



**WASHINGTON**  
**IMPACT Mathematics: Algebra and More**  
**Course 2 © 2004**

GLE Grade 7	Impact Mathematics Course 2 Page References
<b>EALR 1: The student understands and applies the concepts and procedures of mathematics.</b>	
<b>1.1 Understand and apply concepts and procedures from number sense.</b>	
<b>Number and Numeration</b>	
1.1.1 Understand the concept of rational numbers (integers, decimals, fractions).	
Create a model when given a symbolic representation of a rational number. (CU, MC)	SE: 218-219, 230-233  Lab Investigation p. 220-221  TG: 219
Write the rational number when given a model (e.g., number line, area model, situation, diagram, picture). (CU, MC)	SE: 222-228, 236 #22-28
Identify and convert between equivalent forms of rational numbers (e.g., fractions to decimals, percents to fractions). (MC)	SE: 565, 585-587, 590 #1-4, 8, 267 #18
Identify prime, square, or composite numbers. (CU)	SE: 73, 373-374 #13-15  <i>Remember</i> 163
Explain the meaning of rational numbers and give examples.	SE: 222-240  TG: 248
1.1.2 Understand the relative values of rational numbers.	
Compare and order rational numbers using physical models or implementing strategies (e.g., like denominators changing to the same form). (RL < MC)	SE: 90 #22-27, 151, 155, 175 # 74-77, 418 # 45-46, 675 # 12-13
Locate symbolic representations of rational numbers on a model (e.g., a number line, fraction line, decimal grid, and circle graph). (MC)	SE: 222-229, 320 #13-14, 675 #14, 709
Explain the value of a given digit in a rational number (e.g., 2.3 is 2 ones and 3 tenths). (CU)	SE: 113-122, (Impact 1)

1.1.3 Apply properties of addition and multiplication including inverse properties to the rational number system.	
Use the inverse relationships between multiplication and division to simplify computations and solve problems. (SP, RL)	SE: 189 #25-28, 262-263, 265 #5 & 10
Use the inverse properties of addition and multiplication to simplify computations with integers, fractions, and decimals. (SP, RL, MC)	SE: 228-235, 236 #1-40
Identify the inverse elements when using the additive inverse and the multiplicative inverse properties (e.g., $8 + -8 = 0$ ; $2 \times \frac{1}{2} = 1$ ).	SE: 228-235, 236 #1-40
Use the additive inverse property to solve problems. (RL)	SE: 230-233, 239 #41-46
1.1.4 Understand the concept of direct proportion.	
Express proportional relationships using objects, pictures, and symbols. (CU)	SE: 518, 520-528, 532 #1-10, # 25-26  TG: Explore 521  TD 525
Explain the meaning of a proportion. (CU)	SE: 540, 732  <i>Remember 545</i>
Represent a new relationship from a given ratio (e.g., height of a totem pole, maypole). (MC)	SE: 541-543, 555 #1-12  TG: TD 540, Example 546
Represent percentages less than 1% or greater than 100% using objects, pictures, and symbols. (CU)	SE: 481 #35-36, 568, 574
Complete or write a proportion for a given situation. (CU)	SE: 521-524, 529-531, 535 #24, 27-30

Solve problems involving proportions (e.g., determine the number and kinds of baked goods to bring to a bake sale based on proportions of different goods sold at previous bake sales). (SP, MC)	SE: 537 #30, 544-548 TG: Example 544
Use ratios to make predictions about proportions in a future situation. (RL, MC)	SE: 547-548 Set E
<b>Computation</b>	
1.1.5 Understand the meaning of addition and subtraction on integers.	
Explain the meaning of addition and subtraction of integers using real-world models (e.g., reducing debt, temperature increase or decrease, yards gained and lost, movement of a hot-air balloon). CU, MC)	SE: 231-235, 238 #40, 239 #5
Create a problem situation involving addition or subtraction of integers. (CU, MC)	SE: 227 <i>Share and Summarize</i>
Explain or show the meaning of addition or subtraction of integers. (CU)	SE: 218-230, <i>Lab Investigation 220-221</i>
Use technology to demonstrate addition and subtraction with integers	SE: Calculators, Glencoe website ( <i>impactmath.com</i> )
1.1.6 Apply computational procedures with fluency for multiplication and division on non-negative rational numbers.	
Find the product or quotient using non-negative decimals and fractions with unlike denominators.	SE: 342 #40-42, 433 # 60-62
Apply percentages to solve a problem in a variety of situations (e.g., taxes, discounts, interest). (SP, MC)	SE: 562-574 575-582 #1-37
Use multiplication and division to solve real-world problems involving non-negative rational numbers. (SP)	SE: 318 #10, 319 #12, 388 #6
Multiply non-negative decimal numbers to the hundredths place.	SE: 212 #76-81, 252 #51-54, 266 #11-13
Divide non-negative decimal numbers to the thousandths place by non-negative decimal numbers to the hundredths place.	SE: 207-212 (Impact 1)
1.1.7 Understand and apply strategies and tools to complete tasks involving addition and subtraction on integers and the four basic operations on non-negative rational numbers.	

