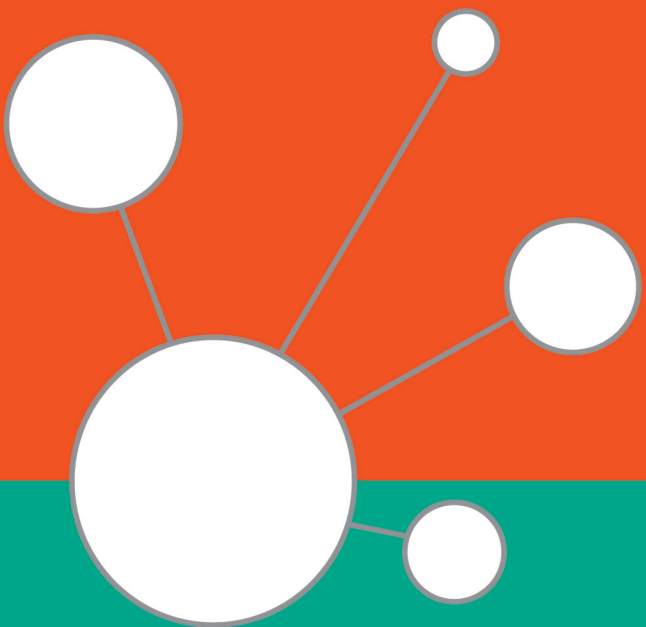
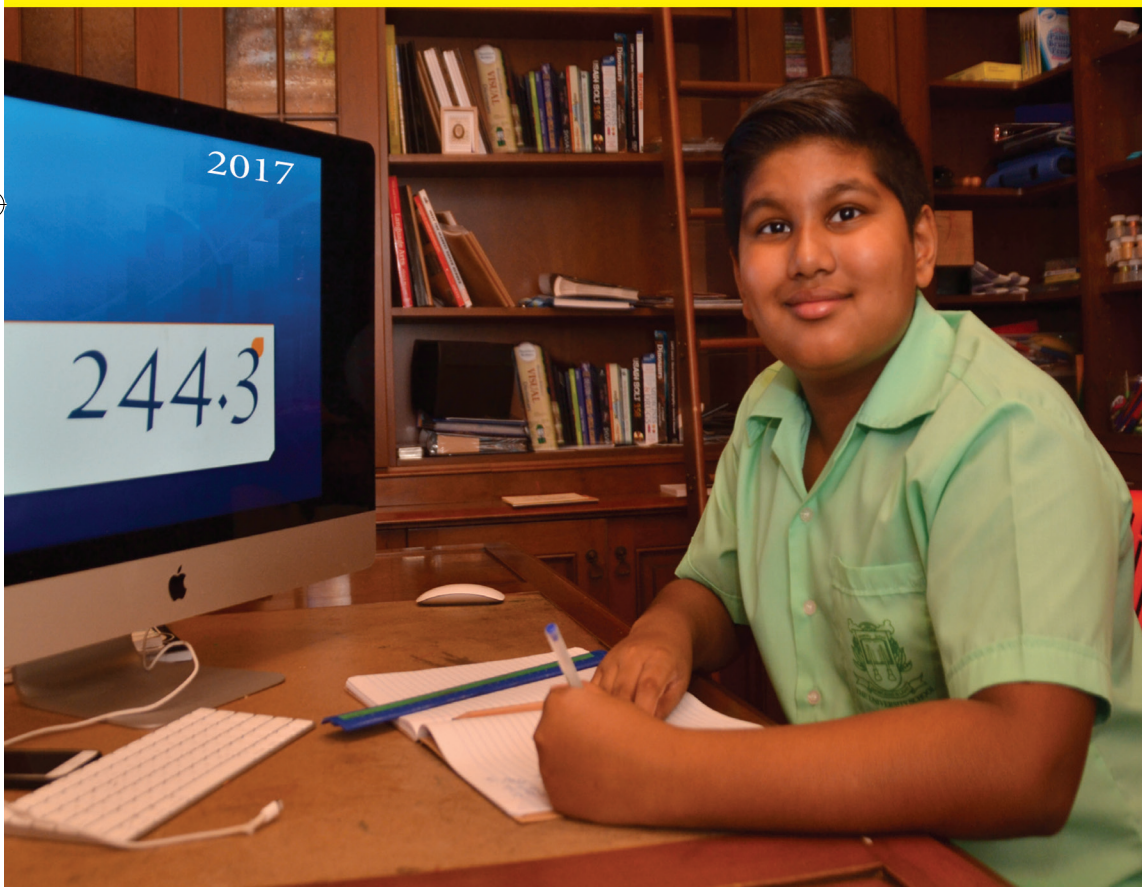




