When completing any math operations, you must
    a) **Write** the formula
    b) Show how you **solve** the problem
    a) All work/steps are to be done in a **vertical fashion**, rather than horizontal
    c) **Box** your final answer and include **proper units**

5) Completed homework will be photographed in ***portrait layout*** (see image) and inserted into a **Google Document.** It will then be uploaded to the correct Google Classroom folder.



6) Homework assignments **may** be counted for completion **or** accuracy depending on the assignment and the teacher.
7) No Late assignments will be accepted, except if I gave prior approval (before the deadline).

Test Quizzes and Assessments:

Quizzes will be handwritten and in class (unless given via Google Classroom for an assessment of the material). Quizzes are given everyday. Tests and Exams will be hand written and in class (unless, because of circumstance, they are given via Google Classroom).

If given via Google Classroom:

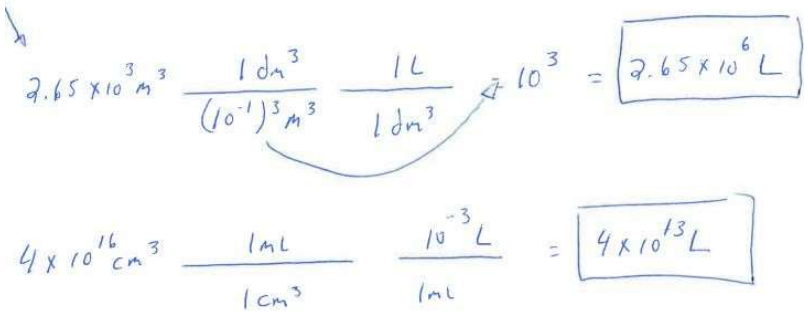
1) A timed quiz will be posted in google classroom.
2) The format of the questions can be multiple choice or handwritten free response.
3) When doing multiple choice questions, the quiz will be automatically graded yet not released until I review the results of the quiz.
4) A handwritten free response will require you composing your answer in your composition journal, photographing it, and submitting via a google document (as explained in the Classwork and Homework section).

25% Classwork/Homework

In an effort to be green, you are responsible to write all homework and lab work in your bounded journal. To get full credit you must follow the following rules posted on most assignments listed on the website. ***EVEN*** if these instructions are not given on the assignment, they are ***implied*** for every assignment and must be followed. This is needed for notebook organization. (example given)

-1 Date / Title
-1 Boxed Answers
-1 Sig Fig / Sci Notation
-50% Incomplete / Math
GRADE:

When working any math problem you MUST show all of your math and box your final answer or it is considered incomplete (70% or less) (example given below).



Science Labs

Periodically there will be partner labs required from you. All lab material must be treated with respect and as if toxic. Students are required to wear goggles at all times during the lab. Failure to do so will result in disciplinary action. It is mandatory that all students clean their work space after each lab session to prevent contaminating fellow students. The main evaluation components of a lab are assessments in the form of a quiz or formal lab report. Your notes for the lab (written in your bound notebook) could also be used as an assessment.

Lab Reports

You must use google docs and your school issued gmail account for all lab reports. Scientific writing is very different than writing in other disciplines. We will actually violate "the rules" for concise sentence writing by making the object the subject, using past tense and very limited use of pronouns. This shift in writing may be difficult for some, however I make it a priority to demystify the situation and help you become a proficient science writer. So, periodically there will be individual or group lab reports required from you. I will give you specific guidelines for how these should be constructed and I will periodically workshop with you on how to improve your scientific writing. You may be required to present your findings to the class during the year. These exercises will be instrumental in increasing your scientific communication skills.

Mini Lab reports: On many activities, you will write mini lab reports. An outline will be provided for you on the Google Classroom. All mini lab *reports must be handwritten in your journal*, photographed and submitted through the Google classroom.

Online:

This year I'm going to try my best to provide instructional videos online at ***drduick.com*** (click on The Salisbury School logo). These videos will be very helpful if you (or me for that matter) need to be out for any reason during the year. They will be numbered and used as a reference point for homework/classwork assignments. However, they should not be used for completing tests and quizzes.

Pivot Interactives:

There will be online lab simulations with a multitude of questions associated with the activities. A seat in the classroom account will be given to you for completing the lab assignments. Although the classwork/homework will be posted on the school portal and started in class with me, it will be the responsibility of the student to perform the labs and answer the questions independently. https://www.pivotinteractives.com/

75% Tests/Quizzes

Exams will be a combination of selective response questions and brief constructive responses. These exams will focus on the new material and problems from previous topics. A topic study guide will be available online several days prior to the exam for your review. A final exam will be given for your first and second trimester.