Select and justify the selection of appropriate strategies and tools (e.g., mental computation, estimation, calculators, and paper and pencil) to compute in a problem situation. (SP, RL)	SE: Lab Investigations on pages 203-204, 220-221, 388, 551-553, 608-609
Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator. (MC)	SE: 267 #18, 521-523  TG: <i>Real Life Math</i> 518
Use calculators to add and subtract with integers of two or more digits.	SE: This can be done with any of the problems throughout the Impact program.
Use calculators to compute with decimal numbers with precision from the thousandths place and beyond.	SE: 198-201, 209 #36-38  TG: <i>Think &amp; Discuss</i> 197

### Estimation

1.1.8 Apply estimation strategies to predict or determine the reasonableness of answers in situations involving addition and subtraction of integers and the four basic operations on non-negative rational numbers.

Identify when an approximation is appropriate in situations	SE: 555-556 #9-10
Use estimation strategies prior to operations on non-negative rational numbers to approximate an answer. (RL)	SE: Lab Investigation 551-553
Justify why estimation would be used rather than an exact computation. (CU)	SE: 555 #8
Describe a situation where estimation is sufficient in real-life contexts. (CU, MC)	SE: Lab Investigation 551-553
Use estimation to verify the reasonableness of calculated results. (RL)	SE: 556 #10
Evaluate the appropriateness of estimation in a situation and support the evaluation. (RL).	SE: 550 Set F  TG: Explore 549

### Component 1.2: Understand and apply concepts and procedures from measurement.

#### Attributes, units, and systems

1.2.1 Analyze how a change in a linear dimension affects other linear measurements (perimeter, circumference) and area measurements.	
Describe the relationships among linear dimensions (e.g., radius of a circle, length of a side or base, changes in the diameter affects the amount of deer hide needed to cover a drum face) and area of the figure (e.g., change the radius or length of a side, and check the change in area; describe that change). (CU)	SE: 357 #10, Lab Investigation 1191-121 TG: <i>Think and Discuss</i> 351
Explain changing one, two, or three dimensions in a rectangular prism and how it affects the surface area and volume; give three examples.	SE: 117-119, 123 #5
Solve problems involving the effects of changes in one dimension on area (e.g., given a garden with certain dimensions, make the area of the garden X square units by changing only one dimension of the garden). (SP).	SE: 109-116, 123 #8
1.2.2 There are no GLEs @ 7 <sup>th</sup> grade	
1.2.3 Understand how the unit of measure affects the precision of measurement.	
Select the appropriate measurement tool to match the precision needed (e.g., if needing measurement to the nearest 1/16 inch, select a ruler that has 1/32 increments).	SE: 452-454 Materials for measurement
Explain how the unit selected for a situation can affect the precision of the measurement (e.g., when you have a ruler that has only 1/10 increments, you cannot measure something to the nearest hundredth with confidence of precision)..	SE: 452-454 Materials for measurement
Explain how measurement systems allow for different levels of precision (e.g., millimeters give more precise measurement than centimeters). (CU)	SE: 452-454 Materials for measurement
1.2.4 There are no GLEs	
<b>Procedures, precision, and estimation</b>	
1.2.5 Apply formulas to find measurements of circles, triangles, and rectangular prisms.	
Apply formulas to determine missing measurements for circles, rectangular prisms, and triangles.	SE: 39 #5, 109-110, 122 #4