Connecting Mathematics

for Primary School
Standard 4 and 5



Connecting Mathematics

for Primary School
Standard 4 and 5



© Caribbean Educational Publishers (2003) Ltd.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without the prior permission in writing from the Publishers.

Photographer

Mikhail Bradshaw

Connecting Mathematics for Primary School Standard 4 & 5

ISBN #978-976-648-463-7

First Published 2017 L-EN-0001



Caribbean Educational Publishers (2003) Ltd.,
Teddy's Shopping Centre,
Gulf View Link Road,
La Romaine, Trinidad.
Phone: (868) 657-9613/(868) 653-5535
Fax: (868) 652-5620
E-mail: admin@mbsceptt.com

Connecting Mathematics

for Primary School Standard 4 and 5

Authors

Cherryl Bradshaw

Primary School Teacher
Teacher's Diploma
BSc. Computing and Information System
Management
Pg. Dip. Management of Information
Systems

Tricia Peters

Primary School Teacher
Teacher's Diploma
B. Ed. Mathematics

Mohan Sadal

Vice Principal
Teacher's Diploma
Cert. Ed. The Teaching of Mathematics
B. Ed. Educational Administration
M. Ed. Curriculum Studies

Preface

Connecting Mathematics for Primary School Standard 4 and 5 was designed to teach the content of the **Primary Curriculum: Mathematics, 2013**. Use of this book will allow students to gain a deeper understanding of concepts, to develop fluency with skills, and, to become confident in problem solving. In turn, they will be prepared for all formal assessments including the SEA examinations 2019 and beyond.

There is equal emphasis on conceptual understanding and skill development. Teaching Points present the use of concrete and pictorial representations before moving on to more symbolic forms. Throughout the book, there is an abundant use of clear, attractive visuals which introduce concepts and model solutions to allow students to gain mastery.

Problem solving is central to all mathematics study. This book is organized to support students to become problem solvers. They are encouraged to use Polya's problem solving steps. They are given the opportunity to use bar modelling as a strategy to assist with reasoning while solving problems.

Topics are sequenced within the chapters to facilitate learning through instruction. Content for new topics is scaffolded carefully and thoroughly to develop understanding through activities, and promote guided learning, before moving on to independent learning. The activities and lessons build foundations for number, operations, algebraic thinking, measurement, geometry and statistics.

Vocabulary terms are introduced to students in each chapter. This lets them connect the terms to their understanding of the concepts, expand their abstract reasoning ability and move beyond operations to problem solving.

By using this book, students will be able to develop the ability to think and reason creatively and critically. They will also be able to make connections with concepts and real life experiences. Each chapter begins with a picture and content that shows the relevance of the Mathematics topic to everyday life. Thereby making them appreciate mathematics.

Table of Contents

Chapter 1: Number Concepts, Place Value and Rounding	1
Getting Ready for Chapter 1	2
Represent Numbers	2
Place Value and Value	5
Expanded Notation	7
Compare and Order Numbers	8
Rounding	11
Chapter Review	13
Chapter 2: Number Patterns	14
Getting Ready for Chapter 2	15
Describe Number Patterns	15
Complete Number Patterns	16
Identify Errors in Number Patterns	17
Relationships in Patterns	18
Patterns with One and Zero	19
Factors and Multiples Patterns	20
Prime and Composite Numbers	21
Chapter Review	22
Chapter 3: Number Relationships	24
Getting Ready for Chapter 3	25
Use Inverse Operations to Find Missing Numbers	25
Use Relational Thinking to Find Missing Numbers	26
Chapter Review	29
Chapter 4: Types of Numbers	30
Getting Ready for Chapter 4	31
Odd and Even Numbers	31
Factors	32
Factors and Divisibility	33
Multiples	34
Prime and Composite Numbers	35
Prime Factorisation	36

