GLENCOE

Correlation

Pre-Algebra

UTAH

Pre-Algebra Standards

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PRE-ALGEBRA

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Pre-algebra

OBJECTIVES	PAGE REFERENCES
Standard 1: Students will acquire number sense and perform operations with rational numbers.	
Objective 1.1: Compute fluently and make reasonable estimates.	
1. Compute using selected methods from among mental arithmetic, estimation, paper and pencil, and calculator.	SE: 294-295, 437-438 *Spreadsheet Investigation* 137, 303 TWE: IE 294, 437
2. Add, subtract, multiply, and divide integers.	SE: 64-68, 70-74, 75-79, 80-84 *Algebra Activity* 62-63 TWE: IE 65-66, 71, 76, 81
3. Check the reasonableness of results using estimation.	SE: 25-26, 29, 31, 82, 99, 127, 586, 684
4. Justify the steps used in solving problems using correct notation.	SE: 6-8, 28-30, 47-48
Objective 1.2: Represent rational numbers in a variety of ways.	
1. Recognize and create equivalent forms of a rational number.	SE: 200-204, 205-209, 281-284 TWE: IE 282, 283
2. Find an approximate location of a rational number on a number line.	SE: 202, 203 #44 TWE: DI 202
3. Find a rational number between any two rational numbers.	SE: 209 #52
4. Choose appropriate and convenient forms of rational numbers for solving problems and representing solutions.	SE: 200-204, 205-209, 259 #9 TWE: IE 201, 206
5. Represent very large and very small numbers using scientific notation.	SE: 186-190, 194, 195 #26 TWE: DI 187 IE 187
Objective 1.3: Identify relationships among rational numbers and operations involving these numbers.	
1. Compare and order rational numbers.	SE: 202-203, 228, 229 #52, 257, 259 #11 TWE: IE 201
2. Identify the effects of arithmetic operations among fractions, decimals, percents, and integers; e.g., multiplying or dividing by a number larger or smaller than 1.	SE: 219 #52
3. Recognize and use the special multiplication properties of zero.	SE: 24, 49, 61 #82
4. Recognize that division by zero is not defined.	SE: 216, 389
5. Recognize and use the inverse relationships of addition and subtraction, multiplication and division, and perfect square roots and squares.	SE: 110, 115, 117, 121, 436
6. Add or multiply numbers using the Commutative and Associative Properties of Addition or	SE: 23-26, 49, 51 #12, 66, 75 TWE: IE 24

Multiplication.	

