

Contents

Program Overview

What Is <i>Leaps and Bounds</i> ?	ix
A Research Foundation	x
How to Use <i>Leaps and Bounds</i>	xiv
Frequently Asked Questions	xvii
Components	xix

Teaching Notes

Strand: Number

Number Strand Overview		2
Representing Whole Numbers		
Topic Overview (page 6)		
Diagnostic Tool (page 8)		
	Pathway 1: Representing Numbers to 100 000	Open-ended 14 Guided 15
	Pathway 2: Representing Numbers to 10 000	Open-ended 16 Guided 17
	Pathway 3: Representing Numbers to 1000	Open-ended 18 Guided 19
	Pathway 4: Multiplying and Dividing by 10s	Open-ended 20 Guided 21
Comparing Whole Numbers		
Topic Overview (page 22)		
Diagnostic Tool (pages 24)		
	Pathway 1: Comparing Numbers to 100 000	Open-ended 28 Guided 29
	Pathway 2: Comparing Numbers to 10 000	Open-ended 30 Guided 31
	Pathway 3: Comparing Numbers to 1000	Open-ended 32 Guided 33
Adding and Subtracting		
Topic Overview (page 34)		
Diagnostic Tool (page 36)		
	Pathway 1: Different Numbers of Digits	Open-ended 40 Guided 41
	Pathway 2: Same Number of Digits	Open-ended 42 Guided 43
	Pathway 3: Using Mental Math to Subtract	Open-ended 44 Guided 45
	Pathway 4: Using Mental Math to Add	Open-ended 46 Guided 47

Multiplying Whole Numbers Topic Overview (page 48) Diagnostic Tool (page 50)	Pathway 1:			
	Multiplying Two-Digit Numbers	Open-ended	54	
		Guided	55	
	Pathway 2:			
	Multiplying by One-Digit Numbers	Open-ended	56	
		Guided	57	
	Pathway 3:			
	Multiplication Fact Strategies	Open-ended	58	
		Guided	59	
Dividing Whole Numbers Topic Overview (page 60) Diagnostic Tool (page 62)	Pathway 1:			
	Dividing Three-Digit Numbers	Open-ended	66	
		Guided	67	
	Pathway 2:			
	Dividing Two-Digit Numbers	Open-ended	68	
		Guided	69	
	Pathway 3:			
	Division Fact Strategies	Open-ended	70	
		Guided	71	
Relating Situations to Operations Topic Overview (page 72) Diagnostic Tool (page 74)	Pathway 1:			
	Division Situations	Open-ended	78	
		Guided	79	
	Pathway 2:			
	Multiplication Situations	Open-ended	80	
		Guided	81	
	Pathway 3:			
	Subtraction Situations	Open-ended	82	
		Guided	83	
Representing Fractions Topic Overview (page 84) Diagnostic Tool (page 86)	Pathway 1:			
	Improper Fractions: Parts of Sets	Open-ended	92	
		Guided	93	
	Pathway 2:			
	Improper Fractions: Parts of Wholes	Open-ended	94	
		Guided	95	
	Pathway 3:			
	Proper Fractions: Parts of Sets	Open-ended	96	
		Guided	97	
	Pathway 4:			
	Proper Fractions: Parts of Wholes	Open-ended	98	
		Guided	99	
Comparing Fractions Topic Overview (page 100) Diagnostic Tool (page 102)	Pathway 1:			
	Fractions More and Less Than 1	Open-ended	108	
		Guided	109	
	Pathway 2:			
	Equivalent Fractions	Open-ended	110	
		Guided	111	
	Pathway 3:			
	Comparing: Same Numerators	Open-ended	112	
		Guided	113	
	Pathway 4:			
	Comparing: Same Denominators	Open-ended	114	
		Guided	115	
	Pathway 5:			
	Comparing Fractions to $\frac{1}{2}$ and 1	Open-ended	116	
		Guided	117	

Representing Decimals Topic Overview (page 118) Diagnostic Tool (page 120)	Pathway 1:			
	Representing Thousandths	Open-ended	126	
		Guided	127	
	Pathway 2:			
	Representing Hundredths	Open-ended	128	
		Guided	129	
Comparing Decimals Topic Overview (page 132) Diagnostic Tool (page 134)	Pathway 1:			
	Comparing Mixed Decimals	Open-ended	138	
		Guided	139	
	Pathway 2:			
	Comparing Thousandths	Open-ended	140	
		Guided	141	
Decimal Computation Topic Overview (page 144) Diagnostic Tool (page 146)	Pathway 3:			
	Comparing Tenths and Hundredths	Open-ended	142	
		Guided	143	
	Pathway 1:			
	Multiply and Divide by 10 or 100	Open-ended	152	
		Guided	153	
	Pathway 2:			
	Add and Subtract to Thousandths	Open-ended	154	
		Guided	155	
	Pathway 3:			
	Add and Subtract Thousandths	Open-ended	156	
		Guided	157	
	Pathway 4:			
	Add and Subtract to Hundredths	Open-ended	158	
		Guided	159	
	Pathway 5:			
	Add and Subtract Tenths or Hundredths	Open-ended	160	
		Guided	161	

