

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 1: The student understands and applies the concepts and procedures of mathematics.	
Component 1.1: Understand and apply concepts and procedures from number sense.	
<i>Number and numeration</i>	
<p>1.1.1 Understand the concept and symbolic representations of integers as the set of natural numbers, their additive inverses, and 0.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain or illustrate integer values using words, pictures, models, and symbols.</p> <p>EX Explain the meaning of integers and gives examples.</p> <p>EX Locate the additive inverse of a given integer on a number line.</p>	SE: pp. 4–7
<p>1.1.2 Understand the relative values of integers and non-negative fractions, decimals, and percents.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Order different representations of fractions, decimals, and/or percents.</p> <p>EX Show and determine equivalence between non-negative integers, fractions, decimals, and percents using words, pictures, models, and symbols.</p> <p>EX Order integers, fractions, decimals, and/or percents and explain why one number is greater than, less than, or equal to another.</p> <p>EX Explain when a fraction, decimal, or percent of one whole is not the same as the same fraction, decimal, or percent of a different whole.</p>	SE: pp. 40–43, 60–63, 64–67, 68–71

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<p>1.1.3 Understand and use properties of addition and multiplication on non-negative decimals and fractions. EXAMPLES</p> <p>EX Illustrate and explain the commutative, associative, and identity properties of addition and multiplication and the zero property of multiplication on non-negative decimals and fractions.</p> <p>EX Use addition and multiplication properties to assist in computations.</p> <p>EX Determine whether a computation is reasonable based on application of the commutative, associative, and identity properties of addition and/or multiplication.</p>	
<p>1.1.4 Understand the concepts of ratio and percent. EXAMPLES</p> <p>EX Write or show and explain ratios in part/part and part/whole relationships using words, objects, pictures, models, and/or symbols.</p> <p>EX Represent equivalent ratios using objects, pictures, or symbols.</p> <p>EX Represent equivalent percentages using objects, pictures, and symbols.</p> <p>EX Express or represent percent as a ratio based on 100 equal size parts of a set.</p> <p>EX Explain ratio and percents and give examples of each.</p> <p>EX Create a ratio equivalent to a given ratio to determine an unknown value for a dimension or a number of events or objects.</p>	<p>SE: pp. 40–43, 48–51, 52–55, 56–58, 60–63, 64–67, 68–71</p>

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<p><i>Computation</i></p>	
<p>1.1.5 Understand the meaning of multiplication and division of non-negative decimals and fractions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain or show the meaning of multiplying and dividing non-negative fractions and decimals using words, pictures, or models.</p> <p>EX Explain the effect of multiplying a whole number by a decimal number.</p> <p>EX Explain why multiplication of fractions involves multiplying denominators.</p> <p>EX Demonstrate how multiplication and division with decimals affects place value.</p> <p>EX Explain remainders of a division problem in a given situation.</p> <p>EX Translate a picture or illustration into an equivalent symbolic representation of multiplication and division of non-negative fractions and decimals.</p> <p>EX Select and/or use an appropriate operation to show understanding of addition, subtraction, multiplication, or division of non-negative rational numbers.</p>	<p>SE: pp. 64–67</p>

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<p>1.1.6 Apply strategies or uses computational procedures to add and subtract non-negative decimals and fractions. EXAMPLES</p> <ul style="list-style-type: none"> EX Find the sums or differences of non-negative fractions or decimals. EX Find sums or differences of decimals or fractions in real-world situations. EX Use the least common multiple and the greatest common factor of whole numbers to simplify or compute with fractions. EX Calculate sums of two numbers with decimals to the thousandths or three numbers with decimals to hundredths. EX Calculate difference between numbers with decimals to thousandths. EX Complete multiple-step computations requiring addition and/or subtraction. 	
<p>1.1.7 Apply strategies and uses tools appropriate to tasks involving addition and subtraction of non-negative decimals and fractions. EXAMPLES</p> <ul style="list-style-type: none"> EX Select and use appropriate strategies and tools from among mental computation, estimation, calculators, manipulatives, and paper and pencil to compute in a given situation. EX Explain why a selected strategy or tool is more efficient or more appropriate than another strategy or tool for a situation. EX Describe strategies for mentally adding and/or subtracting non-negative decimals and fractions. 	

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<p><i>Estimation</i></p>	
<p>1.1.8 Apply estimation strategies involving addition and subtraction of non-negative decimals and fractions to predict results or determine reasonableness of answers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain whether estimation or exact calculation is appropriate in situations involving addition and subtraction of non-negative decimals and fractions.</p> <p>EX Use a variety of estimation strategies prior to computation to predict an answer.</p> <p>EX Use estimation to verify the reasonableness of calculated results.</p> <p>EX Compute to check the reasonableness of estimated answers for a given situation.</p> <p>EX Explain an appropriate adjustment when an estimate and a computation do not agree.</p> <p>EX Explain or describe a strategy for estimation involving addition and subtraction of non-negative decimals and fractions.</p>	

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Component 1.2: Understand and apply concepts and procedures from measurement.	
<i>Attributes, units, and systems</i>	
<p>1.2.1 Understand the concepts of surface area and volume of rectangular prisms.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Represent the volume for given rectangular prisms using pictures or models.</p> <p>EX Describe and provide examples of surface area and volume.</p> <p>EX Explain and give examples of how area and surface area are related.</p> <p>EX Describe the relationship between surface area and volume of a rectangular prism.</p> <p>EX Label measurements of rectangular prisms to show understanding of the relationships among linear dimensions, surface area, and volume of rectangular prisms.</p>	
<p>1.2.2 Understand the differences between area (square) units and volume (cubic) units.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select appropriate units for area and volume in given situations.</p> <p>EX Explain why volume is measured in cubic units.</p> <p>EX Explain how the selected unit of length affects the size of cubic units.</p> <p>EX Explain why area is measured in square units and volume is measured in cubic units.</p>	
<p>1.2.3</p> <p style="text-align: center;"><i>Maintain Skills</i></p>	

