

CONTENTS

| | |
|--|-----|
| Introduction | vii |
| Chapter 1 | |
| Getting started with data | 1 |
| Case 1 School lunch count | 2 |
| Case 2 Do you like to eat soup? | 4 |
| Case 3 Do we need to count the dead people? | 8 |
| Chapter 2 | |
| Designing a data investigation: What do you want to find out?..... | 15 |
| Case 4 What are blue jeans? Milk with breakfast?..... | 17 |
| Case 5 Asking questions is hard to do | 21 |
| Case 6 What is in a question? | 24 |
| Chapter 3 | |
| Categorical data: Representing and describing the results..... | 27 |
| Case 7 Favorite colors: Where's the math? | 28 |
| Case 8 From people to circles and triangles | 31 |
| Case 9 It was easier when it was just yes or no..... | 38 |
| Case 10 Places we like to swim | 42 |
| Case 11 Is it Mummy's Curse or basketball? | 47 |
| Chapter 4 | |
| Numerical data: What do the numbers mean?..... | 51 |
| Case 12 How long have we lived here?..... | 53 |
| Case 13 How many people, how many teeth?..... | 57 |
| Case 14 What does the X mean? | 69 |
| Case 15 But the zero shouldn't be there!..... | 71 |
| Case 16 How many candies? | 73 |
| Chapter 5 | |
| Comparing data sets | 77 |
| Case 17 Imagine a new pair of mittens..... | 79 |
| Case 18 Questions bring more questions | 82 |
| Case 19 Bedtimes: What the data tell us..... | 85 |

Chapter 6

| | |
|--|-----|
| Average: Developing ideas about “middle” | 93 |
| Case 20 Average second graders..... | 95 |
| Case 21 The usual doesn’t have to be the middle | 98 |
| Case 22 Uncovering the concept of <i>average</i> | 103 |
| Case 23 Getting back to what the data tells us | 108 |
| Case 24 How many people in our families? | 116 |

Chapter 7

| | |
|---|-----|
| Average: Understanding the mean | 121 |
| Case 25 Blowing a foam cylinder: What’s fair? | 122 |
| Case 26 How tall is a typical fourth grader? | 126 |
| Case 27 Are fourth graders taller than third graders? | 130 |
| Case 28 Divide the average and conquer the mean | 136 |

Chapter 8

| | |
|--|-----|
| Highlights of related research | 141 |
| by Clifford Konold and Traci Higgins | |
| Section 1 Forming a statistical question | 142 |
| Section 2 Differentiating between the observed event and the data..... | 144 |
| Section 3 Creating and interpreting data displays | 146 |
| Section 4 Representing data values of zero | 154 |
| Section 5 Viewing data as an aggregate | 156 |
| Section 6 Summarizing data with averages..... | 158 |
| Section 7 Comparing groups..... | 163 |
| Section 8 Relating data back to the real situation | 166 |
| Conclusion..... | 168 |
| References | 169 |