A short quiz will be given out periodically to see where you stand with the material. These can be given in any form (e.g. essay, draw a diagram, selective response, etc). They do not need to be announced.

Some assessments will be in the form of Flinnprep online quizzes. These will be given throughout the year. Points will be deducted for failed attempts to pass, so go over the material thoroughly before attempting the quiz.

In April, heavy emphasis will be placed on dissecting and answering FRQ from previous AP Chemistry exams. It is assumed that given homework problems should be attempted without the aid of the internet.

Late Work Policy

Points will be deducted for late submissions unless evidence for extenuating circumstances is given prior to submission deadline.

- For daily assignments there is a 50% deduction for a late assignments
- If a long term assignment is late (an assignment that has been posted on the calendar for over a week), there will be a 50% deduction and a parental notification.

THE AP EXAM: Monday May 2nd, 2022:

Advanced Placement courses are academically enhanced courses designed to mirror the rigor of college level work. Students will notify instructors regarding their intent to take the AP exam by the end of the drop/add period, September 24. It is important that teachers take time to properly evaluate student placement in a given class by this time to help students make a decision about whether or not they are suited for the class and the exam. AP exam results are not calculated as part of the student's final course grade. Students electing not to take the AP exam will be required to take a course-based exam that will become part of their overall grade. The College Board has set the price of exams for the 2022 administration at $96 per exam. The priority deadline to order exams is October 4, and the final ordering deadline is November 15. Changes to the order can be made until March 15, but will result in a $40 fee. (This fee won't apply to exams for courses that start after the November 15 exam ordering deadline, for example, second-semester courses, and exams for transfer students). If a student is not able to test during the regularly scheduled exam dates (May 2–6, May 9–13), that student may be charged a $40 fee to test during the late

testing exam dates (May 17–20). The business office will send invoices in the spring and payments will be due by May 20.

SEPTEMBER Curriculum Content Map

Big Idea 4: Rates of chemical reactions are determined by details of the molecular collisions.
Learning Objectives: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9
Textbook Chapter(s): 14
Unit # and Topics
11. Kinetics ¢ Rates relationship to collisions ¢ Reaction Mechanisms ¢ Activation energy ¢ Nature of Reactants and Interfacial Surface Area

- Temperature and Pressure effects on Rates
- Catalyst – Homogeneous and Heterogeneous
- Potential Energy Diagrams- Review
- Activated Complex and Intermediates
- Arrhenius Equation
- Maxwell- Boltzman Diagram
- Average Rate
- Rates relationship to Stoichiometry
- Graphical determination of Instantaneous Rate
- Rate Laws
- Determination of Rate Laws
- Determination of Mechanisms
- Order of Reactions
- Calculations based on Order

October Curriculum Content Map

Big Idea 6: Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.
Learning Objectives: 5.16, 5.17, 5.18, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.21, 6.22, 6.23, 6.24, 6.25
Textbook Chapter(s): 15
Unit # and Topics (9 Sessions)
12. Equilibrium - • Reversible processes and Reactions • Types of systems • Kinetics relationship to Equilibrium • Equilibrium Expressions • Equilibrium Constants • LeChatelier's Principle • Equilibrium Stresses • Equilibrium Calculations • Molar Solubility • Common Ion Effects • Reaction Quotients

November December Curriculum Content Map

Big Idea 6: Any bond or intermolecular attraction that can be formed can be broken. These two processes are in a dynamic competition, sensitive to initial conditions and external perturbations.
Learning Objectives: 1.20, 3.7, 6.11, 6.12, 6.13, 6.14, 6.15, 6.16, 6.17, 6.18, 6.19, 6.20
Textbook Chapter(s): 16
Unit # and Topics
13. Acids, Bases and Salts-

- Dissociation versus Ionization
- Preparation of Acids, Bases and Salts
- Classification of Acids and Bases
- Bronsted- Lowry Theory of Acids and Bases
- Degree of Ionization
- Equilibrium Constants for Acids and Bases
- Weak Acids and Bases
- Binary acids versus Oxyacids
- Determination of Acid and Base properties based on structure
- Ionization of Water
- -pH and pOH
- Acid- Base Stoichiometry Problems- Review
- Ionization calculations of Weak Acids and Bases
- Henderson-Hasselbalch Equation
- Titration Calculations
- Indicators
- Types of Salts
- Dissociation of salts and Buffers

Review (holiday break)

Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.
Learning Objectives: 2.1, 3.1, 3.2, 3.8, 3.9, 3.10, 5.10
Textbook Chapter(s): 2, 3, 4
Unit # and Topics
6. Predicting Reactions- - Naming Compounds - Balancing Chemical Equations - Types of Chemical Equations - Types of Chemical Reactions - Predicting based on Stability - Predicting based on Type - Chemical reactivity and products of chemical reactions - Reaction types –Organic Functional Group Reactions, Acid-base reactions; concepts of Arrhenius, Brönsted-Lowry, and Lewis; coordination complexes; amphoterism, Precipitation reactions, Oxidation-reduction reactions, Oxidation number, The role of the electron in oxidation-reduction

Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.
Learning Objectives: 1.1, 1.2, 1.3, 1.4, 1.17, 1.18, 1.19, 3.4, 3.5, 3.6
Textbook Chapter(s): 3, 4,
Unit # and Topics
7. Measurement and Stoichiometry ¢ Law of Constant Composition and Calculations based on Law ¢ Using Moles to find a Quantity ¢ Stoichiometry ¢ Limiting Reagents ¢ Using Density ¢ Solution Terms ¢ Stoichiometry - Solutions

January Curriculum Content Map

Big Idea 5: The laws of thermodynamics describe the essential role of energy and explain and predict the direction of changes in matter.
Learning Objectives: 3.11, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.12, 5.13, 5.14
Textbook Chapter(s): Section 5, 19
Unit # and Topics
¢ Thermo chemistry- ¢ Introduction to thermodynamics ¢ Conservation of energy ¢ State Functions ¢ Potential Energy ¢ Kinetic Energy ¢ Calorimetry ¢ Heat of Fusion ¢ Heat of Vaporization ¢ Specific Heat ¢ Heat of Dilution ¢ Heat of Solution ¢ Hess's Law- direct and indirect ¢ Bond Dissociation Energies ¢ Gibbs Free Energy Equation

February Curriculum Content Map

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.
Learning Objectives: 2.3, 2.4, 2.5, 2.6, 2.12, 2.16, 2.22, 2.29, 2.31
Textbook Chapter(s): 10, 11
¢ Unit # and Topics
15. Gas , Liquids and Solids • Real Gases versus Ideal Gases • Ideal Gas Equation • Derivations based on Ideal Gas Equation • Gases collected Over Water • Kinetic Molecular Theory • Van Der Walls Equation • Molecular Speeds • Diffusion and Effusion • Molecular Theory related to Phase • Phase Changes • Entropy • Heating and Cooling Curves • Interphases • Pressure • Vapor Pressure • Boiling Point and Freezing Points • Vapor Pressure Curves • Phase Diagrams – Triple point, critical point • Energy change during phase changes • Viscosity • Surface Tension • Types of Solids and Crystal Structure

February Curriculum Content Map

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.
Learning Objectives: 1.16, 2.8, 2.8, 2.9
Textbook Chapter(s): 13
Unit # and Topics
10. Solutions – ¢ Types of Solutions ¢ Electrolytes ¢ Miscibility and Immiscibility ¢ Process of Dissolution ¢ Dissolution versus Ionization ¢ Solubility Terms ¢ Solubility Curves ¢ Henry's Law ¢ Concentration Terms – Molarity Molality, % , mole fractions ¢ Dilution Problems ¢ Stoichiometry Problems with Solutions- Review ¢ Raoult's Law ¢ Freezing and Boiling points of Solutions – Colligative Properties ¢ Van Hoff factor ¢ Osmosis ¢ Deviation from Raoult's Law ¢ Colloids

March Curriculum Content Map

Big Idea 3: Changes in matter involve the rearrangement and/or reorganization of atoms and/or the transfer of electrons.
Learning Objectives: 3.12, 3.13, 5.14, 5.15, 6.25
Textbook Chapter(s): 19, 20
Unit # and Topics

14. Electrochemistry and Thermodynamics –
    - Oxidation and Reduction
    - Substances gaining potential
    - Types of electrochemical cells
    - Voltaic cells
    - Cell Potentials
    - Concentration dependency of E
    - Nerst Equation
    - Cell potentials and Equilibrium
    - Metal Electrodes
    - Reference Electrodes
    - Indicator electrodes
    - Applications of Voltaic Cells
    - Electrolysis
    - Faraday's Law
    - Electrolytic Cells
    - Order of reduction
    - Applications of Electrolytic cells
    - Gibbs Free energy Equation (Free Work)
    - Relationship to Equilibrium and Q
    - Relationship to E

MARCH Curriculum Content Map (review)