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<p><i>Procedures and estimation</i></p>	
<p>1.2.4 Use a systematic procedure to measure and describe the volume of rectangular prisms. EXAMPLES Suggested Procedure: — Identify the attribute to measure. — Select an appropriate unit to measure the attribute identified. — Select a tool that matches the unit chosen. — Use the selected tool to determine the number of units. — Report or record the number of units and a label. ex Select and describe the appropriate units and/or tools for measuring length, area, and/or volume. ex Measure the volume of rectangular prisms using manipulatives or pictures and counts the number of units as part of the measurement procedure. ex Determine whether measurement has been done correctly.</p>	
<p>1.2.5</p> <p style="text-align: center;"><i>Maintain Skills</i></p>	

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<p>1.2.6 Understand and apply strategies to obtain reasonable estimates of volume using manipulatives and/or drawings.</p> <p align="center">EXAMPLES</p> <p>EX Describe situations in which estimated measures are sufficient.</p> <p>EX Estimate and label volume or capacity.</p> <p>EX Use estimation to determine reasonableness of a volume of a rectangular prism.</p> <p>EX Describe a procedure to find a reasonable estimate of volume or capacity.</p> <p>EX Explain why estimation would be used rather than a direct measurement.</p>	
<p>Component 1.3: Understand and apply concepts and procedures from geometric sense.</p>	
<p><i>Properties and relationships</i></p>	
<p>1.3.1 Understand the properties of circles and rectangular prisms.</p> <p align="center">EXAMPLES</p> <p>EX Describe circles or rectangular prisms using geometric properties.</p> <p>EX Draw a figure given properties that describe a circle or rectangular prism.</p> <p>EX Explain lines of symmetry for 2-dimensional figures including circles.</p> <p>EX Describe the relationship between the diameter and the radius of a circle.</p>	

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<p>1.3.2 Use the attributes of angles and polygons. EXAMPLES</p> <ul style="list-style-type: none"> EX Use, sort, classify, and label geometric figures in illustrations, nature, and art. EX Sort and classify 2-dimensional shapes and/or figures according to their properties including number of sides, number of vertices, types of angles, parallel sides, perpendicular sides, symmetry, and/or congruence. EX Combine polygons to create a figure. EX Find the missing angle given two angles of a triangle. EX Describe or draw lines of symmetry for angles and/or polygons. EX Identify, describe, or draw angles or polygons using geometric properties. 	
<p><i>Locations and transformations</i></p>	
<p>1.3.3 Understand the relative location of points with integer coordinates on a number line. EXAMPLES</p> <ul style="list-style-type: none"> EX Plot integers and non-negative fractions and/or decimals on a number line. EX Locate the point of final destination given directions for movement on an integer number line. EX Determine and describe the distance between any two integers on a number line. EX Describe the relative location of points and objects on a number line with both positive and negative numbers. EX Locate objects on a number line based on given numeric locations. EX Identify or name the location of points on a number line using coordinates or labels. 	<p>SE: pp. 4–7</p>

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<p>1.3.4 Understand and apply rotations to a 2-dimensional figure about its center or a vertex. EXAMPLES</p> <ul style="list-style-type: none"> EX Describe a 90° or 180° rotation of a figure about its center or a vertex. EX Describe a rotation so that another person could draw it. EX Describe whether an object has been translated or rotated on a coordinated grid. EX Draw a design using a 90°, 180°, 270°, or 360° rotation of a shape or figure. EX Plot the points and write the coordinates of an object or figure that has been rotated 90°, 180°, or 270° about its center or a vertex on a coordinate grid. 	
<p>Component 1.4: Understand and apply concepts and procedures from probability and statistics.</p>	
<p><i>Probability</i></p>	
<p>1.4.1 Understand probability as a number between 0 and 1 inclusive. EXAMPLES</p> <ul style="list-style-type: none"> EX Represent the probability of a simple event as a number between 0 and 1 inclusive. EX Express probabilities as fractions or decimals between 0 and 1 inclusive, and percents between 0 and 100 inclusive. EX Translate between representations of probability including fractions, decimals, and percents. 	

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<p>1.4.2 Use procedures to determine outcomes and/or the probabilities of events or situations. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine the probability of a simple event as a ratio, decimal, or percent. EX Represent all possible outcomes of an experiment in a variety of ways including an organized list, a table, or a tree diagram. EX Explain why some outcomes are equally likely, more likely, or less likely to happen than others and how much more or less likely than another outcome. EX Explain how to determine all possible outcomes of an experiment or event. EX Create a game that is fair or unfair and explains why. 	
<p><i>Statistics</i></p>	
<p>1.4.3 Understand how the question or collection method may affect the data collected. EXAMPLES</p> <ul style="list-style-type: none"> EX Describe the fairness of various data collection methods, including phone survey, web survey, and personal interview survey, in a given situation. EX Determine what data is needed in order to write the question. EX Select/write survey questions based on the needed data. EX Select/write survey questions to avoid bias. EX Select or design a sampling method based on the needed data. 	