Explain how to use a formula for finding the area and circumference of a circle (e.g., calculate the area needed to cover a drum face). (CU)	SE: 113, Lab Investigation 119-121, 132, 143, #5, 636 #6
Find and compare the volumes of rectangular prisms that have a given volume (e.g., if two rectangular prisms have the same volume and one has twice the height of the other, determine how the areas of their bases compare.) (RL)	110-116, 123 #7, 124 #10, 125 #11-12.
Justify the standard formula for finding the area of a right triangle (e.g., $\frac{1}{2}$ of a rectangle). (CU)	SE: 271-278, 276-277 #1-12
Use given dimensions to determine surface area and volume.	SE: 109-121, 122-128 #1-17, 32
1.2.6 Understand and apply strategies to obtain reasonable estimates of circle measurements, right triangles, and surface area for rectangular prisms.	
Identify situations in which estimated measures are sufficient. (MC).	SE: 495 #15, 551-553
Estimate circle and triangle measurements	SE: 495 #16, 489
Use common approximations of pi (3.14; $\frac{22}{7}$ ) to calculate the approximate circumference and the area of circles.	SE: 39,113,120, 489, 636, Lab Investigation 119-120
Use or describe a process to find a reasonable estimate of circle measurements (e.g., wrap a string around it). (RL)	SE: Lab Investigation 119-120
Explain why estimation or precise measurement is appropriate in a given situation. (CU)	SE: 37-42
<b>Component 1.3: Understand and apply concepts and procedures from geometric sense.</b>	
<b>Properties and relationships</b>	
1.3.1 Understand the concept of similarity	
Identify corresponding sides and angles of two similar figures.	SE: 448-517, 466 #14-15, 478 #7-19 Lab Investigation 476-477  TG: Example 456
Determine and justify if two figures are similar using the definition of similarity. (CU,RL)	SE: 450-455, 469 #25

Differentiate between similar and congruent figures, either geometric figures or real-world objects, and justify the conclusion. (RL, MC)	SE: 461, 464-465 ##1-5, 467 #18-20, 468 #24
Explain how a scale drawing is an example of similarity. (CU)	SE: 485-488, 492 #1-4 TG: <i>Real Life Math</i> 448 Example 485
1.3.2 Apply understanding of the characteristics of rectangular prisms and circles.	
Identify, describe, compare, and sort figures.	SE: 461, 472, 489
Draw rectangular prisms and circles with specified properties (e.g., circumference of an 18 centimeter quadrilateral having equal sides but no right angles; a triangle with no equal sides). (CU)	SE109-110, 132, 142 #5 TG: Example 132
Use the properties of rectangular prisms and circles to solve problems (e.g., determine which of two rectangular prism-shaped boxes will hold the most cans of food at the food drive and explain how the geometric characteristics affect capacity). (SP, RL, CU, MC)	SE: 143 #1-16
Compare two rectangular prisms based on their characteristics (e.g., compare the geometric characteristics of two rectangular prisms with different dimensions and the same volume). (RL)	SE: 110 Set A TG: <i>Think and Discuss</i> 117
<b>Locations and transformations</b>	
1.3.3 Understand the location of points on a coordinate grid in any of the four quadrants.	
Identify the coordinates of the fourth point to make a rectangle given three points. (RL)	SE: 254-260 TG: <i>Think and Discuss</i> 255
Plot and label ordered pairs in any of the four quadrants. (CU)	SE: 254-256, 265 #1-2, 6

