

Chem CP Year Review Book

1. Title cover "Chem CP Review" Book
2. Put team members' names, year and your period on inside cover page
3. Make page 2 your table of contents page for all 6 units
4. For each unit you must include drawings/diagrams/examples on blank side and answer unit questions/definitions on right side (lined side)

UNIT 1 (Atoms and Periodicity/ch. 2, 3, 11)

Presenting or displaying a periodic table, you must show and explain the following, showing examples:

1. How many elements are in the periodic table? How do we know how many protons, electrons and neutrons each element has?
2. What is an atomic number and atomic mass?
3. Which elements are nonmetals, metals and metalloids?
4. Show the states of matter of each element at room temperature.
5. What is an ion (cations, anions)? Show which elements have what charge according to their position on the periodic table (ex. Alkaline Earth metals are in group 2A so they have a 2+ charge).
6. What is an isotope?
7. Define and show the trends for electronegativity, atomic radius and ionization energy.

UNIT 2 (Chemical Bonding and Structure/ch. 4, 12)

Explain and show examples of:

1. Type I, II and III compound (labeling rules- ex. For type III, di means two, mono means one but can't be used for the cation).
2. Covalent bond (include Lewis dot structures and single and double bonds)
3. Ionic bond

4. Polyatomic ions
5. What does VSEPR stand for? Show three examples of VSEPR molecules.

UNIT 3 (Measurement and Moles/ch. 5, 6, 7, 9)

1. What is the Law of Conservation?
2. Set up and balance an equation that illustrates the law of conservation.
3. Show how to convert units using the step method. (ex. How you convert 50g to 50mg?)
4. Explain what a mole is and why we use them in Chemistry.
5. Show how to convert moles to grams or grams to moles with an example. (What you got, what you want).

UNIT 4 (Energy/ch. 10, 14)

1. Show the heat equation ($Q = m \times c \times \Delta t$) and explain each variable in it. Show an example using it.
2. Show/explain a phase change graph and tell what heat of fusion and vaporization is.

UNIT 5 (Gases, Solutions and Acid and Bases/ch. 13, 15, 16)

1. Show and explain Charles' Law, Boyle's Law, the Ideal Gas Law and Daltons' Law. Display an example of each.
2. What is a solvent, solute and solution? Describe and illustrate or demonstrate.
3. How do you find the mass percentage of a solute in a solvent? Show the formula and use an example.
4. What is the formula for Molarity? Show it and use an example
5. What is the formula for Dilution? Show it and use an example.
6. What is the Bronsted Lawry definition of an acid and a base? Explain and show an example.

7. Show how to get the pH and pOH of a substance by getting its' molarity and using your scientific calculator.

UNIT 6 (Equilibrium and Redox Reactions/ch. 17, 18)

1. What is Equilibrium? Given some concentrations or molarities of chemicals in an equation, show how to find the equilibrium constant using an equilibrium expression.
2. Show an exothermic and endothermic energy curve and explain what is happening.
3. Explain and demonstrate Le Chatelier's Principle.
4. What does redox reaction mean? Explain and show an example of reduction and oxidation in a chemical equation.