## **Contents**

CD-ROM Contents	V
Using the Activities	Vi
Chart of Activities	ix
1: Building on Pre-algebra	
Measures of Center—Aircraft Efficiency	3
Spread and Shape—Dice	9
Box Plots—Insurance	15
Box Plots—Think Box	21
Histograms—Ontario Communities	27
Ratios—Surveys	33
Weighted Average—Swimmers	37
Proportions—Veterans	41
Dimensional Analysis—Fastest Animals	45
Proportions—Squirrel Population	49
2: Exploring Linear Equations	
Slope—Runners	57
Lines of Fit—Women's High Jump	63
Intercept Form—Hot Dogs	69
Point-Slope Form—Men's High Jump	73
Point-Slope Form—Life Expectancy	77
Linear Modeling—Dissolved Oxygen	81
Equation Solving—Cryptography	85
3: Solving Inequalities and Systems	
Inequalities—Strange Diet	91
Absolute Value—Radio Contact	95
Two-Variable Inequalities—The Quest	99
Linear Systems—The Road Trip	103
Systems Solving—High Jump Records	107
Elimination—Package Charges	111
4: Exploring Exponential Equations	
Exponential Growth—Interest	119
Exponential Relationships—Population Growth	125
Inverse Variation—Boyle's Law	131

	Exponents—Moore's Law	135
	Power Properties—Base <i>e</i>	141
	Power Properties—Radiation	145
5: Trar	nsforming Functions	
	Functions—Model Rockets	151
	Data Transformation—Quiz Scores	155
	Transformations—Animation	159
	Line Transformations—Elevator	163
	Parabola Transformations—Handshakes	167
	Parabola Transformations—Book Sales	171
6: Inve	estigating Higher-Degree Polynomials	
	General Form Quadratic—Escape Ramp	177
	Factored Form Quadratic—Gravity	181
	Vertex Form Quadratic—Protecting Wildflowers	185
	The Quadratic Formula	189
	Parabola—Solar Oven	191
	Binomial Products—Sales and Profits	195
	Binomial Expansion—Flipping Coins	199
	Common Factor—Acceleration	203
	Polynomial Factoring—Maximum Area	207
7: Sim	ulating Probability	
	Probability—Dice Games	213
	Probability—Euchre Deck	219
	Simulation—Stick or Switch	225
	Geometry by Probability—Monte Carlo Method	231

İ۷