Name the coordinates of a given point in any of the four quadrants.	SE: 259-260, 264 #2, 279 #29
Identify objects or the location of objects on a coordinate grid using coordinates or labels.	SE: 257 Set B TG: Explore 268, <i>Think and Discuss</i> 269
Use technology to locate objects on a two-dimensional grid	SE: graphing calculator, glencoe website: impactmath.com
Use ordered pairs to describe the location of objects on a grid.	SE: 257 Set B, 268
1.3.4 Understand and apply combinations of translations (slides) and reflections (flips) to two-dimensional figures.	
Identify and explain whether a shape has been translated (slid) or reflected (flipped) with or without a grid. (RL, CU)	SE: 288, 292-295, 297 #5-6, 298 #11, 313-315, 322-324 #1-11, 340-345, 346-347 #1-7, 353-354 #1-12 TG: <i>Think and Discuss</i> 313, Example 314, Example 339 (Impact 3)
Use transformations to create congruent figures and shapes in multiple orientations.	SE: 288-296, 297-301 #1-17, 302-308, 309-312 #1-12, 313-318, Lab Investigation 318-321, 322-324 #1-11, 325-327 #13-16, 329-333, 334-337 #1-12, 339-345, 346-350 #1-13, 353-355 #1-16 TG: <i>Think and Discuss</i> 302, Explore 329, Explore 339 (Impact 3)
Find the coordinate pairs for a translation or a reflection across an axis given a shape on a coordinate grid. (RL)	SE: 339-345, 346-351 #1-13 (Impact 3)
Match a shape with its image following one or two transformations (sliding or flipping). (RL)	SE: 292-295, 297 #5-7, 313-315, 322-324, #1-11, 339-345, 346-351 #1-13 (Impact 3)
Use combinations of translations and reflections to draw congruent figures. (RL)	SE: 313-321 TG: Explore 549 (Impact 3)

Use ordered pairs to describe the location of an object on a coordinate grid after a translation and reflection. (CU)	SE: 339-345 (Impact 3)
<b>Component 1.4 Understand and apply concepts and procedures from probability and statistics.</b>	
1.4.1 Understand the concepts of complementary, independent, and mutually exclusive events.	
Determine and explain when events are mutually exclusive (e.g., your grade on a test is an A, B, C). (CU, MC)	SE: 673 #1, 5, 6
Determine and explain when events are complementary (e.g., a person awake or asleep, you pass or fail a test, coin throw—heads or tails). (CU, MC)	SE: 668-671, 672 #2,4, 5, 676-677 TG: <i>Think and Discuss</i> 668, Explore 676
Identify or explain when events are complementary, mutually exclusive, or neither (e.g., spinning a 4 or a 5 but with the possibility of spinning 1, 2, 3, or 6) and explain. (CU)	SE: 672 #3, 6
1.4.2 Understand and apply the procedures for determining the probabilities of multiple trials.	
Calculate the probabilities of independent or mutually exclusive outcomes or events.	SE: 666-667 TG: <i>Think and Discuss</i> 666
Calculate the probability of an event given the probability of its complement.	SE: 686-690 #1-14
Create a game that has an equal probability for all players to win. (SP, MC)	SE: 677 Set B, 679 Set E, 683-685 <i>Share and Summarize</i> 680
Revise a game with unequal probabilities for all players and make it a fair game. (SP, MC)	SE: 677 Set B, 679 Set E, 681 Set F TG: <i>Think and Discuss</i> 681
Determine, interpret, or express probabilities in the form of a fraction, decimal, or percent. (CU, MC)	SE: 666-668, 672-673 #1-4 TG: <i>Think and Discuss</i> 666
Predict the probability of outcomes of experiments and test the predictions.	SE: 692-696, 700-701 #1-4

Predict the probability of future events based on empirical data. (RL)	SE: 697-699, 701 #5, 703 #8-11 TG: <i>Think and Discuss</i> 697
1.4.3 Apply data collection processes to inform, persuade, or answer questions.	
Formulate a question and collect data from a population describing how the questions, collection method, and sample population affect the results. (CU)	SE: 692-693, 697-699, 700 #1-4, 10, 11, 16 TG: <i>Real-Life Math</i> 600, 664
Present collected data to support an opinion to inform or persuade an identified audience. (CU, MC)	SE: 692-694, 703 # 8, 15
Determine whether given data provides useful information for a situation (e.g., given a set of data, decide whether all of the information provided is necessary). (SP)	SE: 697-699, 704 #13, 15
Determine whether data supports a given opinion and explain the decision. (CU)	SE: 697-699, 703 #9, 10
Identify a sample relevant to a given question and population.	SE: 694-696, 701 #5, 6, 7, 14, <i>In Your Own Words</i> 706
1.4.4 Understand how variations in data may affect the choice of data analysis techniques used.	
Determine and use range and measures of central tendency to describe a set of data.	SE: 710-714, 718-719 #1-3, 9-10
Describe the effects of extreme values on means in a population. (CU, MC)	SE: 712-713, 721 # 10
Explain the difference between median or mean as a measure of central tendency in a given situation (e.g., when an extreme value skews the mean). (RL, CU, MC)	SE: 710-714 , 718 #1, 2, 3, 9, 10
Describe how additional data added to data sets may affect the result of measures of central tendency. (SP, CU)	SE: 710-714, 721 #10
Find the range of a set of data.	SE: 710-714, 718 #1-3