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<p>1.4.4 Understand and use measures of central tendency to describe a set of data. EXAMPLES</p> <ul style="list-style-type: none"> EX Use mean, median and mode, to describe or explain a set of data in familiar and new situations EX Determine mean, median, and mode of a set of data. EX Explain why the mean, median, and mode may not be the same for a given set of data. EX Explain why the mean, median, or mode best describes a set of data. EX Explain what the mean, median, and mode indicate about a set of data. 	
<p>1.4.5 Read and interpret data presented in diagrams, single line graphs, and histograms. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain which graph type is most appropriate for a given situation and data. EX Read and interpret data from Venn diagrams, single line graphs, and/or histograms; and explains the use of these graphs. EX Explain inferences based on a set of data. EX Summarize data from a table, graph, or diagram. EX Explain the completeness and accuracy of data presented in single line graphs and histograms. EX Describe trends or patterns in data represented in single line graphs and histograms. 	<p>SE: pp. 76–79</p>

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<p>1.4.6 Determine and explain how data can support a point of view.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain how the same set of data can support different points of view.</p> <p>EX Explain how data have been used or misused to support a point of view.</p>	
<p>Component 1.5: Understand and apply concepts and procedures from algebraic sense.</p>	
<p><i>Patterns and functions</i></p>	
<p>1.5.1 Recognize, extend, and/or create patterns and sequences that use two different arithmetic operations alternating between terms.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Create a pattern and explain what makes it a pattern.</p> <p>EX Select or create a pattern that is equivalent to a given pattern.</p> <p>EX Identify and describe a number pattern for a given table, graph, rule, or words,</p> <p>EX Use technology to generate patterns based on two arithmetic operations.</p> <p>EX Extend a pattern by supplying missing elements in the beginning, middle, and/or end of the pattern.</p>	<p>SE: pp. 9, 11, 72–75, 76–79</p>

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<p>1.5.2 Develop a rule for patterns involving combinations of two arithmetic operations.</p> <p align="center">EXAMPLES</p> <p>EX Describe or write a rule for a pattern with combinations of two different arithmetic operations in the rule.</p> <p>EX Identify, describe, or write a rule for a given pattern involving two different alternating operations.</p> <p>EX Create a pattern that uses the same rule as a given pattern.</p> <p>EX Determine a rule in order to supply missing elements in the beginning, middle, or end of a pattern or sequence.</p> <p>EX Create a pattern involving two alternating operations using a given rule.</p>	<p>SE: pp. 72–75, 76–79</p>
<p><i>Symbols and notations</i></p>	
<p>1.5.3 Understand the concept of mathematical equality and inequality and uses the symbols =, ≠, <, >, ≤ and ≥.</p> <p align="center">EXAMPLES</p> <p>EX Express relationships between quantities including non-negative fractions, decimals, percents, and integers using =, ≠, <, >, ≤, and ≥.</p> <p>EX Describe a situation represented by an equation or inequality involving non-negative fractions, decimals, percents, and/or integers.</p> <p>EX Write a simple equation or inequality using non-negative fractions, decimals, percents, and integers to represent a given situation.</p>	<p>SE: pp. 20–23, 24–27, 28–31, 32–35, 36–39, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71</p>

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<p>1.5.4 Use variables to write expressions, equations, and inequalities that represent situations involving two arithmetic operations on whole numbers and/or non-negative decimals and fractions.</p> <p align="center">EXAMPLES</p> <p>EX Translate a situation involving two arithmetic operations into algebraic form involving variables and using =, ≠, >, <, ≥, or ≤.</p> <p>EX Describe a situation involving two arithmetic operations that matches a given equation with variables.</p> <p>EX Write an equation, expression, or inequality using a variable to represent a given situation and explains the meaning of the variable.</p> <p>EX Describe a situation that corresponds to a given expression, equation, or inequality that includes variables.</p> <p>EX Explain the meaning of variables in a formula, expression, or equation.</p>	<p>SE: pp. 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p><i>Evaluating and solving</i></p>	
<p>1.5.5 Apply algebraic properties to evaluate expressions and formulas using pictures and/or symbols.</p> <p align="center">EXAMPLES</p> <p>EX Determine the value of simple expressions and formulas using pictures and/or symbols.</p> <p>EX Determine the value of an expression or formula by substituting non-negative values for variables.</p> <p>EX Write an expression with a variable that represents a given situation and determine the value of the expression given a value for the variable.</p>	<p>SE: pp. 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 68–71, 72–75, 76–79</p>

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<p>1.5.6 Apply a variety of properties to solve one-step equations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Solve one-step equations involving non-negative rational numbers using manipulatives, pictures, and/or symbols.</p> <p>EX Solve one-step single variable equations.</p> <p>EX Write and solve one-step single variable equations for a given situation.</p> <p>EX Explain or show the meaning of the solution to an equation.</p>	SE: pp. 24–27, 28–31, 32–35, 36–39, 64–67, 76–79
EALR 2: The student uses mathematics to define and solve problems.	
Component 2.1: Define problems.	
<p>2.1.1 Formulate questions to be answered to solve a problem.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Investigate a situation and determines if there is a problem to solve.</p> <p>EX Define or clarify the question the problem presents.</p> <p>EX Generate questions to be answered in order to solve the problem.</p>	
<p>2.1.2 Determine what information is missing or extraneous.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine what needed information is missing.</p> <p>EX Differentiate between necessary and extraneous information.</p>	
<p>2.1.3 Identify what is known and unknown in new situations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine what data, numbers, and information are known and unknown.</p>	SE: pp. 20–23, 24–27, 28–31, 32–35, 36–39, 48–51, 52–55, 56–59, 64–67, 68–71, 72–75, 76–79

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Component 2.2: Construct solutions.	
<p>2.2.1 Select and use relevant information to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use relevant data or information from the problem.</p> <p>EX Determine whether a given solution shows the use of relevant information.</p>	SE: pp. 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79
<p>2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, and/or probability and statistics to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use appropriate concepts and procedures to construct a solution.</p> <p>EX Determine whether a given solution shows use of concepts and procedures that are appropriate.</p>	SE: pp. 4–7, 8–11, 12–15, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79
<p>2.2.3 Apply a variety of strategies and approaches to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use tools such as rulers, protractors, manipulatives, calculators, and technology to construct a solution.</p> <p>EX Apply a variety of strategies and approaches.</p> <p>EX Determine when an approach is unproductive and modify or try a new approach.</p> <p>EX Determine whether a given solution shows the application of strategies that are appropriate.</p>	SE: pp. 4–7, 8–11, 12–15

