

Lab #	Title of Investigation	Course Unit	Criteria Tested	Topic #
1	Thickness of Aluminum Foil	Measurement + Data		1.1/1.2
2	Number of molecules in H ₂ O, Chalk, and Candy	Quantitative Chemistry		1.1
3	Percent Composition of MgO	Quantitative Chemistry		1.2
4	Formula of a hydrate, Epsom salt	Quantitative Chemistry	Planning	1.2
5	Empirical Formula of MgCl ₂	Quantitative Chemistry		1.2
6	Simulation of an Air Bag	States of Matter	Planning	1.4
7	Volume vs. Temperature Graph: Computer Analysis	States of Matter	DCP, ICT	1.4
8	% Sodium hydrogen carbonate in an Alka-Seltzer Tablet	States of Matter		1.2
9	Pressure required to pop popcorn	States of Matter	Planning	1.4
10	Mass Relationship in an equation: Aluminum and Copper (II) chloride dihydrate	Quantitative Chemistry	MS, DCP	1.3
11	Determination of Solubility of a Salt	Solution Chemistry / Acids and Bases	MS	1.5
12	Making a Solution	Solution Chemistry / Acids and Bases	MS	1.5
13	Dilution of a Solution	Solution Chemistry / Acids and Bases	MS	1.5
14	Determination of Volume of gas at STP: Mg + HCl	States of Matter	MS	1.4
15	Determination of Molar Volume from experimental Data	States of Matter		1.4
16	Estimation of concentration of a Solution using a spectroscope	Solution Chemistry / Acids and Bases	DCP	1.5
17	Double Displacement Reactions: Using Solubility Rules	Solution Chemistry / Acids and Bases		1.5
18	Using Solubility Graphs: Computer Analysis	Solution Chemistry / Acids and Bases	ICT	1.5
19	Gravimetric Analysis: Pb(NO ₃) ₂ (aq) + KI(aq)	Solution Chemistry / Acids and Bases	DCP, CE	1.5
20	Stoichiometry of a Reaction: Na ₂ CO ₃ + CaCl ₂	Solution Chemistry / Acids and Bases	Planning, Lab Quiz	1.5
21	Titration: Standardization of	Acids and Bases		18.4

	NaOH using HCl		
22	Observing the Hydrogen Spectrum	Atomic Structure	2.1
23, 24, 25	Qualitative Analysis: 3 hours		1.5
26	Electrolytes: Strong and Weak Acid-Base	Acids and Bases	8.3
27	Titration Curve for strong acid and strong base	Acids and Bases	8.3/18.4
28	Lab: Testing for Polarity of Compounds	Bonding and Atomic Structure	4.2
29	Lab Activity: Polarity of Molecules and IMFA's	Bonding and Atomic Structure	4.2 / 4.3
30	Testing the structure of Ionic, molecular covalent, Network and metallic substances	Bonding and Atomic Structure	Planning 4
31	Enthalpy of Ionic substances: Lattice Energy vs. Hydration Energy	Atomic Structure / Energetics	5.2 calculation of Δh / 4.1 ionic bond / 15.2 lattice enthalpy
32	Enthalpy of a reaction: Zn + CuSO ₄	Energetics	5.2
33	Hess's Law: NaOH + HCl	Energetics	5.3
34	Assignment: Molecules and Networks	Bonding and Atomic Structure	4.3
35	How Much Lab	Quantitative Chemistry	Planning
36	Enthalpy of a chemical reaction: Mg + HCl	Energetics	5.2
37	Paraffin Wax Lab	Energetics	Planning, CE 5.2
38	Lattice Energy	Energetics	ICT 15.2
39	Alcohols	Energetics	ICT 5.2
40	Comparison of Energies Physical/Chemical/Nuclear Charge	Energetics	
41	Icebergs / Lifesavers	Energetics	5.2
42	Maxwell-Boltzmann	Kinetics / Energetics	ICT
43	GROUP IV PROJECT (REFLECTION)		
44	Study of Reaction Rates: Clock Reaction: IO ₃ ⁻ & HSO ₃ ⁻	Kinetics	6.1
45	Factors that Affect the Rates of Reaction: MnO ₄ ⁻ & C ₂ O ₄ ²⁻	Kinetics	6.1
46	To determine Order of Reaction	Kinetics	6.1

47	Determination of Energy of Combustion for Alcohols	Kinetics / Energetics	5.2
48	Determining the activation energy of a reaction	Kinetics	6.2/16.3
49	Enthalpy of Combustion of Foods	Kinetics / Energetics	5.2
50	Lab Activity: Equilibrium Constant: NO ₂ + N ₂ O ₄	Equilibrium	7.1
51	Equilibrium Simulation (Aquaria +Cheerios)	Equilibrium	7.1
52	A Case Study of the Haber Process	Equilibrium	7.2
53	Le Chateliers Principle	Equilibrium	7.2
54	IA Lab I	Energetics	5.3
55	IA Lab II	Acids and Bases	8.3/18.1/18.4
56	Oxidation Numbers of MnO ₄ ⁻	Redox	9.1
57	Electrochemical Cells	Redox	9.3
58	Electrolysis of KI (aq)	Redox	9.4/19.2
59	Reactions of alkanes and alkenes	Organic	10.2/10.3
60	Hydrolysis of Halogeno alkanes	Organic	10.5

ICT