Explain what the range adds to measures of central tendency. (CU)	SE: 710-711, 718 #1 and 3
1.4.5 Understand and apply various data display techniques including box-and-whisker plots.	
Read and interpret various data displays.	SE: 699, 714-717 TG: <i>Think and Discuss</i> 709
Determine the appropriate representation for given data. (RL, CU)	SE: 714-717, 720 #5-8
Construct bar graphs, circle graphs, line graphs, box-and-whisker and scatter plots using collected data. (CU, MC)	SE: 717 <i>Share and Summarize</i> , 718-723 1, 4, 11-13
Use scatter plots to describe trends and interpret relationships. (RL, CU)	SE: 303
Read and interpret data from box-and-whisker plots and determine when using this type of graph is appropriate. (RL, CU)	SE: 718-719 #2, #3, #9, #10
Describe statistical information given a box-and-whisker plot (e.g., median, range, interquartile range). (CU)	SE: 718-719 #1, #2, #3, #9
Compare different graphical representations of the same data. (RL, MC)	SE: 714-717
Make and justify an inference drawn from a sample. (RL, CU, MC)	SE: 714-717
1.4.6 Evaluate how different representations of the same set of data can support different points of view.	
Critique the use of data and data displays for univariate data.	TG: <i>Think and Discuss</i> 709
Judge the reasonableness of conclusions drawn from a set of data and support that position with evidence (e.g., from newspapers, Web sites, opinion polls). (MC,RL)	SE: 726 #4

Determine the accuracy and completeness of the data in a table or graph. (RL, CU)	SE: 715-717 <i>Share and Summarize 717</i>
Explain how different representations of the same set of data can support different points of view. (RL, CU)	SE: 715-717
Describe how statistics or graphics have been used or misused to support a point of view.	SE: 715-717
<b>Component 1.5: Understand and apply concepts and procedures from algebraic sense.</b>	
1.5.1 Apply understanding of linear relationships to analyze patterns, sequences, and situations.	
Identify patterns that are linear relations and provide missing terms. (RL)	SE: 300-308, 314-317 #1-7 <i>TG: Think and Discuss 300</i>
Describe the relationship between the terms in a sequence and their positions in the sequence. (CU)	SE: 301-305, 345-347
Identify, extend, or represent patterns and sequences using tables, graphs, or expressions. (RL, MC)	SE: 301-308, 348-350, 354-355#1-4
Use technology to generate graphic representations of linear relationships. (SP)	SE: Graphing calculators and computers
Make predictions using linear relationships in situations. (RL)	SE: 301-308
Identify a linear relationship that has the same pattern as another linear relationship	SE: 330-333, 348-350
Create a representation of a linear relationship given a rule. (MC)	SE: 351-353, 356 #5-10
1.5.2 Apply understanding of linear patterns in a table, graph, or situation to develop a rule.	
Describe the rule and/or construct a table to represent a pattern with combinations of two arithmetic operations in the rule.	SE: 362-370, 371-374 #1-13
Write an expression or equation with a single variable representing a situation or real-world problem. (CU, MC)	SE: 407 #15, 414—415 #15-16, 416-417 #22, #33, 419-421, 430-431 #42-46