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<p>2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s). EXAMPLES</p> <ul style="list-style-type: none"> EX Check work for mathematical accuracy. EX Determine whether the solution is reasonable for the situation. EX Check the solution with an estimate or results from an alternate approach. EX Check to be certain the solution answers the question. 	
<p>EALR 3: The student uses mathematical reasoning.</p>	
<p>Component 3.1: Analyze information.</p>	
<p>3.1.1 Analyze numerical, measurement, geometric, probability, and/or statistical information from a variety of sources. EXAMPLES</p> <ul style="list-style-type: none"> EX Analyze mathematical information or results represented in single line graphs and scatter plots. EX Compare mathematical information represented in tables, charts, graphs, text, diagrams, figures, or pictures. EX Identify agreements or differences between mathematical information, diagrams, and/or pictorial representations. EX Differentiate between valid and invalid analysis of mathematical information or results. 	<p>SE: pp. 76–79</p>

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Component 3.2: Conclude.	
<p>3.2.1 Draw and support conclusions. EXAMPLES</p> <ul style="list-style-type: none"> EX Draw a conclusion from a given situation and support the conclusion with appropriate numerical, measurement, geometric, probability, and/or statistical data or facts. EX Use data or examples as evidence to support or contradict a given conclusion. EX Identify a valid conclusion based on given information. 	SE: pp. 4–7
<p>3.2.2 Evaluate selection and implementation of procedures and conclusions in various situations. EXAMPLES</p> <ul style="list-style-type: none"> EX Check the viability and appropriate use of a selected procedure in a given situation. EX Evaluate a conclusion based on given information. 	
Component 3.3: Verify results.	
<p>3.3.1 Justify results using evidence. EXAMPLES</p> <ul style="list-style-type: none"> EX Justify results using evidence and information from the problem situation and/or known facts, patterns, and relationships. 	
<p>3.3.2 Evaluate reasonableness of results. EXAMPLES</p> <ul style="list-style-type: none"> EX Check for reasonableness of results in a given situation. EX Verify that the solution to a real-world problem makes sense in relation to the situation. 	

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<p>3.3.3 Validate thinking about numerical, measurement, geometric, probability, and/or statistical ideas. EXAMPLES EX Explain and support thinking about mathematical ideas using models, facts, patterns, or relationships. EX Refute a conjecture using a counter example.</p>	
<p style="text-align: center;">EALR 4. The student communicates knowledge and understanding in both everyday and mathematical language.</p>	
<p>Component 4.1: Gather information.</p>	
<p>4.1.1 Develop and follow a plan for collecting numerical, measurement, geometric, probability, and/or statistical information. EXAMPLES EX Determine appropriate mathematical information needed for a specific purpose or audience. EX Develop a plan, not a survey, to collect mathematical information, including what information is needed and where and how to find the information. EX List or describe the general procedure or order of steps of a plan to gather exactly the information sought with no irrelevant information. EX Follow a plan, not a survey, to collect mathematical information for a given audience and purpose.</p>	

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<p>4.1.2 Extract numerical, measurement, geometric, probability, and/or statistical information from multiple sources. EXAMPLES EX Extract and use mathematical information from various sources such as pictures, symbols, text, tables, charts, line graphs, circle graphs, histograms, Venn diagrams, and/or models for a purpose. EX Write or identify questions to be answered using data sources such as magazines, newspapers, menus, sales and travel brochures, schedules, and/or sales receipts.</p>	
<p>Component 4.2: Organize, represent, and share information.</p>	
<p>4.2.1 Organize numerical, measurement, geometric, probability, and/or statistical information for a given purpose. EXAMPLES EX Select a useful format and organize mathematical information for a given purpose.</p>	
<p>4.2.2 Represent numerical, measurement, geometric, probability, and/or statistical information in graphs or other appropriate forms. EXAMPLES EX Represent mathematical information using tables, charts, line graphs, circle graphs, histograms, Venn diagrams, pictures, models, drawings, or other appropriate forms including title, labels, appropriate and consistent scales, and accurate display of data.</p>	

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<p>4.2.3 Use mathematical language to explain or describe numerical, measurement, geometric, probability, and/or statistical ideas and information in ways appropriate for audience and purpose.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures or strategies appropriate for a given audience or purpose.</p>	<p>SE: pp. 44–47, 48–51, 76–79</p>
<p>EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-world situations.</p>	
<p>Component 5.1: Relate concepts and procedures within mathematics.</p>	
<p>5.1.1 Apply concepts and procedures from two or more of the content strands, including number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense, in a given problem or situation.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Use concepts and procedures from two or more content strands in a given problem or situation.</p>	
<p>5.1.2 Relate and use different mathematical models and representations of the same situation.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Identify mathematical models or representations that are equivalent to a given model or representation.</p> <p>ex Explain how two or more different models represent the same mathematical idea.</p> <p>ex Create a model or representation that is equivalent to a given graphical, numerical, pictorial, geometric, and/or written model or representation.</p>	

