Add integers to find a diver’s position, pp. 29–30
Solving Equations

Math in the Real World 60

Chapter Prerequisite Skills 62

2.1 Properties and Operations 63

2.2 The Distributive Property 71

2.3 Simplifying Variable Expressions 78
  - Technology Activity: Simplifying Expressions, 83

Mid-Chapter Quiz 84

2.4 Variables and Equations 85

2.5 Solving Equations Using Addition or Subtraction 91
  - Concept Activity: Modeling Addition Equations, 90

2.6 Solving Equations Using Multiplication or Division 97
  - Concept Activity: Modeling Multiplication Equations, 96

2.7 Decimal Operations and Equations with Decimals 102

Project: Measuring Indirectly 114

Assessment
  - Standardized Test Practice, 68, 75, 82, 89, 95, 101, 107
  - Mid-Chapter Quiz, 84
  - Chapter Review, 108
  - Chapter Test, 112
  - Chapter Standardized Test, 113

Use algebra to find dimensions of a llama pen, p. 75
CHAPTER 3

Multi-Step Equations and Inequalities

Math in the Real World 116

Chapter Prerequisite Skills 118

3.1 Solving Two-Step Equations 120
   Concept Activity: Modeling Two-Step Equations, 119

3.2 Solving Equations Having Like Terms and Parentheses 125

3.3 Solving Equations with Variables on Both Sides 131
   Concept Activity: Modeling Equations with Variables on Both Sides, 130
   Technology Activity: Solving Equations, 136

Mid-Chapter Quiz 137

3.4 Solving Inequalities Using Addition or Subtraction 138

3.5 Solving Inequalities Using Multiplication or Division 144
   Concept Activity: Multiplication and Division Properties of Inequality, 143

3.6 Solving Multi-Step Inequalities 149

Assessment
   Standardized Test Practice, 124, 129, 135, 142, 148, 153
   Mid-Chapter Quiz, 137
   Chapter Review, 154
   Chapter Test, 158
   Chapter Standardized Test, 159

Use an equation to find rafting costs, p. 123
UNIT 2 Rational Numbers and Proportions  CHAPTERS 4–7

CHAPTER 4 Factors, Fractions, and Exponents

Math in the Real World  168

Chapter Prerequisite Skills  170

4.1 Factors and Prime Factorization  172

• Concept Activity: Finding Prime Numbers, 171

4.2 Greatest Common Factor  177

4.3 Equivalent Fractions  182

4.4 Least Common Multiple  187

Mid-Chapter Quiz  192

4.5 Rules of Exponents  194

• Concept Activity: Finding Rules of Exponents, 193

4.6 Negative and Zero Exponents  199

4.7 Scientific Notation  204

• Technology Activity: Using Scientific Notation, 209

Assessment

• Standardized Test Practice, 176, 181, 186, 191, 198, 203, 208

• Mid-Chapter Quiz, 192

• Chapter Review, 210

• Chapter Test, 214

• Chapter Standardized Test, 215

Use fractions to compare snowboarding data, p. 188
CHAPTER 5

Rational Numbers and Equations

Math in the Real World 216

Chapter Prerequisite Skills 218

5.1 Rational Numbers 219

5.2 Adding and Subtracting Like Fractions 225

5.3 Adding and Subtracting Unlike Fractions 231

• Concept Activity: Combining Fractions with Different Denominators, 230

Mid-Chapter Quiz 236

5.4 Multiplying Fractions 237

5.5 Dividing Fractions 243

• Concept Activity: Dividing Rational Numbers, 242

5.6 Using Multiplicative Inverses to Solve Equations 247

• Technology Activity: Solving Equations with Fractions, 252

5.7 Equations and Inequalities with Rational Numbers 253

Assessment

• Standardized Test Practice, 224, 229, 235, 241, 246, 251, 257
• Mid-Chapter Quiz, 236
• Chapter Review, 258
• Chapter Test, 262
• Chapter Standardized Test, 263

Multiply fractions to extend a recipe, p. 241
Use a proportion to find how much an elephant eats, pp. 275, 277
CHAPTER 7

Percents

Math in the Real World 326

Chapter Prerequisite Skills 328

7.1 Percents and Fractions 329

7.2 Percents and Proportions 335
  • Concept Activity: Using Percent Bar Models, 334

7.3 Percents and Decimals 340

7.4 The Percent Equation 345

Mid-Chapter Quiz 350

7.5 Percent of Change 352
  • Concept Activity: Modeling Percent of Change, 351

7.6 Percent Applications 357

7.7 Simple and Compound Interest 362
  • Technology Activity: Computing Compound Interest, 367

Assessment
  • Standardized Test Practice, 333, 339, 344, 349, 356, 361, 366
  • Mid-Chapter Quiz, 350
  • Chapter Review, 368
  • Chapter Test, 372
  • Chapter Standardized Test, 373