Write a story about a situation that represents a given linear equation, expression, or graph. (CU, MC)	SE: <i>Share and Summarize</i> 350, 368
Describe the rule or construct a table to represent a pattern with combinations of two arithmetic operations in the rule. (RL, CU)	SE: 362-369, Lab Investigation 312-313
Use technology to determine the rule for a linear relationship. (SP, RL)	SE: Graphic Calculators (Impact 3)
<b>Symbols and representations</b>	
1.5.3 Understand relationships between quantities using squares and square roots.	
Represent relationships between quantities using exponents (squares) and radicals (roots). (CU)	SE: 271-275 (Impact 1 504-507 #11-43) TG: 271
Simplify square roots of square numbers (e.g., the square root of 9 is 3). (RL)	SE: 271-274, 277, (Impact 1, 504-507)
Demonstrate understanding of square roots with physical models and examples. (CU)	SE: 276-277#1-12, 625-626, (Impact 1, 508 #1-10, 509 #20-43, 511 #47-50)
Use exponents (squares) and radicals (square roots) to represent relationships (e.g., finding the area of a square with a side of 5 could be represented by $5^2$ ). (CU)	SE: 482-491, (Impact 1, 508-512 #9-57)
1.5.4 Apply understanding of equations, tables, and graphs to represent situations involving linear relationships.	
Represent linear relationships through expressions, equations, tables and graphs of situations involving non-negative rational numbers.	SE: 300-307
Graph data to demonstrate relationships in familiar contexts (e.g., conversions, perimeter, area, volume, and scaling). (CU, MC)	SE: 326, 330
Develop a situation that corresponds to a given equation or expression. (CU, MC)	SE: 329, Set E, <i>Share and Summarize</i>

Create a table or graph given a description of, or an equation for, a situation involving a linear relationship. (CU, MC)	SE: 334-338 #1-6
Describe a situation involving a linear or non-linear relationship that matches a given graph (e.g., time-distance, time-height). (CU, MC)	SE: 334-338 #1-6, 339 #19, 340 #25, 341 #33
Explain the meaning of a variable in a formula, expression, or equation. (CU)	SE: 33-42, 386-387, 393 #16,403, 405 #10, 406 #11-12  Lab Investigation 42-45, 388-391  TG: <i>Think and Discuss 32</i>
<b>Evaluating and Solving</b>	
1.5.5 Understand and apply procedures to evaluate expressions and formulas considering order of operations.	
Substitute non-negative rational values for variables in order to evaluate expressions and formulas (e.g., length x width when length = 3 and width = 4.)	SE: 37-42,385-387, 396-403, 406 #11-13, 419-421, 429 #1-4  TG: 385 <i>Think and Discuss</i>
Explain the simplification of expressions and equations using order of operations. (CU)	SE: 14-21, 155-156  TG: 14
Evaluate expressions and formulas considering order of operations. (RL)	SE: 22-25 #5-11, 26 #28-34
Determine the expression that represents a given situation. (MC, CU)	SE: 17 Set G, 25 #27, 26 #33-34,  <i>Share and Summarize 9, 18</i>
Describe a situation that fits with a given expression. (RL, MC, CU)	SE: 22-24 #1-11, 27 #39, 28 #40-41 <i>Share and Summarize 21</i>
Write expressions or equations for a situation.	SE: 23 #7-9, 24 #10-11, 25 #27, 386-387,392 #11-16, 399-407, 420-421, 426-427, 429 #1-5,

	430 #43-46 TG: Example 399,
1.5.6 Understand and apply a variety of strategies to solve two-step equations with one variable.	
Explain and justify the solution to a problem in a given context. (RL, CU, MC)	SE434-437, 440 #1-3 TG: 434 Explore
Solve two-step equations with one variable on only one side of the equal sign (e.g., $2x + 4 = 12$ ).	SE: 419-421, 429 #1-5, 430 #32-37 TG: 419 <i>Think and Discuss</i>
<b>EALR 2: The student uses mathematics to define and solve problems.</b>	
<b>Component 2.1: Understand problems</b>	
Example: On the playground, Juan made 13 free throws out of 18 tries. If Bonita shoots 25 free throws, what is the lowest number she has to make in order to have a better free throw percentage than Juan?	
2.1.1 Analyze a situation to define a problem.	
Use strategies to become informed about the situation (e.g., listing information, asking questions).	SE: 446 #3-5, 529-531, 532-533 #1-4, 536 #28, 566-568, 596-597 #1-4
Summarize the situation (e.g., two people are shooting free throws, one shot 18, the other 25; we are trying to find the percentage made for each).	SE: 562-568, 570-571, 575-577 #22-26
Determine whether enough information is given to find a solution (e.g., list what is needed to find the percentage of free throws made).	SE: 586-587
Determine whether information is missing or extraneous (e.g., compare the list of known things to the list of needed things to see if there are things that are not needed—names, location).	SE: 593 #7-9, 594 #10-11, 595 #12,
Define the problem (e.g., find the smallest number of free throws Bonita needs to make out of 25 attempts in order to top Juan's percentage).	SE: 520-524, 527-529, 540-542, 590 #1-3
<b>Component 2.2: Apply strategies to construct solutions.</b>	

