

Table of Contents

Overview of Foundations for College

Mathematics 11..... 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 Trigonometry 1

Chapter 1 Planning Chart..... 3

Chapter 1 Blackline Masters Checklist..... 4

Prerequisite Skills..... 5

1.1 Revisit the Primary Trigonometric Ratios 6

1.2 Solve Problems Using Trigonometric Ratios... 9

1.3 The Sine Law..... 13

1.4 The Cosine Law..... 17

1.5 Make Decisions Using Trigonometry..... 20

Chapter 1 Review..... 23

Chapter 1 Practice Test..... 24

Chapter 2 Probability..... 27

Chapter 2 Planning Chart..... 29

Chapter 2 Blackline Masters Checklist..... 30

Prerequisite Skills..... 31

2.1 Probability Experiments..... 32

2.2 Theoretical Probability of an Event..... 36

2.3 Compare Experimental and Theoretical Probabilities..... 40

2.4 Interpret Information Involving Probability..... 44

Chapter 2 Review..... 48

Chapter 2 Practice Test..... 49

Chapter 3 One Variable Statistics..... 51

Chapter 3 Planning Chart..... 53

Chapter 3 Blackline Masters Checklist..... 54

Prerequisite Skills..... 55

3.1 Sampling Techniques..... 56

3.2 Collect and Analyse Data..... 59

3.3 Display Data..... 63

3.4 Measures of Central Tendency..... 67

3.5 Measures of Spread..... 70

3.6 Common Distributions..... 73

Chapter 3 Review..... 76

Chapter 3 Practice Test..... 77

Chapters 1 to 3 Review..... 79

Task: Road to the Stanley Cup..... 80

Chapter 4 Quadratic Relations I..... 83

Chapter 4 Planning Chart..... 84

Chapter 4 Blackline Masters Checklist..... 85

Prerequisite Skills..... 86

4.1 Introduction to Quadratic Relations..... 87

4.2 The Quadratic Relation $y = ax^2 + k$ 91

4.3 The Quadratic Relation $y = a(x - h)^2$ 96

4.4 The Quadratic Relation $y = a(x - h)^2 + k$... 99

4.5 Interpret Graph of Quadratic Relations... 104

Chapter 4 Review..... 107

Chapter 4 Practice Test..... 108

Chapter 5 Quadratic Relations II..... 111

Chapter 5 Planning Chart..... 112

Chapter 5 Blackline Masters Checklist..... 113

Prerequisite Skills..... 114

5.1 Expand Binomials..... 115

5.2 Convert Quadratic Relations From Vertex Form to Standard Form..... 118

5.3 Factor Trinomials of the Form $x^2 + bx + c$ 121

5.4 Factor Trinomials of the Form $ax^2 + bx + c$ 124

5.5 The x-Intercepts of a Quadratic Relation... 127

5.6 Solve Problems Involving Quadratic Relations..... 130

Chapter 5 Review..... 133

Chapter 5 Practice Test..... 134

Task: Design a Soccer Field..... 136

Chapter 6 Geometry in Design..... 139

Chapter 6 Planning Chart..... 141

Chapter 6 Blackline Masters Checklist..... 143

Prerequisite Skills..... 145

6.1 Investigate Geometric Shapes and Figures... 146

6.2 Perspective and Orthographic Drawings... 151

6.3 Create Nets, Plans, and Patterns..... 155

6.4 Scale Models..... 159

6.5 Solve Problems With Given Constraints . . .	162
Chapter 6 Review	166
Chapter 6 Practice Test	167
Chapters 4 to 6 Review	170
Chapter 7 Exponents	171
Chapter 7 Planning Chart	173
Chapter 7 Blackline Masters Checklist	174
Prerequisite Skills	175
7.1 Exponent Rules	176
7.2 Zero and Negative Exponents	180
7.3 Investigate Exponential Relationships	184
7.4 Exponential Relations	188
7.5 Modelling Exponential Growth and Decay	192
7.6 Solve Problems Involving Exponential Growth and Decay	196
Chapter 7 Review	199
Chapter 7 Practice Test	200
Chapter 8 Compound Interest	203
Chapter 8 Planning Chart	205
Chapter 8 Blackline Masters Checklist	206
Prerequisite Skills	207
8.1 Simple and Compound Interest	208
8.2 Compound Interest	212
8.3 Present Value	215
8.4 The TVM Solver.	218
8.5 Effects of Changing the Conditions on Investments and Loans	220
Chapter 8 Review	223
Chapter 8 Practice Test	224
Chapter 9 Personal Finance	227
Chapter 9 Planning Chart	229
Chapter 9 Blackline Masters Checklist	230
Prerequisite Skills	232
9.1 Savings Alternatives	233
9.2 Investment Alternatives.	236
9.3 Manage Credit Cards	240
9.4 Obtain a Vehicle.	243
9.5 Operate a Vehicle.	246
Chapter 9 Review	250
Chapter 9 Practice Test	251
Chapters 7 to 9 Review	253
Task: Organise Your Personal Finances	254
Chapters 1 to 9 Review.	257