Apply percents to chess, p. 332
UNIT 3 Functions, Geometry, and Measurement  CHAPTERS 8–10

CHAPTER 8 Linear Functions

Math in the Real World  382

Chapter Prerequisite Skills  384

8.1 Relations and Functions  385

8.2 Linear Equations in Two Variables
   - Technology Activity: Graphing Linear Equations, 397  391

8.3 Using Intercepts  398

8.4 The Slope of a Line
   - Concept Activity: Investigating Slope, 403  404

8.5 Slope-Intercept Form  412

Mid-Chapter Quiz  418

8.6 Writing Linear Equations
   - Technology Activity: Finding Best-Fitting Lines, 425  419

8.7 Function Notation  426

8.8 Systems of Linear Equations  431

8.9 Graphs of Linear Inequalities  436

Assessment
   - Standardized Test Practice, 390, 396, 402, 409, 417, 424, 430, 435, 441
   - Mid-Chapter Quiz, 418
   - Chapter Review, 442
   - Chapter Test, 446
   - Chapter Standardized Test, 447

Use a graph to find the speed of a wakeboarder, p. 406
CHAPTER 9
Real Numbers and Right Triangles

Math in the Real World 450

Chapter Prerequisite Skills 452

9.1 Square Roots 453
9.2 Simplifying Square Roots 458
9.3 The Pythagorean Theorem 465
  • Concept Activity: Investigating Right Triangles, 464
9.4 Real Numbers 470

Mid-Chapter Quiz 475

9.5 The Distance and Midpoint Formulas 476
9.6 Special Right Triangles 483
  • Concept Activity: Investigating Special Right Triangles, 482
9.7 The Tangent Ratio 489
  • Technology Activity: Inverse Sine, Cosine, and Tangent, 499
9.8 The Sine and Cosine Ratios 494
  • Technology Activity: Inverse Sine, Cosine, and Tangent, 499

Project: Designing a Ramp 506

Assessment
  • Standardized Test Practice, 457, 461, 469, 474, 481, 487, 493, 498
  • Mid-Chapter Quiz, 475
  • Chapter Review, 500
  • Chapter Test, 504
  • Chapter Standardized Test, 505

Apply square roots to determine film speeds, p. 456
CHAPTER 10

Measurement, Area, and Volume

Math in the Real World 508

Chapter Prerequisite Skills 510

10.1 Triangles 511

10.2 Polygons and Quadrilaterals 516

10.3 Areas of Parallelograms and Trapezoids 521

10.4 Circumference and Area of a Circle 528
  ▪ Concept Activity: Investigating Circles, 527

Mid-Chapter Quiz 534

10.5 Surface Areas of Prisms and Cylinders 538
  ▪ Concept Activity: Nets and Surface Area, 537

10.6 Surface Areas of Pyramids and Cones 544

10.7 Volumes of Prisms and Cylinders 552
  ▪ Concept Activity: Building and Sketching Solids, 550
  ▪ Technology Activity: Surface Area and Volume, 557

10.8 Volumes of Pyramids and Cones 558

Assessment
  ▪ Standardized Test Practice, 515, 520, 526, 533, 543, 549, 556, 563
  ▪ Mid-Chapter Quiz, 534
  ▪ Chapter Review, 564
  ▪ Chapter Test, 568
  ▪ Chapter Standardized Test, 569

UNIT 3 Assessment

Building Test-Taking Skills:
  Context-Based Multiple Choice Questions, 570
Practicing Test-Taking Skills, 572
Cumulative Practice, 574

Use geometry to find kite dimensions, p. 515
UNIT 4 Data Analysis, Polynomials, and Transformations  CHAPTERS 11–13

CHAPTER 11 Data Analysis and Probability

Math in the Real World 578

Chapter Prerequisite Skills 580

11.1 Stem-and-Leaf Plots and Histograms 581
• Technology Activity: Making a Histogram, 587

11.2 Box-and-Whisker Plots 588
• Technology Activity: Making a Box-and-Whisker Plot, 593

11.3 Using Data Displays 596

11.4 Collecting Data 601
• Technology Activity: Searching for Data, 606

11.5 Interpreting Data 609
• Concept Activity: Investigating Random Samples, 608

Mid-Chapter Quiz 614

11.6 Permutations 615

11.7 Combinations 620

11.8 Probabilities of Disjoint and Overlapping Events 627
• Concept Activity: Counting with Venn Diagrams, 626

11.9 Independent and Dependent Events 634
• Concept Activity: Performing a Simulation, 633

Project: Conducting a Survey 646

Assessment
• Standardized Test Practice, 586, 592, 600, 605, 613, 619, 625, 632, 639
• Mid-Chapter Quiz, 614
• Chapter Review, 640
• Chapter Test, 644
• Chapter Standardized Test, 645

