

Table of Contents

Front Matter	Page
Preface	iii
Acknowledgements	iii
Please Respect the License	iv
Process Skills	v
A Few Implementation Tips	v
Alignment with AP Chem CED, Learning Objectives, and Process Skills	vii

Activity	Activity Name	Teacher	Student
01	Forming an Argument	1	1
02	Mass Spectroscopy	11	9
03	Coulombic Attraction	21	17
04	Advanced Periodic Trends	33	25
05	Photoelectron Spectroscopy	47	37
06	Empirical Formulas	63	49
07	Formal Charge	73	57
08	Types of Bonds	85	65
09	Applications of Coulomb's Law	97	73
10	Alloys	109	83
11	Valence Shell Electron Pair Repulsion Theory (VSEPR Theory)	117	89
12	Polar and Nonpolar Molecules	127	97
13	London Dispersion Forces	137	105
14	Chromatography	149	115
15	Types of Solids	159	123
16	Maxwell-Boltzmann Distributions	171	131
17	Partial Pressures of Gases	185	141

18	Deviations from the Ideal Gas Law	197	151
19	Spectroscopy	209	161
20	Net Ionic Equations	219	169
21	Gravimetric Analysis	231	179
22	Oxidation and Reduction	245	189
23	Acids and Bases	253	195
24	Rate of Reaction	263	203
25	Graphical Determination of Rate Laws	273	211
26	Integrated Rate Laws	283	219
27	Method of Initial Rates	293	227
28	Reaction Mechanisms and Energy Diagrams	305	237
29	Calorimetry	317	245
30	Heat per Mole	329	255
31	Bond Enthalpies	337	261
32	Enthalpies of Formation	349	269
33	Solving Equilibrium Problems	361	277
34	Reaction Quotient	371	285
35	Common Ion Effect on Solubility	381	293
36	Titration Curves	389	299
37	Comparing Titration Curves	401	307
38	Weak/Strong Titration pH Calculations	411	315
39	Polyprotic Acids	423	325
40	Buffer Solutions	433	333
41	Strength of Acids and Bases	445	341
42	Protonated and Deprotonated	455	349
43	Free Energy	469	359
44	Gibbs Energy and Equilibrium	483	369
45	Nonstandard Cell Potential	497	381
46	Faraday's Law	509	389