Blackline Masters

(Available on *Foundations for College Math 11: 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
BLM G-4	Square Dot Paper
BLM G-5	Isometric Dot Paper
BLM G-6	Centimetre Grid Paper

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® <i>Excel</i>
BLM T-2	<i>The Geometer's Sketchpad</i> ® 3
BLM T-3	<i>The Geometer's Sketchpad</i> ® 4
BLM T-4	<i>Fathom</i> ™
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 11*

Chapter 1 Trigonometry

BLM 1-1	Prerequisite Skills
BLM 1-2	Prerequisite Skills Self-Assessment Checklist
BLM 1-3	Section 1.1 Revisit the Primary Trigonometric Ratios
BLM 1-4	Section 1.2 Solve Problems Using Trigonometric Ratios
BLM 1-5	Section 1.2 Make Your Own Clinometer
BLM 1-6	Section 1.3 The Sine Law Triangles
BLM 1-7	Section 1.3 The Sine Law
BLM 1-8	Section 1.3 Achievement Check Rubric
BLM 1-9	Section 1.4 The Cosine Law
BLM 1-10	Section 1.5 Match Me Up Cards
BLM 1-11	Section 1.5 Make Decisions Using Trigonometry
BLM 1-12	Section 1.5 Achievement Check Rubric
BLM 1-13	Section 1.5 Literacy Connect
BLM 1-14	Chapter 1 Review
BLM 1-15	Chapter 1 Practice Test
BLM 1-16	Chapter 1 Test
BLM 1-17	Chapter 1 Problem Wrap-Up Rubric
BLM 1-18	BLM Answers

Chapter 2 Probability

BLM 2-1	Prerequisite Skills
BLM 2-2	Prerequisite Skills Self-Assessment Checklist
BLM 2-3	Section 2.1 Probability Experiments
BLM 2-4	Section 2.2 Theoretical Probability
BLM 2-5	Section 2.3 Compare Experimental and Theoretical Probabilities
BLM 2-6	Section 2.3 Achievement Check Rubric
BLM 2-7	Section 2.4 Interpret Information Involving Probability
BLM 2-8	Section 2.4 Achievement Check Rubric
BLM 2-9	Chapters 2 and 3 Literacy Connect
BLM 2-10	Chapter 2 Review
BLM 2-11	Chapter 2 Practice Test
BLM 2-12	Chapter 2 Test
BLM 2-13	Chapter 2 Problem Wrap-Up Rubric
BLM 2-14	BLM Answers

Chapter 3 One Variable Statistics

BLM 3-1	Prerequisite Skills
BLM 3-2	Prerequisite Skills Self-Assessment Checklist
BLM 3-3	Section 3.1 Sampling Techniques
BLM 3-4	Section 3.1 Achievement Check Rubric
BLM 3-5	Section 3.2 Collect and Analyse Data
BLM 3-6	Section 3.2 Achievement Check Rubric
BLM 3-7	Section 3.3 Display Data
BLM 3-8	Section 3.3 Achievement Check Rubric
BLM 3-9	Section 3.4 Measures of Central Tendency
BLM 3-10	Section 3.4 Achievement Check Rubric
BLM 3-11	Section 3.5 Measures of Spread
BLM 3-12	Section 3.5 Achievement Check Rubric

BLM 3-13	Section 3.6 Common Distributions
BLM 3-14	Section 3.6 Achievement Check Rubric
BLM 3-15	Chapter 3 Review
BLM 3-16	Chapter 3 Practice Test
BLM 3-17	Chapter 3 Test
BLM 3-18	Chapter 3 Problem Wrap-Up Rubric
BLM 3-19	Task: Road to the Stanley Cup Rubric
BLM 3-20	BLM Answers

Chapter 4 Quadratic Relations I

BLM 4-1	Prerequisite Skills
BLM 4-2	Prerequisite Skills Self-Assessment Checklist
BLM 4-3	Section 4.1 Modelling With Quadratic Relations
BLM 4-4	Section 4.1 Achievement Check Rubric
BLM 4-5	Section 4.2 The Quadratic Relation $y = ax^2 + k$
BLM 4-6	Section 4.3 The Quadratic Relation $y = a(x - h)^2$
BLM 4-7	Section 4.4 The Quadratic Relation $y = a(x - h)^2 + k$
BLM 4-8	Section 4.4 Achievement Check Rubric
BLM 4-9	Section 4.5 Interpret Graphs of Quadratic Relations
BLM 4-10	Section 4.5 Investigate
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	BLM Answers

