

Table of Contents

Overview of Foundations for College

Mathematics 12	vii
Structure of the Teacher's Resource	ix
Program Philosophy	xii
Approaches to Teaching Mathematics	xiii
Instructional Practice	xiv
Literacy	xv
Cooperative Learning	xvi
Mental Mathematics	xix
Problem Solving	xxii
Mathematical Processes	xxiii
Technology	xxv
Assessment	xxvi
Intervention	xxix
Curriculum Correlation	xxxiii

Chapter 1 Measurement and Geometry 1

Chapter 1 Planning Chart	3
Chapter 1 Blackline Masters Checklist	4
Prerequisite Skills	5
1.1 Area	6
1.2 Volume	10
1.3 Surface Area	13
1.4 Optimize Perimeter and Area	16
1.5 Investigate Optimum Volume and Surface Area	20
1.6 Analyse Optimum Volume and Surface Area	22
Chapter 1 Review	25
Chapter 1 Practice Test	26
Task: Cost of Building Portable Classrooms	29

Chapter 2 Trigonometry 33

Chapter 2 Planning Chart	34
Chapter 2 Blackline Masters Checklist	35
Prerequisite Skills	36
2.1 Trigonometric Ratios With Acute Angles	37
2.2 Trigonometric Ratios With Obtuse Angles	40
2.3 Sine Law	43
2.4 Cosine Law	46
2.5 Applications of Trigonometry	50
Chapter 2 Review	53
Chapter 2 Practice Test	54
Chapters 1 and 2 Review	57
Task: Trigonometry and Careers	58
College Preparation Test	60

Chapter 3 Two-Variable Statistics 61

Chapter 3 Planning Chart	63
Chapter 3 Blackline Masters Checklist	64
Prerequisite Skills	65
3.1 Two-Variable Data Sets	66
3.2 Effective Surveys	69
3.3 Collect and Organize Data	73
3.4 The Line of Best Fit	71
3.5 Analysis and Conclusions	81
Chapter 3 Review	84
Chapter 3 Practice Test	85
Task: Fast as a Lightning Bolt	88

Chapter 4 Apply Data Management 91

Chapter 4 Planning Chart	93
Chapter 4 Blackline Masters Checklist	94
Prerequisite Skills	95
4.1 Statistical Measures	96
4.2 Statistical Indices	100
4.3 Interpret Statistics in the Media	104
4.4 Statistical Bias	108
4.5 Critical Analysis	111
Chapter 4 Review	114
Chapter 4 Practice Test	115
Chapters 3 and 4 Review	118
Task: Careers in Data Management	119
College Preparation Test	122

Chapter 5 Graphical Models 123

Chapter 5 Planning Chart	125
Chapter 5 Blackline Masters Checklist	126
Prerequisite Skills	127
5.1 Linear Models	128
5.2 Quadratic Models	132
5.3 Exponential Models	136
5.4 Analyse Graphical Models	141
5.5 Select a Mathematical Model	145
Chapter 5 Review	150
Chapter 5 Practice Test	151
Task: Real Life Regressions	154

Chapter 6 Algebraic Models	157
Chapter 6 Planning Chart	159
Chapter 6 Blackline Masters Checklist	160
Prerequisite Skills	161
6.1 Exponent Laws	162
6.2 Rational Exponents	167
6.3 Represent Exponential Expressions	172
6.4 Tools and Strategies to Solve Equations Involving Exponents	176
6.5 Construct and Apply Exponential Models	180
Chapter 6 Review	186
Chapter 6 Practice Test	187
Chapters 5 and 6 Review	190
Task: Careers in Mathematical Modelling	191
College Preparation Test	194
Chapter 7 Annuities and Mortgages	195
Chapter 7 Planning Chart	197
Chapter 7 Blackline Masters Checklist	198
Prerequisite Skills	199
7.1 Annuities	200
7.2 The Conditions of an Annuity	205
7.3 Mortgages and Amortization	208
7.4 The Conditions of a Mortgage	211
Chapter 7 Review	214
Chapter 7 Practice Test	215
Task: Registered Education Savings Plan	218
Chapter 8 Budgeting	221
Chapter 8 Planning Chart	223
Chapter 8 Blackline Masters Checklist	224
Prerequisite Skills	225
8.1 Savings Plans	226
8.2 The Cost of Renting a Home	229
8.3 The Cost of Owning a Home	233
8.4 Living Expenses	236
8.5 Case Studies	239
Chapter 8 Review	244
Chapter 8 Practice Test	245
Chapters 7 and 8 Review	248
Task: Careers Requiring Budgeting Skills	249
College Preparation Test	251
Chapters 1 to 8 Review	252