Square Numbers	37
Chapter Review	38
Chapter 5: Addition and Subtraction of Whole Numbers	40
Getting Ready for Chapter 5	41
Addition Properties	41
Add and Subtract Mentally	42
Estimate Sums and Differences	43
Add and Subtract Whole Numbers	45
Real World Problems: Add and Subtract	46
Chapter Review	48
Chapter 6: Multiplication and Division of Whole Numbers	50
Getting Ready for Chapter 6	51
Multiplication Properties	51
Relate Multiplication and Division	53
Division Rules for 1 and 0	53
Multiply and Divide Mentally	54
Estimate Products	56
Divide by 2-Digit Divisors	59
Interpret Remainders	61
Chapter Review	64
Chapter 7: Mixed Operations	66
Multi-Step Problems	67
Problem Solving: Unitary Method	69
Unequal Sharing	70
Chapter Review	72
Chapter 8: Understanding Fractions	74
Getting Ready for Chapter 8	75
Represent Fractions	75
Fraction of a Set	78
Mixed Numbers and Improper Fractions	79
Equivalent Fractions	81
Lowest Equivalent Form	84
Compare and Order Fractions	85
Chapter Review	89

Chapter 9: Add and Subtract Fractions	91
Getting Ready for Chapter 9	92
Add and Subtract Fractions with Like Denominators	92
Add Fractions to a Whole Number	93
Subtract Fractions from a Whole Number	94
Add Fractions with One Denominator a Multiple of the Other	96
Subtract Fractions with One Denominator a Multiple of the Other	98
Add and Subtract Fractions and Mixed Numbers	99
Number Patterns with Fractions	105
Chapter Review	106
Chapter 10: Multiply and Divide Fractions	108
Getting Ready for Chapter 10	109
Multiply Fractions by Whole Numbers	109
Fractional Parts of a Set	111
Multiply Fractions	113
Multiply Mixed Numbers	115
Relate Fractions to Division	118
Divide A Whole Number by a Fraction	119
Divide Fractions by Whole Numbers	123
Divide a Fraction by a Fraction	125
Number Patterns with Fractions	126
Chapter Review	127
Chapter 11: Understanding Decimals	129
Getting Ready for Chapter 11	130
Fractions and Decimals – Tenths	130
Decimal Place Value – Tenths	133
Fractions and Decimals – Hundredths	134
Common Fractions and Decimal Equivalents	139
Decimal Place Value – Hundredths	140
Relate Decimals and Money	144
Compare and Order Decimals	146
Round Decimals	149
Chapter Review	150
Chapter 12: Operations with Decimals	153
Getting Ready for Chapter 12	154

Estimate Decimal Sums and Differences	154
Add and Subtract Decimals through Hundredths	156
Multiply Decimals and Whole Numbers	159
Multiply Decimals by Decimals	165
Divide Decimals by Whole Numbers	167
Decimal Patterns	172
Chapter Review	172

Chapter 13: Rates	175
Getting Ready for Chapter 13	176
Rates	176
Chapter Review	179

Chapter 14: Money and Money Transactions	181
Getting Ready for Chapter 13	182
Money	182
Bills	185
Profit and Loss	187
Unit Cost	189
Best Buy	191
Time and Payment Rates	193
Chapter Review	194

Chapter 15: Percent	197
Getting Ready for Chapter 15	198
Percent, Fractions and Decimals	198
Compare and Order Fractions, Decimals and Percents	208
Percent of a Quantity	210
Compare Percentages of Quantities	213
Quantity as Percentage of Another	214
Use Mental Strategies	216
Chapter Review	217

Chapter 16: Applying Percentages	219
Getting Ready for Chapter 16	220
Discount	220
Commission	222
Taxes	223
Simple Interest	225