Chapter 5 Quadratic Relations II

BLM 5-1	Prerequisite Skills
BLM 5-2	Prerequisite Skills Self-Assessment Checklist
BLM 5-3	Section 5.1 Expand Binomials
BLM 5-4	Section 5.2 Change Quadratic Relations From Vertex Form to Standard Form
BLM 5-5	Section 5.2 Achievement Check Rubric
BLM 5-6	Section 5.3 Factor Trinomials of the Form $x^2 + bx + c$
BLM 5-7	Section 5.4 Factor Trinomials of the Form $ax^2 + bx + c$
BLM 5-8	Section 5.4 Achievement Check Rubric
BLM 5-9	Section 5.5 The x-Intercepts of a Quadratic Relation
BLM 5-10	Section 5.5 Literacy Connect
BLM 5-11	Section 5.6 Solve Problems Involving Quadratic Relations
BLM 5-12	Section 5.6 Achievement Check Rubric
BLM 5-13	Chapter 5 Review
BLM 5-14	Chapter 5 Practice Test
BLM 5-15	Chapter 5 Test
BLM 5-16	Chapter 5 Problem Wrap-Up Rubric
BLM 5-17	Task: Design a Soccer Field Rubric
BLM 5-18	BLM Answers

Chapter 6 Geometry in Design

BLM 6-1	Prerequisite Skills
BLM 6-2	Prerequisite Skills Self-Assessment Checklist
BLM 6-3	Section 6.1 Investigate Geometric Shapes and Figures
BLM 6-4	Section 6.1 Pattern Block Template
BLM 6-5	Section 6.1 Literacy Connect
BLM 6-6	Section 6.1 Achievement Check Rubric
BLM 6-7	Section 6.2 Perspective and Orthographic Drawings
BLM 6-8	Section 6.3 Create Nets, Plans, and Patterns
BLM 6-9	Section 6.3 Net for an Octahedron
BLM 6-10	Section 6.3 Net for Question 5
BLM 6-11	Section 6.3 Net for a Dodecahedron
BLM 6-12	Section 6.4 Scale Models
BLM 6-13	Section 6.4 Using the Transform Menu in <i>The Geometer's Sketchpad</i> [®]
BLM 6-14	Section 6.5 Solve Problems With Given Constraints
BLM 6-15	Section 6.5 Achievement Check Rubric
BLM 6-16	Chapter 6 Review
BLM 6-17	Chapter 6 Practice Test
BLM 6-18	Chapter 6 Test
BLM 6-19	Chapter 6 Problem Wrap-Up Rubric
BLM 6-20	BLM Answers

Chapter 7 Exponents

BLM 7-1	Prerequisite Skills
BLM 7-2	Prerequisite Skills Self-Assessment Checklist
BLM 7-3	Section 7.1 Exponent Rules
BLM 7-4	Section 7.2 Zero and Negative Exponents
BLM 7-5	Section 7.3 Investigate Exponential Relationships
BLM 7-6	Section 7.3 Analogue Radio Dial
BLM 7-7	Section 7.3 Achievement Check Rubric
BLM 7-8	Section 7.4 Exponential Relations
BLM 7-9	Section 7.4 Literacy Connect
BLM 7-10	Section 7.5 Modelling Exponential Growth and Decay
BLM 7-11	Section 7.5 Achievement Check Rubric
BLM 7-12	Section 7.6 Solve Problems Involving Exponential Growth and Decay
BLM 7-13	Chapter 7 Review
BLM 7-14	Chapter 7 Practice Test
BLM 7-15	Chapter 7 Test
BLM 7-16	Chapter 7 Problem Wrap-Up Rubric
BLM 7-17	BLM Answers

Chapter 8 Compound Interest

BLM 8-1	Prerequisite Skills
BLM 8-2	Prerequisite Skills Self-Assessment Checklist
BLM 8-3	Section 8.1 Simple and Compound Interest
BLM 8-4	Section 8.2 Compound Interest
BLM 8-6	Section 8.2 Literacy Connect
BLM 8-5	Section 8.2 Achievement Check Rubric
BLM 8-7	Section 8.3 Present Value
BLM 8-8	Section 8.4 The TVM Solver
BLM 8-9	Section 8.5 Effects of Changing Conditions on Investments and Loans
BLM 8-10	Section 8.5 Achievement Check Rubric
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	BLM Answers

Chapter 9 Personal Finance

BLM 9-1	Prerequisite Skills
BLM 9-2	Prerequisite Skills Self-Assessment Checklist
BLM 9-3	Section 9.1 Savings Alternatives
BLM 9-4	Section 9.2 Investment Alternatives
BLM 9-5	Section 9.2 Achievement Check Rubric
BLM 9-6	Section 9.3 Manage Credit Cards
BLM 9-7	Section 9.4 Obtain a Vehicle
BLM 9-8	Section 9.4 Achievement Check Rubric
BLM 9-9	Section 9.5 Operate a Vehicle
BLM 9-10	Section 9.5 Achievement Check Rubric
BLM 9-11	Chapter 9 Review
BLM 9-12	Chapter 9 Practice Test
BLM 9-13	Chapter 9 Practice Test Organisational Chart
BLM 9-14	Chapter 9 Test
BLM 9-15	Chapter 9 Problem Wrap-Up Rubric
BLM 9-16	Task: Organise Your Personal Finances Rubric
BLM 9-17	BLM Answers