Contents

	Getting Started: GOB Chemistry Insights	1
1	Experiment 1: Measurements in the Laboratory	9
2	Experiment 2: Density of Solids and Liquids	25
3	Experiment 3: States of Matter	37
4	Experiment 4: Investigating Mixtures	53
5	Experiment 5: Chemical Equations	67
6	Experiment 6: Chemical Changes: The Copper Cycle	83
7	Experiment 7: Gas Laws	99
8	Experiment 8: Empirical Formulae	119
9	Experiment 9: Concentration and Dilution	133
10	Experiment 10: pH, Acids, and Bases	149
11	Experiment 11: Buffers	169
12	Experiment 12: Titration	185
13	Experiment 13: Equilibrium and Rate in Chemical Reactions	199
14	Experiment 14: Urinalysis	219
15	Experiment 15: The Six-Bottle Problem: Qualitative Chemical Analysis	235
16	Experiment 16: The Specific Heat of a Solid	249
17	Experiment 17: Alcohols and Phenols	265
18	Experiment 18: Carboxylic Acids and Esters	285
19	Experiment 19: Amines, Amides, and Acetaminophen	299
20	Experiment 20: Carbohydrates	313
21	Experiment 21: Unknown Carbohydrates	333
22	Experiment 22: Lipids	347
23	Experiment 23: Amino Acids	361
24	Experiment 24: Lactase Enzyme Activity	379
25	Experiment 25: The Chemistry of Household Products (At-Home with AI)	399