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Component 5.2: Relate mathematical concepts and procedures to other disciplines.	
<p>5.2.1 Use mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines. EXAMPLES ex Give examples of mathematical patterns and ideas in other disciplines. ex Use mathematical concepts and procedures in other disciplines.</p>	
<p>5.2.2 Recognize the contributions of individuals and cultures to the development of mathematics. EXAMPLES ex Describe a contribution to the development of mathematics.</p>	
Component 5.3: Relate mathematical concepts and procedures to real-world situations.	
<p>5.3.1 Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLES ex Generate and explain examples of mathematics in everyday life. ex Describe situations in which mathematics can be used to solve problems with implications in a classroom or school.</p>	SE: pp. 44–47
<p>5.3.2 Understand that mathematics is used in many occupations or careers. EXAMPLES ex Describe specific examples of mathematics associated with a given career. ex Describe the mathematical requirements to enter a given career. ex Describe the mathematics used by workers in a specific job.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 1: The student understands and applies the concepts and procedures of mathematics.	
Component 1.1: Understand and apply concepts and procedures from number sense.	
<i>Number and numeration</i>	
<p>1.1.1 Understand the concept and symbolic representation of fractions, decimals, and integers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain the meaning of fractions, decimals, and integers and give examples.</p> <p>EX Convert between equivalent forms of fractions, decimals, or percents.</p> <p>EX Explain or demonstrate that fractions may have multiple equivalent representations.</p> <p>EX Explain or demonstrate that decimals may have multiple equivalent representations.</p>	SE: pp. 40–43, 44–47, 60–63, 64–67
<p>1.1.2 Understand the relative values of decimals, fractions, or integers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Order decimals, fractions, and/or percents and explains why one number is greater than, less than, or equal to another number.</p> <p>EX Order decimals, fractions and/or integers based on a picture of a real world model, locations on a number line, or symbolic representation.</p> <p>EX Explain why one integer, fraction, decimal, or percent is greater than, less than, or equal to another given number.</p>	SE: pp. 4–7, 40–43

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.1.3 Understand and use the inverse property of addition on integers and the inverse property of multiplication on non-negative decimals or fractions.</p> <p align="center">EXAMPLES</p> <p>EX Use the inverse relationship between multiplication and division to simplify computations.</p> <p>EX Use the inverse properties of addition and multiplication to simplify computations and explain why they work with integers, fractions, and decimals.</p> <p>EX Use, represent, or evaluate an application of the commutative, associative, and/or identity properties of addition on non-negative decimals or fractions.</p> <p>EX Use, represent, or evaluate an application of the commutative associative, identity, and/or zero properties of multiplication on non-negative decimals or fractions.</p>	<p>SE: pp. 20–23, 24–27, 40–43, 44–47, 48–51, 60–63, 64–67, 68–71</p>
<p>1.1.4 Understand the concept of direct proportion.</p> <p align="center">EXAMPLES</p> <p>EX Explain or illustrate the meaning of a ratio, percent or proportion.</p> <p>EX Express proportional relationships using objects, pictures, and symbols.</p> <p>EX Complete or write a proportion for a given situation.</p> <p>EX Predict a future situation using direct proportion</p> <p>EX Represent equivalent ratios and/or percents using pictures, diagrams, or symbols.</p> <p>EX Determine or use a ratio, percent, or proportion in a given situation.</p>	<p>SE: pp. 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p><i>Computation</i></p>	
<p>1.1.5 Understand the meaning of addition and subtraction of integers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain or show the meaning of addition and subtraction of integers using words, pictures, or real-world models.</p> <p>EX Translate a symbolic addition or subtraction of integers into a real-life situation.</p> <p>EX Show addition and subtraction of integers using technology.</p> <p>EX Translate a given picture or illustration representing addition or subtraction of integers into an equivalent symbolic representation.</p> <p>EX Explain why multiplication of fractions involves multiplying denominators while addition of fractions requires finding common denominators.</p> <p>EX Select and/or use an appropriate operation to show understanding of addition and subtraction of integers.</p>	<p>SE: pp. 20–23, 40–43</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.1.6 Apply strategies or uses computational procedures using order of operations to add, subtract, multiply, and divide non-negative decimals and fractions.</p> <p align="center">EXAMPLES</p> <p>EX Find the product or quotient using non-negative decimals and fractions.</p> <p>EX Use multiplication and division in real world situations involving non-negative rational numbers.</p> <p>EX Multiply non-negative decimals and fractions.</p> <p>EX Divide non-negative decimal numbers by non-negative decimal numbers to the hundredths place.</p> <p>EX Compute with non-negative rational numbers using order of operations.</p> <p>EX Interpret and apply the concept of remainder in a given situation.</p> <p>EX Complete multi-step calculations requiring two or more operations with non-negative decimals and fractions.</p>	<p>SE: pp. 8–11, 20–23, 24–27, 40–43, 44–47, 48–51, 60–63, 64–67, 68–71</p>
<p>1.1.7 Apply strategies and uses tools to complete tasks involving addition and subtraction of integers and the four basic operations on non-negative decimals and fractions.</p> <p align="center">EXAMPLES</p> <p>EX Select and use appropriate strategies and tools from among mental computation, estimation, calculators, manipulatives, and paper and pencil to compute in a given situation.</p> <p>EX Explain why a selected strategy or tool is more efficient or more appropriate than another strategy or tool for a situation.</p> <p>EX Describe strategies for mentally adding and/or subtracting integers and multiplying and/or dividing non-negative decimals and fractions.</p>	<p>SE: pp. 20–23, 24–27, 40–43, 44–47, 48–51, 60–63, 64–67, 68–71</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p><i>Estimation</i></p>	
<p>1.1.8 Apply estimation strategies involving addition and subtraction of integers and the four basic operations on non-negative decimals and fractions to predict results or determine reasonableness of answers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine and explain when an approximation, estimation, or exact computation is appropriate and selects or illustrates a real-life situation where estimation is sufficient.</p> <p>EX Use estimation strategies to predict an answer prior to operations on non-negative rational numbers.</p> <p>EX Use estimation to verify the reasonableness of calculated results.</p> <p>EX Compute to check the reasonableness of estimated answers for a given situation.</p> <p>EX Explain an appropriate adjustment when an estimate and a computation do not agree.</p> <p>EX Explain or describe a strategy for estimation involving computation with non-negative decimals and fractions.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.2: Understand and apply concepts and procedures from measurement.	
<i>Attributes, units, and systems</i>	
<p>1.2.1 Understand how changes in one linear dimension affect other linear measurements and area of rectangles, triangles, and circles.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine and/or describe the impact on the perimeter, circumference, and/or area of a rectangle, triangle, and/or circle caused by a change in one dimension.</p> <p>EX Determine and/or describe the impact on one dimension caused by a change in perimeter, circumference and/or area of a rectangle, triangle, and/or circle.</p>	
<p>1.2.2</p> <p><i>Maintain Skills</i></p>	
<p>1.2.3 Understand how the unit of measure affects the precision of measurement.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Identify, describe, or explain how the unit selected for a situation can affect the precision of the measurement.</p> <p>EX Explain why measurement systems have different size units and how that allows for different levels of precision.</p> <p>EX Convert between units within a system to demonstrate understanding of the precision required.</p>	SE: pp. 44–47, 48–51