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.
Learning Objectives: 2.7, 5.10
Textbook Chapter(s): 1
Unit # and Topics
Introduction to Chemistry 1. Scientific Method 2. Classification of Matter 3. Separation Science example Distillation and chromatography 4. Physical and Chemical Properties 5. Temperature and Density- Demos 6. Meet the Elements 7. Math Review, Significant Figures & Statistical Techniques 8. Dimensional Analysis and Proportions 9. Units of Measurement 10. Conversion of units 11. Dimensional Analysis 12. Uncertainty in Measurements and Significant Figures 13. Length and Volume 14. Mass and Weight 15. Density and Specific Gravity 16. Temperature and its Measurement

MARCH (early) Curriculum Content Map

Big Idea 1: The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.
Learning Objectives: 1.5, 1.6, 1.7, 1.8, 1.12, 1.13, 1.14
Textbook Chapter(s): 2, 6, 22.1-22.6
Unit # and Topics
2. Nuclear and Atomic Structure – ¢ Types of Subatomic Particles ¢ The Nucleus ¢ Mass Spectroscopy and Isotopes ¢ Stability of the Nucleus ¢ Atomic Structure ¢ Rutherford Experiment ¢ Cathode Ray Experiments ¢ Atomic Structure Terms ¢ Electromagnetic Radiation ¢ Quantization of Energy ¢ Photoelectric Effect ¢ PES data ¢ Bohr Atom ¢ Spectroscopy ¢ Orbital Model of Atom ¢ Aufbau Diagram ¢ Para magnetism ¢ Quantum Model

Big Idea 1: The chemical elements are fundamental building materials of matter, and all matter can be understood in terms of arrangements of atoms. These atoms retain their identity in chemical reactions.
Learning Objectives: 1.9, 1.10, 1.11, 2.14, 2.17, 2.19, 2.20, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28
Textbook Chapter(s): 7, 22, 23, 8.1-8.8
Unit # and Topics
3. Periodicity and Introduction to Bonding- ¢ Atomic Properties ¢ Periodic Law ¢ Elemental Properties ¢ Types of Bonds ¢ Metallic Bonding ¢ Properties of Group One ¢ Properties of Period Two ¢ Metals vs. Non Metals ¢ Multiple Oxidation States of Transition Metals ¢ Ionic Bonding

- Ionic Bonding and Potential Energy Diagrams
- Energy of Formation of Ionic Compounds
- Lattice energy

March (Late) Curriculum Content Map

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.
Learning Objectives: 2.11, 2.13, 2.18, 2.20, 2.21, 2.22, 2.29, 2.30, 2.31, 2.32, 5.9
Textbook Chapter(s): 8, 9, 11.7-11.8
Unit # and Topics
4. Covalent Bonding and Molecules - Types of Covalent Bonds - Nonpolar Covalent Bonds - Polar Covalent Bonds - Coordinate Covalent Bonds - Lewis Acids and Lewis Bases - Lewis Structures - Resonance - Hybridization - Molecular Geometry - Energy Effects on Molecules - Isomerism - Functional Groups - Interactions of Functional Groups - Classification of Molecules - Intermolecular Interaction - Dipole moments - Dielectric Constants - Types of Compounds - Properties of Metallic, Molecular, Macromolecular and Ionic Compounds

APRIL Curriculum Content Map

Big Idea 2: Chemical and physical properties of materials can be explained by the structure and the arrangement of atoms, ions, or molecules and the forces between them.
Learning Objectives: 1.15, 1.19, 2.10, 2.11, 3.3, 5.11
Textbook Chapter(s): 24, 12.6-12.7
Unit # and Topics (10 Sessions-)
5. Organic Chemistry - A. Properties and Bonding in Carbon Compounds - Introduction to organic chemistry: hydrocarbons and functional groups (structure, nomenclature, chemical properties). Physical and chemical properties of simple organic compounds

B. Hydrocarbons
1. Petroleum
2. Fractional Distillation
3. Cracking
4. Alkanes
5. Alkenes
6. Alkynes
7. Benzene Series
8. General Formulas
9. Structural Formulas
10. Saturated/unsaturated Compounds

C. Nomenclature
1. Alkyl Groups
2. IUPAC Nomenclature
3. Isomers

D. Other Organic Compounds
1. Alcohols
   - Primary, Secondary, and Tertiary Alcohols
   - Diols and Triols
2. Aldehydes
3. Ketones
4. Acids
5. Esters
6. Ethers
7. Amines
8. Polymers
   - Addition Polymerization
   - Condensation Polymerization
   - Natural Polymers
   - E. Organic Reactions

5pts Read this syllabus, and have this sheet signed and returned before the next class meeting time:

I have read the syllabus and understand the criteria by which I will be evaluated:

Student Signature:_____

Student Name (printed):_____

Student phone number, for texting homework updates

Parent Signature:_____

Parent Name (printed):_____

Parent Email