Apply combinations to count basketball matchups, p. 620
Math in the Real World 648

Chapter Prerequisite Skills 650

12.1 Polynomials 651
12.2 Adding and Subtracting Polynomials 657
   ▪ Concept Activity: Modeling Polynomial Addition, 656
12.3 Multiplying Monomials and Polynomials 662
12.4 Multiplying Binomials 668
   ▪ Concept Activity: Modeling Binomial Multiplication, 667

Mid-Chapter Quiz 673

12.5 Other Rules of Exponents 674
12.6 Quadratic Functions 679
   ▪ Technology Activity: Graphing Quadratic Functions, 685
12.7 Exponential Growth and Decay 686
12.8 Sequences 692

Assessment
   ▪ Standardized Test Practice, 655, 661, 666, 672, 678, 684, 691, 697
   ▪ Mid-Chapter Quiz, 673
   ▪ Chapter Review, 698
   ▪ Chapter Test, 702
   ▪ Chapter Standardized Test, 703

Use polynomials to find the height of a golf ball, p. 654
CHAPTER 13

Angle Relationships and Transformations

Math in the Real World 706

Chapter Prerequisite Skills 708

13.1 Angle Relationships 709

13.2 Angles and Parallel Lines 716

13.3 Angles and Polygons 722
  • Concept Activity: Finding Sums of Angle Measures, 721

Mid-Chapter Quiz 728

13.4 Translations 729

13.5 Reflections and Symmetry 734
  • Technology Activity: Reflecting in a Line, 739

13.6 Rotations and Symmetry 741
  • Concept Activity: Rotating a Segment, 740

13.7 Dilations 747

Assessment
  • Standardized Test Practice, 713, 720, 727, 733, 738, 746, 751
  • Mid-Chapter Quiz, 728
  • Chapter Review, 752
  • Chapter Test, 756
  • Chapter Standardized Test, 757

Internet Resources
CLASSZONE.COM
  eEdition Plus Online
  eWorkbook Plus Online
  eTutorial Plus Online
  State Test Practice
  More Examples

Reading, Writing, and Notetaking
  Vocabulary, 708, 711, 718, 725, 731, 736, 744, 749, 752
  Reading Algebra, 730
  Reading Geometry, 741
  Writing, 712, 720, 725, 726, 733, 738, 750
  Notetaking, 708, 717, 749

Student Help
  Study Strategy, 717, 731, 734, 735, 742, 747
  Homework Help, 711, 719, 725, 732, 736, 744, 750
  Tech Help, 739
  Student Reference: Constructions, 714

Problem Solving
  Guided Problem Solving, 711, 718, 725
  Extended Problem Solving, 719, 726, 737, 745, 751
  Challenge, 713, 720, 727, 733, 738, 746, 751

UNIT 4 Assessment

End-of-Course Test, 765

Analyze angles in chair design, p. 719
Contents of Student Resources

Skills Review Handbook  770

Estimation
Place Value and Rounding, 770 • Estimating Sums and Differences, 771 • Estimating Products and Quotients, 772

Decimals
Comparing and Ordering Decimals, 773 • Adding and Subtracting Decimals, 774 • Multiplying Decimals, 775 • Dividing Decimals, 776

Fractions
Modeling Fractions, 777 • Mixed Numbers and Improper Fractions, 778 • Adding and Subtracting Fractions, 779 • Multiplying Fractions and Whole Numbers, 780

Data Analysis
Reading Bar Graphs, 781 • Reading Line Graphs, 782 • Reading Circle Graphs, 783 • Venn Diagrams and Logical Reasoning, 784

Geometry and Measurement
Basic Geometric Figures, 785 • Units of Length, 786 • Using a Ruler, 787 • Measuring Lengths, 788 • Units of Area and Volume, 789 • Units of Weight and Mass, 790 • Units of Capacity, 791 • Using a Protractor, 792 • Classifying Angles, 793 • Using a Compass, 794

Problem Solving
Draw a Diagram, 795 • Look for a Pattern, 796 • Guess, Check, and Revise, 797 • Act It Out, 798 • Make a List or Table, 799 • Solve a Simpler or Related Problem, 800 • Work Backward, 801 • Break into Parts, 802

Extra Practice  803
Chapters 1–13

Tables  816
Symbols, 816 • Measures, 817 • Formulas, 818 • Properties, 820 • Squares and Square Roots, 822 • Trigonometric Ratios, 823

Glossary  824

Index  850

Credits  879

Selected Answers  SA1