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p><i>Procedures and estimation</i></p>	
<p>1.2.4 Understand and use a systematic procedure to measure and describe angles.</p> <p style="text-align: center;">EXAMPLES</p> <p>Suggested Procedure:</p> <ul style="list-style-type: none"> — Identify the attribute to measure. — Select an appropriate unit to measure the attribute identified. — Select a tool that matches the unit chosen. — Use the selected tool to determine the number of units. — Report or record the number of units and a label. <p>EX Measure angles in assorted shapes and figures using the suggested procedure.</p> <p>EX Select and describe the appropriate units and/or tools for measuring angles.</p> <p>EX Use a protractor to draw angles accurate to within 3°.</p> <p>EX Determine whether measurement has been done correctly.</p>	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.2.5 Use formulas to determine measurements related to circles, triangles, and rectangular prisms. EXAMPLES</p> <ul style="list-style-type: none"> EX Use formulas to determine and label missing measurements for circles, including radius, diameter, circumference, and area, in given situations. EX Use formulas to determine and label missing measurements for rectangular prisms, including length, width, height, volume, and surface area, in given situations. EX Use formulas to determine and label missing measurements for triangles, including base, height, perimeter, and area, in given situations. EX Demonstrate or explain how to use a formula for finding the area and circumference of a circle. EX Calculate and label dimensions of rectangular prisms with given volumes and/or surface areas. EX Determine the surface area of a rectangular prism. 	<p>SE: pp. 8–11</p>
<p>1.2.6 Understand and apply strategies to obtain a reasonable estimate of measurements related to circles, right triangles, and surface area of rectangular prisms. EXAMPLES</p> <ul style="list-style-type: none"> EX Describe situations in which estimated measures are sufficient. EX Estimate and label circle, right triangle, and rectangular prism measurements. EX Use common approximations of pi to estimate and label the circumference and the area of circles. EX Use or describe a process to find a reasonable estimate of measurements. EX Explain why estimation or precise measurement is appropriate in a given situation. 	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.3: Understand and apply concepts and procedures from geometric sense.	
<i>Properties and relationships</i>	
<p>1.3.1 Understand the concept of similarity and its relationship to congruence.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Identify or describe congruence in figures.</p> <p>EX Explain how two figures are similar and/or congruent using definitions or real-world examples.</p> <p>EX Produce a sample scale drawing and explains how it is an example of similarity.</p> <p>EX Use mathematical conventions to label vertices, line segments, and angles.</p>	SE: pp. 52–55, 56–59
<p>1.3.2 Use the attributes of rectangular prisms, polygons, angles, and circles.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Sort, classify, and label circles according to their properties.</p> <p>EX Sort, classify, and describe rectangular prisms according to their properties including vertices, edges, faces, bases, and parallel faces.</p> <p>EX Draw rectangular prisms and circles with specified properties.</p> <p>EX Explain and use the relationship between radius, diameter, and circumference.</p> <p>EX Find the missing angle given all but one of the angles of a triangle or quadrilateral.</p> <p>EX Sort, classify, and label figures according to their geometric properties.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p><i>Locations and transformations</i></p>	
<p>1.3.3 Describe the location of points on a coordinate grid in any of the four quadrants. EXAMPLES EX Plot and label ordered pairs in any of the four quadrants. EX Name the coordinates of a given point in any of the four quadrants. EX Describe the location of objects on a coordinate grid using coordinates or labels. EX Use technology to locate objects on a two-dimensional grid.</p>	<p>SE: pp. 68–71, 76–79</p>
<p>1.3.4 Apply a combination of translations and/or reflections to 2-dimensional figures. EXAMPLES EX Explain the result of two or more translations or reflections of a figure with or without a grid. EX Plot a combination of two translations and/or reflections of a simple figure with a coordinate grid. EX Explain the transformation of one figure to another on a two-dimensional coordinate grid in terms of a combination of two translations or two reflections. EX Describe a combination of two translations and/or reflections so that another person could draw them. EX Explain a series of transformations in a given diagram or picture.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.4: Understand and apply concepts and procedures from probability and statistics.	
<i>Probability</i>	
<p>1.4.1 Understand the concepts of complementary and mutually exclusive events. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine and explain when events are mutually exclusive. EX Determine and explain when events are complementary. EX Identify or explain when events are complementary, mutually exclusive, or neither. EX Represent the probability of an event given the probability of its complement. 	
<p>1.4.2 Use procedures to determine the probabilities of complementary and mutually exclusive events. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine the probabilities of complementary or mutually exclusive outcomes or events. EX Revise a game with unequal probabilities for all players and makes it a fair game. EX Determine, interpret, or express probabilities in the form of a fraction, decimal, or percent. EX Predict the probability of outcomes of experiments and tests the predictions. EX Predict the probability of future events based on empirical data. EX Count and/or list the sample space of mutually exclusive and complementary events. 	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>Statistics</p>	
<p>1.4.3 Understand how a question, collection method, and/or population may affect the data collected. EXAMPLES</p> <ul style="list-style-type: none"> EX Formulate a question or survey that will obtain appropriate information while avoiding bias. EX Identify a population sample, and collects data from the selected population for an intended purpose. EX Describe how a question, collection method, or population may affect the data. EX Determine whether collected data provides useful information for the stated purpose. EX Describe how to collect data about a given population. 	
<p>1.4.4 Determine and use range and the measures of central tendency of a set of data. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain the effects of extreme values on the mean of a set of data. EX Describe how additional data added to data sets may affect the measures of central tendency. EX Explain the relationship between the range and measures of central tendency. EX Complete a set of data based on a given mean, median, or mode and a partial set of data. EX Explain why the mean, median, and mode may not be the same and what each indicates as a measure of central tendency in a given situation. EX Determine and/or use the mean, median, mode, and/or range for a set of data. 	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.4.5 Read and interpret data presented in diagrams, stem-and-leaf plots, scatter plots, and box-and-whisker plots.</p> <p align="center">EXAMPLES</p> <p>EX Describe the accuracy and completeness of the data in a Venn diagram, stem-and-leaf plot, box-and-whisker plot, and/or scatter plot.</p> <p>EX Read and interpret the data in Venn Diagrams, stem-and-leaf plots, box-and-whisker- plots, and/or scatter plots.</p> <p>EX Select and explain which graph type is the most appropriate representation for a given set of data.</p> <p>EX Interpret and describe trends and patterns represented in data and data displays.</p> <p>EX Explain statistical information, including median, range, inter-quartile range, for a given box-and-whisker plot.</p> <p>EX Use data from a sample or data display to make an inference.</p>	
<p>1.4.6 Determine and explain how the same set of data can support different points of view.</p> <p align="center">EXAMPLES</p> <p>EX Explain how the same set of data can support different points of view.</p> <p>EX Explain how data have been used or misused to support a point of view.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.5: Understand and apply concepts and procedures from algebraic sense.	
<i>Patterns and functions</i>	
<p>1.5.1 Apply knowledge of linear relationships to recognize, extend, and/or create patterns in tables and graphs.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select a linear relationship that has the same pattern as another linear relationship.</p> <p>EX Use technology to generate graphic representations of linear relationships.</p> <p>EX Select, extend, or represent patterns and sequences using tables, graphs, or expressions.</p> <p>EX Use technology to generate graphic representations of linear and non-linear relationships.</p> <p>EX Describe the relationship between a term in a sequence and its position in the sequence.</p> <p>EX Identify patterns that are linear relations and provides missing terms in the beginning, middle, and/or end of the pattern.</p>	SE: pp. 68–71, 72–75, 76–79
<p>1.5.2 Determine a rule for linear patterns and sequences with combinations of two operations in the rule.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Write a rule to represent a pattern with combinations of two arithmetic operations in the rule.</p> <p>EX Use an equation or graph to describe a linear relationship.</p> <p>EX Use technology to determine the rule for a linear pattern or sequence.</p> <p>EX Create a representation of a linear relationship given a rule and explains what makes it a linear relationship.</p>	SE: pp. 12–15, 72–75, 76–79