OBJECTIVES	PAGE REFERENCES
Objective 1.4: Solve problems involving rational numbers using addition, subtraction, multiplication, and division.	
1. Recognize absolute value of a rational number as the value of its distance from zero.	SE: 56-58 TWE: DI 58
2. Evaluate numerical and algebraic expressions containing absolute value.	SE: 56-61, 67 #42, #45, 93 #27 TWE: IE 58
3. Compute with percents, including those greater than 100% and less than 1%.	SE: 281-285, 293-299, 318-319 *Algebra Activity* 286-287 TWE: IE 289
4. Solve problems using simple proportions.	SE: 288-292, 298-302, 317, 321 #8 TWE: DI 290
Standard 2: Students will represent and analyze mathematical situations and properties using patterns, relations, functions, and algebraic symbols.	
Objective 2.1: Use patterns, relations, and functions to represent mathematical situations.	
1. Represent a variety of relations and functions using tables, graphs, manipulatives, verbal rules, or algebraic rules.	SE: 35-37, 50, 51 #21, #22 TWE: IE 35
2. Describe simple patterns using a mathematical rule or algebraic expression.	SE: 375-379 *Reading Mathematics* 380 TWE: IE 376
3. Create and extend simple numeric and visual patterns, including those that have a recursive nature (e.g., Fibonacci numbers, triangular and square numbers).	SE: 249-252, 258, 259 #29 *Algebra Activity* 253 TWE: IE 250
Objective 2.2: Represent, solve, and analyze mathematical situations and properties using algebraic symbols.	
1. Evaluate algebraic expressions when given values for the variable(s).	SE: 17-21, 32, 38, 213 *Spreadsheet Investigation* 22 TWE: IE 18
2. Identify the horizontal and vertical intercepts of a linear relation from a graph or table.	SE: 381-385 TWE: IE 382
3. Determine the slope of a linear relation from a graph or ordered pairs.	SE: 387-391, 429 #10 Algebra Activity 286 TWE: DI 388 IE 389
4. Solve one- and two-step single-variable equations and inequalities.	SE: 120-124, 126-130 TWE: IE 121-122, 127
Objective 2.3: Represent quantitative relationships using mathematical models and symbols.	
1. Create a table, graph, or algebraic expression to represent the relationship between two variables.	SE: 35-37, 50, 369-370, 381-385
2. Graph ordered pairs of rational numbers on a rectangular coordinate system.	SE: 33-38, 51 #20 TWE: IE 34, 35
3. Identify approximate rational coordinates when given the graph of a point on a rectangular coordinate system.	SE: 34-36, 51 #18, #19 TWE: IE 34
4. Model real-world problems using various representations, such as graphs, tables, equations, manipulatives, and pictures.	SE: 103 *Algebra Activity* 62-63, 286-287, 458-459, 505
5. Identify information as pertinent or extraneous	SE: 6-10

within the context of the original problem.	TWE: IE 7

OBJECTIVES	PAGE REFERENCES
Standard 3: Students will recognize, describe, and identify geometric shapes, and solve problems using spatial and logical reasoning, applications of geometric principles, and modeling.	
Objective 3.1: Analyze characteristics and properties of two- and three-dimensional shapes and develop mathematical arguments about geometric relationships.	
1. Identify congruent and similar shapes.	SE: 471-475, 500-504, 545 TWE: IE 501, 502
2. Find missing lengths of similar plane figures using proportions.	SE: 471-475, 486 TWE: DI 473 IE 472, 473
3. Classify two- and three-dimensional objects according to the defining characteristics.	SE: 513-517, 527-531, 556-561 *Reading Mathematics* 526 TWE: IE 514, 528
4. Identify relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects.	SE: 471-475, 486 TWE: IE 472, 473
Objective 3.2: Specify locations and describe spatial relationships using coordinate geometry.	
1. Create and interpret scale drawings.	SE: 276-280, 317, 321 #29 TWE: IE 277 DI 278
2. Represent and explain numerical and algebraic relationships using geometric models, e.g., rectangular models for multiplication.	SE: 148, 210, 215, 439 #51 TWE: DI 222
Objective 3.3: Apply transformations and use symmetry to analyze mathematical situations.	
1. Reflect a geometric shape across a line in a coordinate plane and identify the coordinates of the vertices.	SE: 506, 508-510, 512, 686 TWE: IE 508
2. Translate a geometric shape a given distance on a coordinate plane and identify the vertices.	SE: 506-507, 509-510, 512, 686
Standard 4: Students will understand and apply measurement tools, formulas, and techniques.	
Objective 4.1: Understand measurable attributes of objects and the units, systems, and processes of measurement.	
1. Estimate measurable quantities in both standard and metric units, e.g., a vase holds a little less than a quart or about a liter; a 10K run is about 6 miles.	SE: 718-719
2. Convert from one unit of measure to an equivalent unit of measure using a given conversion factor, e.g., 60 miles/hour × 1 hour/3600 sec × 5280 ft/1mile = 88 ft/sec.	SE: 118 #48, 168, 263, 272, 397 #19, 566 TWE: IE 272
3. Measure angles, perimeter, area, and volume using the correct size and type of units.	SE: 132-136, 447-451, 563-567, 568-572 *Spreadsheet Investigation* 137 TWE: DI 448, 449 IE 448, 449
Objective 4.2: Determine measurements using appropriate techniques, tools, and formulas.	
1. Determine an approximate distance between two points using map scales.	SE: 276
2. Solve problems involving scale factors using ratios and proportions.	SE: 276-280, 321 #29 TWE: DI 278
3. Solve problems involving rates and derived	SE: 264-268, 316, 321 #5

measures, e.g., miles per hour, kilometers per liter, cubic feet.	TWE: IE 265, 266

