

AP Chemistry Unit 1: The Drowned Business Man

AP Chemistry Learning Objectives (College Board 2013):

1.1 The student can justify the observation that the ratio of the masses of the constituent elements in any pure sample of that compound is always identical on the basis of the atomic molecular theory.

(1.A) distinguish between physical and chemical properties

1.2 The student is able to select and apply mathematical routines to mass data to identify or infer the composition of pure substances and/or mixtures. [See SP 2.2; Essential knowledge 1.A.2]

Use significant figures, scientific notation, metric units, and dimensional analysis in calculations

Apply the concepts of accuracy and precision to discuss scientific data

1.3 The student is able to select and apply mathematical relationships to mass data in order to justify a claim regarding the identity and/or estimated purity of a substance. [See SP 2.2, 6.1; Essential knowledge 1.A.2]

1.15 The student can justify the selection of a particular type of spectroscopy to measure properties associated with vibrational or electronic motions of molecules. [See SP 4.1, 6.4; Essential knowledge 1.D.3]

1.16 The student can design and/or interpret the results of an experiment regarding the absorption of light to determine the concentration of an absorbing species in a solution. [See SP 4.2, 5.1; Essential knowledge 1.D.3]

identify safe laboratory practices

2.1 Students can predict properties of substances based on their chemical formulas, and provide explanations of their properties based on particle views. [See SP 6.4, 7.1; Essential knowledge components of 2.A–2.D]

2.3 The student is able to use aspects of particulate models (i.e., particle spacing, motion, and forces of attraction) to reason about observed differences between solid and liquid phases and among solid and liquid materials. [See SP 6.4, 7.1; Essential knowledge 2.A.1]

2.7 The student is able to explain how solutes can be separated by chromatography based on intermolecular interactions. [See SP 6.2; Essential knowledge 2.A.3]

2.8 The student can draw and/or interpret representations of solutions that show the interactions between the solute and solvent. [See SP 1.1, 1.2, 6.4; Essential knowledge 2.A.3]

2.9 The student is able to create or interpret representations that link the concept of molarity with particle views of solutions. [See SP 1.1, 1.4; Essential knowledge 2.A.3]