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<i>Symbols and notations</i>	
<p>1.5.3 Express relationships between quantities using equality and inequality symbols.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Express relationships between quantities including integers, and non-negative decimals and fractions using =, ≠, <, >, ≤, and ≥.</p> <p>EX Describe a situation represented by an equation or inequality involving integers and/or non-negative decimals and fractions.</p> <p>EX Write a simple equation or inequality using rational numbers and integers to represent a given situation.</p>	<p>SE: pp. 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75</p>
<p>1.5.4 Use variables to write expressions, linear equations, and inequalities that represent situations involving integers and non-negative decimals and fractions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Write an expression, equation, or inequality using variables to represent a given situation.</p> <p>EX Describe a situation that corresponds to a given expression, equation, or inequality.</p> <p>EX Describe a situation involving a linear relationship that matches a given graph.</p> <p>EX Translate among different representations of linear equations, using symbols, graphs, tables, diagrams, or written descriptions.</p> <p>EX Explain the meaning of a variable in a formula, expression, equation, or inequality.</p>	<p>SE: pp. 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 60–63, 64–67, 68–71, 72–75, 76–79</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<i>Evaluating and solving</i>	
<p>1.5.5 Apply algebraic properties to evaluate expressions and formulas using order of operations. EXAMPLES</p> <ul style="list-style-type: none"> EX Substitute non-negative rational values for variables to evaluate expressions and formulas. EX Evaluate expressions and formulas using order of operations. EX Write an expression with a variable that represents a given situation and determine the value of the expression given a value for the variable. EX Simplify expressions using order of operations and explain the procedure. 	<p>SE: pp. 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>1.5.6 Apply a variety of properties to solve one-step and two-step equations with one variable. EXAMPLES</p> <ul style="list-style-type: none"> EX Solve single variable one-step or two-step equations and checks the solution. EX Write and solve a single-variable one- or two-step equation for a given situation. EX Explain or show the meaning of the solution to an equation. 	<p>SE: pp. 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 72–75, 76–79</p>
EALR 2: The student uses mathematics to define and solve problems.	
Component 2.1: Define problems.	
<p>2.1.1 Formulate questions to be answered to solve a problem. EXAMPLES</p> <ul style="list-style-type: none"> EX Investigate a situation and determines if there is a problem to solve. EX Define or clarify the question the problem presents. EX Generate questions to be answered in order to solve the problem. 	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>2.1.2 Determine what information is missing or extraneous. EXAMPLES EX Determine what needed information is missing. EX Differentiate between necessary and extraneous information.</p>	
<p>2.1.3 Identify what is known and unknown in new situations. EXAMPLES EX Determine what numbers, data, and information are known and unknown.</p>	<p>SE: pp. 4–7, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>Component 2.2: Construct solutions.</p>	
<p>2.2.1 Select and use relevant information to construct solutions. EXAMPLES EX Select and use relevant data or information from the problem. EX Determine whether a given solution shows the use of relevant information.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions. EXAMPLES EX Select and use appropriate concepts and procedures to construct a solution. EX Determine whether a given solution shows use of concepts and procedures that are appropriate.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>2.2.3 Apply a variety of strategies and approaches to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use tools such as rulers, protractors, manipulatives, calculators, and technology to construct a solution.</p> <p>EX Apply a variety of strategies and approaches.</p> <p>EX Determine when an approach is unproductive and modify or try a new approach.</p> <p>EX Determine whether a given solution shows the application of strategies that are appropriate.</p>	
<p>2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s).</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Check work for mathematical accuracy.</p> <p>EX Determine whether the solution is reasonable for the situation.</p> <p>EX Check the solution with an estimate or results from an alternate approach.</p> <p>EX Check to be certain the solution answers the question.</p>	<p>SE: pp. 72–75</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 3: The student uses mathematical reasoning.	
Component 3.1: Analyze information.	
<p>3.1.1 Analyze numerical, measurement, geometric, probability, statistical, and/or algebraic information from a variety of sources.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Analyze mathematical information or results.</p> <p>EX Compare mathematical information represented in tables, charts, graphs, text, diagrams, figures, or pictures.</p> <p>EX Identify agreements or differences between mathematical information, diagrams, and/or pictorial representations.</p> <p>EX Differentiate between valid and invalid analysis of mathematical information or results.</p>	SE: pp. 76–79
Component 3.2: Conclude.	
<p>3.2.1 Draw and support conclusions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Draw a conclusion from a given situation and support the conclusion with appropriate numerical, measurement, geometric, probability, statistical, and/or algebraic data or facts.</p> <p>EX Use data or examples as evidence to support or contradict a conclusion.</p> <p>EX Identify a valid conclusion based on given information.</p>	SE: pp. 68–71, 72–75, 76–79