OBJECTIVES	PAGE REFERENCES
4. Measure inaccessible heights or distances using similar triangles.	SE: 472-475 TWE: DI 472 IE 473
5. Calculate surface area and volume of right prisms and cylinders using appropriate units.	SE: 563-567, 573-577 TWE: IE 564, 565, 574
6. Develop formulas for calculating the circumference of circles and the areas of triangles, parallelograms, and trapezoids.	SE: 520-525, 533, 535 TWE: DI 521
7. Calculate the circumference of circles and the areas of triangles, parallelograms, and trapezoids using formulas.	SE: 522-525, 534-537 TWE: IE 522, 534, 540
Standard 5: Students will draw conclusions using concepts of probability after collecting, organizing, and analyzing a data set.	
Objective 5.1: Formulate and answer questions by collecting, organizing, and analyzing data.	
1. Conduct a survey or experiment to collect data.	SE: *Algebra Activity* 253, 275, 386, 392, 640
2. Organize and display data using graphical representations such as line plots, bar graphs, stem-and-leaf plots, histograms, scatter plots, circle graphs, box plots (box and-whisker plots), and pictographs.	SE: 606-611, 612-616, 617-621, 623-628 TWE: IE 618, 619
3. Make conjectures from a graphical representation.	SE: 40-44, 708, 722-723 *Graphing Calculator Investigation* 45-46 TWE: IE 41-42, 607-608
4. Calculate the mean, median, mode, and range for a data set.	SE: 82, 238-242, 606-611, 735 *Graphing Calculator Investigation* 243 TWE: IE 239-240
5. Choose a measure of central tendency most appropriate to analyze a particular set of data.	SE: 238-242 *Graphing Calculator Investigation* 243
6. Describe how an individual data point may affect the measures of central tendency.	SE: 239, 241 TWE: IE 239
7. Interpret and describe the spread of a set of data, e.g., range, box plot (box-and-whisker).	SE: 617-621, 659, 663 #7 *Graphing Calculator Investigation* 622 TWE: IE 619
8. Make predictions and describe the limitations of the predictions when using data samples.	SE: 312-314, 320, 649, 653 TWE: IE 311, 395, 652
9. Evaluate reported inferences or predictions based on a data set.	SE: *Algebra Activity* 180, 275, 386, 392, 640
Objective 5.2: Apply basic concepts of probability.	
1. Conduct experiments to approximate the probability of simple events.	SE: 650-655 *Algebra Activity* 39, 237, 253, 656-657
2. Recognize that results of an experiment more closely approximate the actual or theoretical probability of an event as the number of trials increases.	SE: 311 *Graphing Calculator Investigation* 315
3. Derive the probability of an event mathematically, e.g., building a table or tree diagram, creating an area model, making a list, or using the basic counting principle.	SE: 310-311, 635-639, 646-648 *Algebra Activity* 640 TWE: IE 636, 647
4. Represent the probability of an event as a	SE: 310-314, 320

fraction, percent, ratio, or decimal.	TWE: IE 311

OBJECTIVES	PAGE REFERENCES
5. Identify mutually exclusive events.	SE: 652 TWE: DI 651, 652
6. Recognize that the sum of the probability of an event and the probability of its complement is equal to one.	TWE: DI 311
7. Determine whether a game or process is fair.	SE: 309, 315

Codes Used for TWE Pages

DI	Daily Intervention
IE	In-Class Examples