## • Table of Contents

| Introduction—Please Read This First  | 1    |
|--|------|
| Investigation 1: Ammoniacal-Nitrogen in Fertilizer   | 4    |
| Investigation 2: Nitrate Determination in Soil Samples   | 8    |
| Investigation 3: Analysis of Raisin Bran   | . 13 |
| Investigation 4: Sub-Sampling Heterogeneous Solids   | . 14 |
| Investigation 5: Statistical Model of Sample Reduction   | . 17 |
| Investigation 6: Determination of the Concentration of Vitamin C in the Peel, Pulp, and Juice of an Orange | 19   |
| Investigation 7: Factors That Affect the Grinding Process  | 23   |
| Investigation 8: Percent Recovery and Sample Carryover in Grinding   | 27   |
| Investigation 9: Investigating Mixtures  | . 30 |
| Investigation 10: Effective Mixing   | . 32 |