2.2.1 Apply strategies, concepts, and procedures to devise a plan to solve the problem.	
Organize relevant information from multiple sources (e.g., describe how to calculate percents, set limits on the number that Bonita could make).	SE: 562-574, 575-581 #1-35
Select and apply appropriate mathematical tools for a situation (e.g., guess and check, calculate Juan's percentage and create a table of values (with or without technology) for Bonita's percentages).	SE: 562-574, 575-581 #1-35
2.2.2 Apply mathematical tools to solve the problem.	
Implement the plan devised to solve the problem or answer the question posed (e.g., in a table of values of percentages for Bonita's possible results and percentages, find the range of values that yield a percentage larger than Juan's; find the smallest of those and use that number).	SE: 586-587, 590-593 #1-4, 592 #7
Identify when an approach is unproductive and modify or try a new approach (e.g., if a result is larger than 25, return to see if the percentage computation is accurate and if it is computed correctly).	SE: 593 #8-9
Check the solution to see if it works (e.g., if the solution is larger than 25, it makes no sense in the given problem).	SE: 593 #8-9, 598 #7
<b>EALR 3: The student uses mathematical reasoning.</b>	
<b>Component 3.1 Analyze information.</b>	
3.1.1 Analyze information from a variety of sources to interpret and compare information.	
Explain and compare conclusions reached from data (e.g., from newspapers, web sites, opinion polls). (1.4.6)	SE: 693-696, 700-702 #1-13 Lab Investigation 312-313 TG: 692 Explore
Use graphs to describe trends, compare, and interpret relationships from data (e.g., from newspapers, web sites, opinion polls). (1.4.5)	SE: Lab Investigation 312-313, 693-696, 700-702 #1-7 TG: Explore 692

<b>Component 3.2: Make predictions</b>	
3.2.1 Apply prediction and inference skills to make or evaluate conjectures.	
Predict the probability of future events based on empirical data. (1.4.2)	SE: 676-678, 692-699, 703-705 #12-16
Predict the probability of outcomes of experiments and test the predictions.	SE: 678-685, 686-698 #1-14
3.2.2 Apply the skills of drawing conclusions and support those conclusions using evidence.	
Draw conclusions from displays, texts or oral discussions and justify those conclusions with logical reasoning or other evidence (e.g., read a newspaper article that includes data, draw a conclusion, and support that conclusion with evidence from the article or elsewhere).	SE: 702 #7, 703, 707 #19
3.2.3 Analyze procedures and results in various situations.	
Describe how additional data added to data sets may affect the computations of measures of central tendency in various situations. (1.4.4)	SE: 710-717, 718-722 #1-11, (Impact 1 363-379, 380-387 #1-18)
<b>Component 3.3: Verify results</b>	
3.3.1 Analyze procedures and information used to justify results using evidence.	
Justify the reasonableness of an estimate. (1.2.6)	SE: 588-589, 591-592 #5-7
Apply a process that can be used to find a reasonable estimate of circle measurements (e.g., wrap a string around the circle). (1.2.6)	SE: 112-114 Set C, 636 #6 Lab Investigation 119-121 TG: 132 Example
Apply estimation strategies prior to computing addition and subtraction of integers and operations on non-negative rational numbers to determine reasonableness of answers. (1.1.8)	SE: 481 #23-28, 559 #23-28, 623 #14-16 Lab Investigation 551-553
3.3.2 Analyze thinking and mathematical ideas using models, known facts, patterns, relationships, or counter examples.	

