Mathematics RIT Score: 221-230

Number Sense and Operations
Whole Numbers · Solve for missing addends in an addition or subtraction sentence · Develop computational fluency with division facts · Divide multi-digit numbers using a calculator · Introduce the math strategy of compatible numbers in estimating for all four operations
Fractions · Add and subtract fractions with like denominators; change improper fractions to mixed numbers · Change a fractional numeral to its simplest form (lowest terms) · Subtract fractions having unlike denominators, answer in lowest terms · Add and subtract whole numbers, fractions and mixed numbers · Use estimation to solve problems involving mixed numbers · Divide a whole number, fraction or mixed number by a mixed number
Decimals · Relate fractions to decimals · Subtract whole numbers and decimals to the hundredths place (same number of digits) · Write a number sentence to solve one-step word problems involving the operations of addition, subtraction, and multiplication of fractions and decimals · Write a decimal or mixed decimal for a fraction (2/ 3=0.66) · Subtract decimals through hundred-thousandths with a calculator · Multiply a decimal by multiples of 10, 100, or 1000 · Divide a whole number (or decimal) by a decimal to thousandths
Percent · Write a ratio (fraction) as a percent and percent as a ratio (fraction: denominators are factors of 100) · Find the percent one number is of another (20 is what % of 90) · Find a number from a percent (4 is 9% of what number)
Integers · Divide integers, like signs
New Vocabulary in this range: product, divide, most, if – then, compute, lowest terms
New Signs and Symbols: none
Fractions, Ratio and Proportion · Model and write numerical fractions · Understand the concept of ratio using concrete and pictorial models · Identify the least common denominator for 3 or more fractions: list the multiples or prime factorization · Determine if a pair of ratios is equal or not equal using the equivalent fractions method · Write the missing number in 2 equivalent ratios

· Solve proportions using the cross product method

Decimals
· Identify and order decimal and fractional coordinates on a number line

Percents
· Write a ratio (fraction) as a percent and a percent as a ratio (fraction): denominators of 100

Integers
· Understand the meaning of integers

Place Value, Expanded and Standard Notation
· Match word names to numerals to the hundred thousands in decimals

Ordering, Equalities and Inequalities
· Order a set of integers from least to greatest

Exponents and Scientific Notation
· Identify and use powers of 10

Square Roots
· Evaluate expressions using square roots

New Vocabulary in this Range:
always true, proportion, multiply, between, tens digit, standard numeral, ratio

New Signs and Symbols:
none

Patterns, Functions, and Algebra

Patterns, Sequences, Functions
· Complete a function table according to a rule
· Recognize and continue a number pattern and/ or geometric representation (e.g. Fibonacci sequence, triangular numbers)
· State a rule to explain a number pattern, including arithmetic progression
· Investigate geometric patterns and relationships and describe them algebraically

Solving Equations and Inequalities, Simplifying Expressions, Order of Operations
· Use boxes or other symbols to stand for any number in expressions or equations
· Solve whole number equations with one variable (multiplication and division)
· Solve integer equations (one step, all four operations)
· Solve equations involving more than one operation
· Definition and application of absolute value
· Solve one-step linear equations in one variable using addition, subtraction, multiplication, and division with integer solutions
· Simplify numeric expressions by applying properties of rational numbers (e.g. identity, inverse, distributive, associative, commutative)

New Vocabulary in this Range:
absolute value, evaluate, quotient

New Signs and Symbols:
square root symbol, %, absolute value symbol

Measurement

Length, Weight, Volume

· Measure length with metric measures (centimeter)

· Measure length with customary measures (inch)

· Select the appropriate unit of measure for length, area, and volume

Area, Perimeter, Circumference

· Analyze circles: center, chord, diameter, radius, arc, semicircle, and circumference

· Find the missing angle measurement in a triangle when two angles are known

New Vocabulary in this Range:
reasonable, formula, segment BC, pi, radius squared, diameter, metric units, quarts, gallons, rectangular box, base, rate

New Signs and Symbols:
oz = ounces, C = circumference

Geometry and Spatial Sense

Shapes and Figures, 2- and 3-dimensional

· Analyze solid figures: rectangular prism, triangular prism, triangular pyramid, square, pyramid (faces, edges and vertices)

· Classify polygons by sides and angles

Congruency and Similarity

· Identify congruent triangles according to corresponding parts (SSS, SAS, ASA)

Geometric Properties and Terminology

· Identify the center, radius and diameter of a circle

· Measure angles using a protractor

· Classify angles: supplementary and complementary

· Classify angles: adjacent, vertical, corresponding, and supplementary

New Vocabulary in this Range:
radius, polygon, circumference, trapezoid, rectangular box, equilateral, similar, obtuse angle, straight angle, slide

New Signs and Symbols:
angle symbol, label for line – L1

Data Analysis, Statistics, and Probability

Probability and Prediction

· Investigate experimental probability of an event using a coin or spinner

Statistics

· Know the concepts of mode, median, and mean; compute and compare them in simple examples to demonstrate that these measures of central tendency may differ for a given set of data

Combinations and Permutations

· Use a tree diagram to determine the number of possible outcomes of an event

Graphing

· Interpret data given in horizontal and vertical bar graphs to solve problems

· Graph ordered pairs in all four quadrants (coordinate geometry)

New Vocabulary in this Range:

even numbers, mean, median, integer, intersection, table, frequency, origin, quadrant

New Signs and Symbols:

none

Problem Solving

· Choose and use an appropriate problem solving strategy: Draw a picture, Make a model, Guess and test, Make a list, Make a table, Find a pattern, Work backwards, Solve a simpler problem, Draw a diagram, or Write an equation

· Select the appropriate unit of measure for length and area

· Write and solve an equation using ratios, given a word problem

· Write and solve an equation for a word problem

· Analyze circles: center, chord, diameter, radius, arc, semicircle, and circumference

· Solve simple interest problems (amount x rate x time)

· Use estimation to determine if solutions to word problems are reasonable

· Predict outcomes using probability

New Vocabulary in this Range:

mortality, odometer, magic square, deducted, less than twice, addends, less than sum, rectangle, diameter, radius, label (units), area, perimeter

New Signs and Symbols:

I = prt