Blackline Masters

(Available on *Foundations for College Math 12: Teacher's Resource CD ROM*)

This package has generic masters, and generic assessment masters, along with chapter-specific worksheets, assessment tools, and technology masters.

Blackline Masters are provided in WORD and PDF format for the Prerequisite Skills pages, each numbered section of the text, and each Chapter Review. A Chapter Practice Test and a Chapter Test are provided for each chapter. Answers are included for all these extra questions.

The BLM package also includes rubrics for the Achievement Check questions, Chapter Problem Wrap-Ups, and the Tasks.

Generic Masters

- BLM G-1 Grid Paper
- BLM G-2 Placemat
- BLM G-3 Four Quadrant Grids

Generic Assessment Masters

- BLM A-1 Assessment Recording Sheet
- BLM A-2 Attitudes Assessment Checklist
- BLM A-3 Portfolio Checklist
- BLM A-4 Presentation Checklist
- BLM A-5 Problem Solving Checklist
- BLM A-6 Knowledge and Understanding
General Scoring Rubric
- BLM A-7 Thinking General Scoring Rubric
- BLM A-8 Application General Scoring Rubric
- BLM A-9 Communication General Scoring
Rubric
- BLM A-10 Observation General Scoring Rubric
- BLM A-11 Group Work Assessment Recording
Sheet
- BLM A-12 Group Work Assessment General
Scoring Rubric
- BLM A-13 Self-Assessment Recording Sheet
- BLM A-14 Self-Assessment Checklist
- BLM A-15 Teamwork Self Assessment
- BLM A-16 Assessing Work in Progress
- BLM A-17 Learning Skills Checklist
- BLM A-18 Opinion Piece Checklist
- BLM A-19 Report Checklist

Generic Technology Masters

- BLM T-1 Microsoft® *Excel*
- BLM T-2 *The Geometer's Sketchpad*® 3
- BLM T-3 *The Geometer's Sketchpad*® 4
- BLM T-4 *Fathom*™
- BLM T-5 The Computer Algebra System
(CAS) on the TI-89 Calculator
- BLM T-6 Using the CBR™ (Calculator
Based Ranger)

Student Support Masters and Practice Masters for *Foundations for College Mathematics 12*

Chapter 1 Measurement and Geometry

BLM 1-1	Prerequisite Skills
BLM 1-2	Prerequisite Skills Self-Assessment Checklist
BLM 1-3	Section 1.1 Composite Figures
BLM 1-4	Section 1.1 Area
BLM 1-5	Section 1.1 Achievement Check Rubric
BLM 1-6	Section 1.2 Work with Volume
BLM 1-7	Section 1.2 Frayer Model
BLM 1-8	Section 1.2 Volume
BLM 1-9	Section 1.2 Achievement Check Rubric
BLM 1-10	Section 1.2 Example 2 Net
BLM 1-11	Section 1.3 Surface Area
BLM 1-12	Section 1.3 Achievement Check Rubric
BLM 1-13	Section 1.4 Practise Questions
BLM 1-14	Section 1.4 Optimize Perimeter and Area
BLM 1-15	Section 1.6 Analyse Optimum Volume and Surface Area
BLM 1-16	Section 1.6 Achievement Check Rubric
BLM 1-17	Chapter 1 Literacy
BLM 1-18	Chapter 1 Review
BLM 1-19	Chapter 1 Practice Test
BLM 1-20	Chapter 1 Test
BLM 1-21	Chapter 1 Problem Wrap-Up Rubric
BLM 1-22	Chapter 1 Task Rubric
BLM 1-23	BLM Answers