Explain how different representations of the same set of data can support different points of view. (1.4.6)	SE: 692-699, 700-701 #1-5
<b>EALR 4: The student communicates knowledge and understanding in both everyday and mathematical language..</b>	
<b>Component 4.1: Gather information</b>	
4.1.1 Apply a planning process to collect information for a given purpose.	
Formulate a question and collect data from a population considering how the questions, collection method, and sample population affect the results. (1.4.3)	SE: Lab Investigation 312-313
4.1.2 Understand how to extract information from multiple sources using reading, listening and observation.	
Create a table or graph given a description of, or an equation for, a situation involving a linear or non-linear relationship. (1.5.4)	SE: 344-353. 354-360 #1-17, 437-440, 441 #4-5
<b>Component 4.2: Organize</b>	
4.2.1 Apply organizational skills for a given purpose.	
Identify, determine, interpret, or express probabilities in the form of a fraction, decimal, or percent. (1.4.2)	SE: 666-671, 672-674 #1-8, 676-685 TG: 666 <i>Think and Discuss</i>
4.2.2 Apply communication skills to clearly and effectively express or present ideas and situations using mathematical language or notation.	
Identify data that may represent sampling errors and explain why the sample (and the display) might be biased. (1.4.4)	SE: 676-685 TG: Explore 676
Explain when estimation might be used rather than computation. (1.1.8)	SE: Lab Investigation 551-553

Clearly explain, describe, or represent mathematical information in a pictorial, tabular, graphical, two-or three-dimensional drawing, or other form as appropriate for the mathematical information (e.g., time, distance, categories), audience, and/or purpose such as to perform or persuade with notation and labels as needed.	SE: 268-273,276-277 #1, 11-12, 334 #1, 714-717 TG: 709 <i>Think and Discuss</i>
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**EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-life situations.**

**Component 5.1 Relate concepts and procedures within mathematics.**

5.1.1 Apply concepts and procedures from a variety of mathematical areas in a given problem or situation.

Write the rational number when given a model (e.g., number line, area model, situation, diagram, picture). (1.1.1)	SE: 222-230, 236-237 #1-32 Lab Investigation 220-222
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Given a set of data, compare various representations (e.g., box-and-whisker, bar, circle graph) for a given situation. (1.4.5)	SE:714-717
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5.1.2 Apply different mathematical models and representations to the same situation.

Explain how different representations of the same set of data can support different points of view. (1.4.6)	SE: 714-717, 722 #12
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Match a situation with a data set or graph. (1.5.4)	SE: 714-717
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**Component 5.2: Relate mathematical concepts procedures to other disciplines.**

5.2.1 Apply mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines.

Evaluate and explain conclusions of plant growth drawn from data (e.g., from magazines, newspapers, web sites). (1.4.6)	SE: 710 Set A
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Write a story about a situation that represents a given linear equation, expression, or graph. (1.5.2)	SE: 304 <i>Share and Summarize</i> , 350,353, 364, 370
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Determine the target heart zone for participation in aerobic activities	SE:
Chart a one-week physical activity log based on calories expended/minute of activity.	SE: <i>Share and Summarize</i> 305
Determine adjustments needed to achieve a healthy level of fitness.	SE:
Create a perspective drawing using vanishing point.	SE: 336-337 (Impact 3)
Mix paint in the correct proportions to create a particular color.	SE: 533-534 #3-10, 542 #4, 554 #2-3,
5.2.2 Know the contributions of individuals and cultures to the development of mathematics.	
Recognize the contributions of a variety of people to the development of mathematics (e.g., research and report on the history of pi).	SE: <i>“Just the Facts”</i> 65, 126, 151, 196, 198, 201, 260, 261, 264, 275, 277, 442, 505, 536, 546, 655, 707
<b>Component 5.3: Relate mathematical concepts and procedures to real</b>	
5.3.1 Understand that mathematics is used in daily life and extensively outside the classroom.	
Describe a situation where estimation is sufficient in real-life contexts. (1.1.8)	SE: 556 #10, 551 <i>share and Summarize</i>  Lab Investigation 551-553
Use properties of polygons and circles to solve real-world problems (e.g., find the amount of fencing needed for a pasture). (1.3.2)	SE: 509 #13, 128 #32
Compare the unit prices of various soft drinks.	SE: 529-531
5.3.2 Understand that mathematics is used within many occupations or careers.	
Explain how mathematics is used in careers or occupations of interest (e.g., complete a mathematically based project).	SE: <i>Real-Life Math</i> 2,76,144,216,298,382,448,518,600,664