REPORTING CATEGORY 1—NUMBERS, OPERATIONS, AND QUANTITATIVE REASONING

TOPIC A: Different Forms of Numbers for Different Situations
PART 1: Comparing and Ordering Rational Real Numbers (8.1)(A)R
PART 2: Using Rational Numbers to Solve Real-Life Problems (8.1)(B)S
PART 3: Approximating the Value of Irrational Numbers (8.1)(C)S
PART 4: Scientific Notation (8.1)(D)S
  Section a: Writing Numbers in Scientific Notation
  Section b: Translating Numbers from Scientific Notation into Standard Form
  Section c: Comparing Numbers Written in Scientific Notation

TOPIC B: Operations Involving Rational Numbers
PART 1: Selecting Appropriate Operations to Solve Problems (8.2)(A)S
  Section a: Addition of Rational Numbers
    ◇ Adding Whole Numbers
    ◇ Adding Fractions
    ◇ Adding Decimals
  Section b: Subtraction of Rational Numbers
    ◇ Subtracting Whole Numbers
    ◇ Subtracting Fractions
    ◇ Subtracting Decimals
  Section c: Multiplication of Rational Numbers
    ◇ Multiplying Whole Numbers
    ◇ Multiplying Fractions
    ◇ Multiplying Decimals
  Section d: Division of Rational Numbers
    ◇ Dividing Whole Numbers
    ◇ Dividing Fractions
    ◇ Dividing Decimals

PART 2: Using Appropriate Operations to Solve Problems (8.2)(B)R
  Section a: Addition Word Problems
  Section b: Subtraction Word Problems
  Section c: Multiplication Word Problems
  Section d: Division Word Problems

PART 3: Evaluating a Solution for Reasonableness (8.2)(C)S

PART 4: Multiplication by a Given Constant Factor (8.2)(D)S
  Section a: Unit Rate
  Section b: Dry Measure (Conversion of Units)
  Section c: Liquid Measure (Conversion of Units)
  Section d: Speed Conversions
  Section e: Distance/Length Conversions
  Section f: Weight Conversions
  Section g: Temperature Conversions
  Section h: Volume Conversions
REPORTING CATEGORY 2—PATTERNS, RELATIONSHIPS, AND ALGEBRAIC REASONING

TOPIC A: Proportional and Non-Proportional Linear Relationships
- PART 1: Comparing and Contrasting Proportional and Non-Proportional Linear Relationships (8.3)(A)S
- PART 2: Estimating and Finding Solutions to Application Problems (8.3)(B)R
  - Section a: Proportion Application Problems
  - Section b: Tax Percentage
  - Section c: Interest Rate
  - Section d: Sale Price
  - Section e: Commission
  - Section f: Gratuity
  - Section h: Scale Factor
  - Section i: Similar Figures

TOPIC B: Representations of Numerical Relationships (8.4)(A)R
- PART 1: Verbal Representations
- PART 2: Graphical Representations

TOPIC C: Using Representations to Make Predictions and Solve Problems
- PART 1: Predicting, Finding, and Justifying Solutions to Situations (8.5)(A)R
  - Section a: Determining Patterns in Data
  - Section b: Writing and Evaluating Algebraic Expressions
  - Section c: Writing Algebraic Equations and Inequalities
  - Section d: Using Representations to Make Predictions
  - Section e: Using Representations to Solve Real-World Problems
- PART 2: Algebraic Expressions Representing Arithmetic Sequences (8.5)(B)S

REPORTING CATEGORY 3—GEOMETRY AND SPATIAL REASONING

TOPIC A: Transformational Geometry
- PART 1: Generating Similar Figures Using Enlargements and Reductions (Dilations) (8.6)(A)R
- PART 2: Graphing Dilations, Reflections, and Translations on a Coordinate Plane (8.6)(B)S
  - Section a: Dilations
  - Section b: Reflections
  - Section c: Translations

TOPIC B: Geometric Concepts and Properties in Real-Life Situations
- PART 1: Drawing Three-Dimensional Figures from Different Perspectives (8.7)(A)S
- PART 2: Using Geometric Concepts to Solve Problems in Fields Such as Art and Architecture (8.7)(B)S
- PART 3: Using Pictures or Models to Demonstrate the Pythagorean Theorem (8.7)(C)S
- PART 4: Locating and Naming Points on a Coordinate Plane Using Rational Numbers (8.7)(D)S

REPORTING CATEGORY 4—MEASUREMENT

TOPIC A: Measures of Three-Dimensional Figures
- PART 1: Net of a Figure (8.8)(A)S
- PART 2: Lateral and Total Surface Area (8.8)(A)S
  - Section a: Area of Prisms
  - Section b: Area of Pyramids
  - Section c: Area of Cylinders
- PART 3: Volume (8.8)(B)S
  - Section a: Volume of Prisms
  - Section b: Volume of Cylinders
  - Section c: Volume of Pyramids
  - Section d: Volume of Spheres
  - Section e: Volume of Cones
  - Section a: Estimating and Solving Area Problems
  - Section b: Estimating and Solving Volume Problems

TOPIC B: Indirect Measurement
- PART 1: Using the Pythagorean Theorem to Solve Real-Life Problems (8.9)(A)R

TOPIC C: Effect of Dimensional Changes on Linear, Area, and Volume Measures
- PART 1: Effects on Perimeter and Area of Proportional Changes in Shape (8.10)(A)S
- PART 2: Effect on Volume of Proportional Changes of Dimensions of a Solid (8.10)(B)S
REPORTING CATEGORY 5—PROBABILITY AND STATISTICS

TOPIC A: Concepts of Theoretical and Experimental Probability
   PART 1: Probability of Dependent and Independent Events (8.11)(A)R
   PART 2: Predictions Based on Theoretical Probabilities and Experimental Results (8.11)(B)S

TOPIC B: Using Statistical Procedures to Describe Data
   PART 1: Describing a Set of Data Using Central Tendency or Range (8.12)(A)S
   Section a: Mean (Average)
   Section b: Median
   Section c: Mode
   Section d: Range
   PART 2: Analyzing Scatter Plot Data (8.12)(B)S
   PART 3: Presenting and Displaying Relationships Among Collected Data (8.12)(C)S
   Section a: Line Graphs
   Section b: Stem-and-Leaf Plots
   Section c: Circle Graphs
   Section d: Bar Graphs
   Section e: Box-and-Whisker Plots
   Section f: Frequency Tables and Histograms
   Section g: Venn Diagrams

TOPIC C: Evaluating Predictions and Conclusions Based on Statistical Data
   PART 1: Validity of Sampling Methods (8.13)(A)S
   PART 2: Misuses of Graphical or Numerical Data (8.13)(B)R

CHAPTER 6—UNDERLYING PROCESSES AND MATHEMATICAL TOOLS

TOPIC A: Applying Grade 8 Math to Solve Real-Life Problems
   PART 1: Identifying and Applying Mathematics to Real-Life Experiences (8.14)(A)PS
   PART 2: Justifying Reasonableness of Answers (Estimation) (8.14)(B)PS
   PART 3: Problem Solving Strategies (8.14)(C)PS

TOPIC B: Communicating Mathematical Ideas (8.15)(A)PS

TOPIC C: Making Conjectures Using Logical Reasoning and Verifying Conclusions
   PART 1: Making Conjectures from Patterns or Sets of Examples and Nonexamples (8.16)(A)PS
   PART 2: Validating Conclusions Using Mathematical Properties and Relationships (8.16)(B)PS

APPENDIX—HOW TO ADD MATH GRIDS & TABLES TO AN EXAM