Chapter 2 Trigonometry

BLM 2-1	KWL Chart
BLM 2-2	Prerequisite Skills
BLM 2-3	Prerequisite Skills Self-Assessment Checklist
BLM 2-4	Section 2.1 Trigonometric Ratios With Acute Angles
BLM 2-5	Section 2.1 Achievement Check Rubric
BLM 2-6	Section 2.2 Trigonometric Ratios With Obtuse Angles
BLM 2-7	Section 2.3 Sine Law
BLM 2-8	Section 2.4 Cosine Law
BLM 2-9	Section 2.4 Achievement Check Rubric
BLM 2-10	Section 2.5 Applications of Trigonometry
BLM 2-11	Section 2.5 Achievement Check Rubric
BLM 2-12	Chapter 2 Literacy
BLM 2-13	Chapter 2 Review
BLM 2-14	Chapter 2 Practice Test
BLM 2-15	Chapter 2 Test
BLM 2-16	Chapter 2 Problem Wrap-Up Rubric
BLM 2-17	Chapter 2 Task Rubric
BLM 2-18	Chapter 2 BLM Answers

Chapter 3 Two-Variable Statistics

BLM 3-1	Prerequisite Skills
BLM 3-2	Prerequisite Skills Self-Assessment Checklist
BLM 3-3	Section 3.1 Two-Variable Data Sets
BLM 3-4	Section 3.2 Effective Surveys
BLM 3-5	Section 3.2 Achievement Check Rubric
BLM 3-6	Section 3.3 Collect and Organize Data
BLM 3-7	Section 3.4 The Line of Best Fit
BLM 3-8	Section 3.4 Achievement Check Rubric
BLM 3-9	Section 3.5 Analysis and Conclusions
BLM 3-10	Section 3.5 Achievement Check Rubric
BLM 3-11	Chapter 3 Literacy
BLM 3-12	Chapter 3 Review
BLM 3-13	Chapter 3 Practice Test
BLM 3-14	Chapter 3 Test
BLM 3-15	Chapter 3 Problem Wrap-Up Rubric
BLM 3-16	Chapter 3 Task Rubric
BLM 3-17	Chapter 3 BLM Answers

Chapter 4 Apply Data Management

BLM 4-1	Prerequisite Skills
BLM 4-2	Prerequisite Skills Self-Assessment Checklist
BLM 4-3	Section 4.1 Statistical Measures
BLM 4-4	Section 4.1 Achievement Check Rubric
BLM 4-5	Section 4.2 Statistical Indices
BLM 4-6	Section 4.3 Interpret Statistics in the Media
BLM 4-7	Section 4.4 Statistical Bias
BLM 4-8	Section 4.4 Achievement Check Rubric
BLM 4-9	Section 4.5 Critical Analysis
BLM 4-10	Chapter 4 Literacy
BLM 4-11	Chapter 4 Review
BLM 4-12	Chapter 4 Practice Test
BLM 4-13	Chapter 4 Test
BLM 4-14	Chapter 4 Problem Wrap-Up Rubric
BLM 4-15	Chapter 4 Task Rubric
BLM 4-16	Chapter 4 BLM Answers

Chapter 5 Graphical Models

BLM 5-1	Prerequisite Skills
BLM 5-2	Prerequisite Skills Self-Assessment Checklist
BLM 5-3	Section 5.1 Linear Models
BLM 5-4	Section 5.1 Investigate Table
BLM 5-5	Section 5.1 Example 2 Use Technology
BLM 5-6	Section 5.1 Achievement Check Rubric
BLM 5-7	Section 5.2 Quadratic Models
BLM 5-8	Section 5.2 Investigate Table