Strand: Patterns and Algebra

Patterns and Algebra Strand Overview					162
Patterns Topic Overview (page 164) Diagnostic Tool (page 166)	Pathway 1:				
	Using Pattern Rules	Open-ended		172	
		Guided		173	
	Pathway 2:				
	Growing and Shrinking Patterns	Open-ended		174	
		Guided		175	
Equality Topic Overview (page 178) Diagnostic Tool (page 180)	Pathway 3:				
	Repeating Patterns	Open-ended		176	
		Guided		177	
	Pathway 1:				
	Using Algebra	Open-ended		184	
		Guided		185	
	Pathway 2:				
	Solving Equations	Open-ended		186	
		Guided		187	

Strand: Geometry

Geometry Strand Overview

188

3-D Shapes Topic Overview (page 190) Diagnostic Tool (page 192)	Pathway 1: Modelling with Nets	Open-ended	198
		Guided	199
	Pathway 2: Modelling with Skeletons	Open-ended	200
		Guided	201
	Pathway 3: Modelling with Solid Shapes	Open-ended	202
		Guided	203
2-D Shapes Topic Overview (page 204) Diagnostic Tool (page 206)	Pathway 1: Classifying Triangles	Open-ended	210
		Guided	211
	Pathway 2: Classifying Quadrilaterals	Open-ended	212
		Guided	213
	Pathway 3: Line Symmetry	Open-ended	214
		Guided	215
Location and Movement Topic Overview (page 216) Diagnostic Tool (page 218)	Pathway 1: Using Cardinal Directions on Grids	Open-ended	224
		Guided	225
	Pathway 2: Locating Objects on Grids	Open-ended	226
		Guided	227
Transformations Topic Overview (page 228) Diagnostic Tool (page 230)	Pathway 1: Single Rotations	Open-ended	236
		Guided	237
	Pathway 2: Multiple Reflections	Open-ended	238
		Guided	239
	Pathway 3: Multiple Translations	Open-ended	240
		Guided	241
	Pathway 4: Single Reflections and Translations	Open-ended	242
		Guided	243

Strand: Measurement

Measurement Strand Overview

244

Length Topic Overview (page 246) Diagnostic Tool (page 248)	Pathway 1: Perimeter of a Rectangle	Open-ended	252
		Guided	253
	Pathway 2: Perimeter: Using Standard Units	Open-ended	254
		Guided	255
	Pathway 3: Length: Using Standard Units	Open-ended	256
		Guided	257
Area Topic Overview (page 258) Diagnostic Tool (page 260)	Pathway 1: Area of a Rectangle	Open-ended	264
		Guided	265
	Pathway 2: Using Standard Units of Area	Open-ended	266
		Guided	267

Time	Pathway 1:			
Topic Overview (page 268)	Using Elapsed Time	Open-ended	274	
Diagnostic Tool (page 270)		Guided	275	
	Pathway 2:			
	Reading a Clock	Open-ended	276	
		Guided	277	
Mass	Pathway 1:			
Topic Overview (page 278)	Mass: Kilograms and Grams	Open-ended	284	
Diagnostic Tool (page 280)		Guided	285	
	Pathway 2:			
	Mass: Using One Standard Unit	Open-ended	286	
		Guided	287	
Volume and Capacity	Pathway 1:			
Topic Overview (page 288)	Volume Related to Area of Base	Open-ended	296	
Diagnostic Tool (page 290)		Guided	297	
	Pathway 2:			
	Relating Volume and Capacity	Open-ended	298	
		Guided	299	
	Pathway 3:			
	Volume: Cubic Centimetres	Open-ended	300	
		Guided	301	
	Pathway 4:			
	Capacity: Litres or Millilitres	Open-ended	302	
		Guided	303	
Angles	Pathway 1:			
Topic Overview (page 304)	Measuring and Drawing Angles	Open-ended	310	
Diagnostic Tool (page 306)		Guided	311	
	Pathway 2:			
	Comparing Angles	Open-ended	312	
		Guided	313	

Strand: Data and Probability

Data and Probability Strand Overview				314
Summarizing Data	Pathway 1:			
Topic Overview (page 316)	Data: Using the Mean	Open-ended	322	
Diagnostic Tool (page 318)		Guided	323	
	Pathway 2:			
	Data: Using the Median and Mode	Open-ended	324	
		Guided	325	
Displaying Data	Pathway 1:			
Topic Overview (page 326)	Data: Using Broken-Line Graphs	Open-ended	336	
Diagnostic Tool (pages 328)		Guided	337	
	Pathway 2:			
	Data: Using Stem-and-Leaf Plots	Open-ended	338	
		Guided	339	
	Pathway 3:			
	Data: Using Double Bar Graphs	Open-ended	340	
		Guided	341	
	Pathway 4:			
	Data: Using Line Plots	Open-ended	342	
		Guided	343	
Probability	Pathway 1:			
Topic Overview (page 344)	Probability: Using Numbers	Open-ended	350	
Diagnostic Tool (page 346)		Guided	351	
	Pathway 2:			
	Probability: Using Words	Open-ended	352	
		Guided	353	