Chapter Review	227
Chapter 17: Wages and Salary	229
Getting Ready for Chapter 17	230
Hourly Rates and Daily Pay	230
Weekly Rates	232
Overtime Payment	233
Chapter Review	234
Chapter 18: Direct Proportion	236
Getting Ready for Chapter 18	237
Direct Proportion	237
Chapter 19: Understanding the Metric System	239
Getting Ready for Chapter 19	240
Metric Units of Length	240
Conversion – Units of Lengths	241
Metric Units of Mass	243
Conversion – Units of Mass	244
Metric Units of Capacity	245
Conversion – Units of Capacity	246
Chapter Review	247
Chapter 20: Measure Length	248
Getting Ready for Chapter 20	249
The Millimetre	249
Estimate, Measure and Record Lengths	250
Use the Appropriate Unit	254
Compare Lengths	254
Approximate Distances and Lengths	255
Calculation in Metres	256
Solve Problems in Measurement	258
Chapter Review	259
Chapter 21: Perimeter	261
Getting Ready for Chapter 21	262
Model Perimeter	262
Measure and Calculate Perimeter	264
Use a Formula to Find the Perimeter	265
Apply the Formula with Simple Composite Figures	267

Find One Side Given the Perimeter	269
Draw Rectangles and Squares for Given Perimeters	270
Solve Problems in Perimeter	272
Chapter Review	273

Chapter 22: Measure Mass 275

Getting Ready for Chapter 22	276
Estimate Mass	276
Measure Mass in Grams and Kilograms	278
Compare and Order Mass	280
Calculation in Grams	282
Calculate Unknown Mass on a Balance	284
Solve Problems in Measurement	285
Chapter Review	285

Chapter 23: Measure Capacity 287

Getting Ready for Chapter 23	288
Estimate Capacity	288
Solve Problems in Capacity	290
Chapter Review	290

Chapter 24: Area 292

Getting Ready for Chapter 24	293
Measure Area	293
Approximate Area of Surfaces	297
Use Area Models to find Area	298
Use a Formula to Find Area	299
Area of Compound Shapes	300
Multi-Step Problems Involving Area	301
Chapter Review	302

Chapter 25: Time 304

Getting Ready for Chapter 25	305
Units of Time	305
Read and Record Time on Digital and Analog Clocks	306
The 24 Hour Clock	308
Convert Units of Time	311
Computation of Units of Time	312
Elapsed Time	314

Interpret Time Schedules	315
Chapter Review	317
Chapter 26: Lines, Angles and Triangles	318
Getting Ready for Chapter 26	319
Lines	319
Angles	321
Classify Triangles	325
Chapter Review	327
Chapter 27: Plane Shapes	329
Getting Ready for Chapter 27	330
Identify and classify Plane Shapes	330
Classify Quadrilaterals	333
Sketch Quadrilaterals	335
Patterns with Plane Shapes	336
Chapter Review	338
Chapter 28: Symmetry	340
Getting Ready for Chapter 28	341
Line Symmetry	341
Draw Lines of Symmetry	342
Complete Symmetrical Shapes	345
Solve Problems Involving Symmetry	346
Chapter Review	347
Chapter 29: Solids	348
Getting Ready for Chapter 29	349
Properties of Solids	349
Model Solids	351
Cross Section of Solid Figures	352
Drawing Solids	354
Chapter Review	355
Chapter 30: Measure Volume	356
Getting Ready for Chapter 30	357
Describe Volume	357
Explore Volume of Cubes and Cuboids	358
Use Standard Units to Measure Volume	360
Apply Volume Formulas	362

Compare and Order Volume	364
Relationship between Capacity and Volume	366
Solve Problems in Volume	368
Chapter Review	368
Chapter 31: Statistics	370
Getting Ready for Chapter 31	371
Formulate Questions	371
Collect and Record Data	372
Represent Data Using Graphs	374
Mode	377
Mean	379
Interpret Data in Charts, Tables and Graphs	382
Chapter Review	386
Practice Test 1	388
Practice Test 2	401
Practice Test 3	415
Practice Test 4	428
Practice Test 5	442