BLM 5-9 Section 5.2 Example 3 Use Technology
 BLM 5-10 Section 5.2 Question 10
 BLM 5-11 Section 5.2 Achievement Check Rubric
 BLM 5-12 Section 5.3 Exponential Models
 BLM 5-13 Section 5.3 Investigate Table
 BLM 5-14 Section 5.3 Achievement Check Rubric
 BLM 5-15 Section 5.4 Analyse Graphical Models
 BLM 5-16 Section 5.4 Example 2 Use Technology
 BLM 5-17 Section 5.4 Achievement Check Rubric
 BLM 5-18 Section 5.5 Select a Mathematical Model
 BLM 5-19 Section 5.5 Example 1 Use Technology
 BLM 5-20 Section 5.5 Example 2 Use Technology
 BLM 5-21 Section 5.5 Achievement Check Rubric
 BLM 5-22 Chapter 5 Literacy
 BLM 5-23 Chapter 5 Review
 BLM 5-24 Environmental Investigation
 BLM 5-25 Chapter 5 Practice Test
 BLM 5-26 Chapter 5 Test
 BLM 5-27 Chapter 5 Problem Wrap-Up Rubric
 BLM 5-28 Chapter 5 Task Rubric
 BLM 5-29 BLM Answers

Chapter 6 Algebraic Models

BLM 6-1 Prerequisite Skills
 BLM 6-2 Prerequisite Skills Self-Assessment Checklist
 BLM 6-3 Section 6.1 Investigate
 BLM 6-4 Section 6.1 Exponent Laws
 BLM 6-5 Section 6.1 Achievement Check Rubric
 BLM 6-6 Section 6.2 Rational Exponents
 BLM 6-7 Section 6.2 Achievement Check Rubric
 BLM 6-8 Section 6.3 Represent Exponential Expressions
 BLM 6-9 Section 6.3 Achievement Check Rubric
 BLM 6-10 Section 6.4 Investigate
 BLM 6-11 Section 6.4 Tools and Strategies for Solving Equations Involving Exponents
 BLM 6-12 Section 6.4 Achievement Check Rubric
 BLM 6-13 Section 6.5 Warm-Up
 BLM 6-16 Section 6.5 Construct and Apply Exponential Models
 BLM 6-15 Section 6.5 Achievement Check Rubric
 BLM 6-16 Chapter 6 Literacy
 BLM 6-17 Chapter 6 Review
 BLM 6-18 Chapter 6 Practice Test
 BLM 6-19 Chapter 6 Test
 BLM 6-20 Chapter 6 Problem Wrap-Up Rubric
 BLM 6-21 Chapter 6 Task Rubric
 BLM 6-22 Chapter 6 BLM Answers

Chapter 7 Annuities and Mortgages

BLM 7-1 Prerequisite Skills
 BLM 7-2 Prerequisite Skills Self-Assessment Checklist
 BLM 7-3 Section 7.1 Annuities
 BLM 7-4 Section 7.2 The Conditions of an Annuity
 BLM 7-5 Section 7.2 Achievement Check Rubric
 BLM 7-6 Section 7.3 Mortgages and Amortization
 BLM 7-7 Section 7.4 The Conditions of a Mortgage
 BLM 7-8 Section 7.4 Achievement Check Rubric
 BLM 7-9 Chapter 7 Review
 BLM 7-10 Chapter 7 Literacy
 BLM 7-11 Chapter 7 Practice Test
 BLM 7-12 Chapter 7 Test
 BLM 7-13 Chapter 7 Problem Wrap-Up Rubric
 BLM 7-14 Chapter 7 Task Rubric
 BLM 7-15 Chapter 7 BLM Answers

Chapter 8 Budgeting

BLM 8-1 Prerequisite Skills
 BLM 8-2 Prerequisite Skills Self-Assessment Checklist
 BLM 8-3 Section 8.1 Savings Plans
 BLM 8-4 Section 8.1 Achievement Check Rubric
 BLM 8-5 Section 8.2 The Cost of Renting a Home
 BLM 8-6 Section 8.2 Achievement Check Rubric
 BLM 8-7 Section 8.3 The Cost of Owning a Home
 BLM 8-8 Section 8.4 Living Expenses
 BLM 8-9 Budget Template
 BLM 8-10 Chapter 8 Literacy
 BLM 8-11 Chapter 8 Review
 BLM 8-12 Chapter 8 Practice Test
 BLM 8-13 Chapter 8 Test
 BLM 8-14 Chapter 8 Problem Wrap-Up Rubric
 BLM 8-15 Chapter 8 Task Rubric
 BLM 8-16 Chapter 8 BLM Answers