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>3.2.2 Evaluate selection and implementation of procedures and conclusions in various situations. EXAMPLES EX Check the viability and appropriate use of a selected procedure in a given situation. EX Evaluate a conclusion based on given information and/or procedures used.</p>	
<p>Component 3.3: Verify results.</p>	
<p>3.3.1 Justify results using evidence. EXAMPLES EX Justify results using evidence and information from the problem situation and/or known facts, patterns, and relationships.</p>	
<p>3.3.2 Evaluate reasonableness of results. EXAMPLES EX Check for reasonableness of results in a given situation. EX Verify that the solution to a real-world problem makes sense in relation to the situation.</p>	
<p>3.3.3 Validate thinking about numerical, measurement, geometric, probability, statistical, and/or algebraic ideas. EXAMPLES EX Explain and support thinking about mathematical ideas using models, facts, patterns, or relationships. EX Refute a conjecture using a counter example.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 4. The student communicates knowledge and understanding in both everyday and mathematical language.	
Component 4.1: Gather information.	
<p>4.1.1 Develop and follow a plan for collecting numerical, measurement, geometric, probability, statistical, and/or algebraic information.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine appropriate mathematical information needed for a specific purpose or audience.</p> <p>EX Develop a plan, not a survey, to collect mathematical information, including what information is needed and where and how to find the information.</p> <p>EX List or describe the general procedure or order of steps of a plan to gather exactly the mathematical information sought with no irrelevant information.</p> <p>EX Follow a plan, not a survey, to collect mathematical information for a given audience and purpose.</p>	
<p>4.1.2 Extract numerical, measurement, geometric, probability, statistical, and/or algebraic information from multiple sources.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Extract and use mathematical information from various sources such as pictures, symbols, text, tables, charts, line graphs, circle graphs, histograms, scatter plots, stem-and-leaf plots, box-and-whisker plots, diagrams, and/or models for a purpose.</p> <p>EX Write or identify questions to be answered using data sources such as magazines, newspapers, menus, sales and travel brochures, schedules, and/or sales receipts.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 4.2: Organize, represent, and share information.	
<p>4.2.1 Organize numerical, measurement, geometric, probability, statistical, and/or algebraic information for a given purpose.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Select a useful format and organize mathematical information for a given purpose.</p>	SE: pp. 76–79
<p>4.2.2 Represent numerical, measurement, geometric, probability, statistical, and/or algebraic information in graphs or other appropriate forms.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Represent mathematical information using tables, charts, histograms, scatter plots, stem-and-leaf plots, box-and-whisker plots, pictures, models, drawings, or other appropriate forms including title, labels, appropriate and consistent scales, and accurate display of data.</p>	SE: pp. 76–79
<p>4.2.3 Use mathematical language to explain or describe numerical, measurement, geometric, probability, statistical, and/or algebraic ideas and information in ways appropriate for audience and purpose.</p> <p style="text-align: center;">EXAMPLES</p> <p>ex Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures, or strategies appropriate for a given audience or purpose.</p>	SE: pp. 8–11, 68–71, 76–79

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EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-world situations.	
Component 5.1: Relate concepts and procedures within mathematics.	
<p>5.1.1 Apply concepts and procedures from two or more of the content strands, including number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense, in a given problem or situation.</p> <p>EXAMPLES</p> <p>ex Use concepts and procedures from two or more content strands in a given problem or situation.</p>	
<p>5.1.2 Relate and use different mathematical models and representations of the same situation.</p> <p>EXAMPLES</p> <p>ex Identify mathematical models or representations that are equivalent to a given model or representation.</p> <p>ex Explain how two or more different models represent the same mathematical idea.</p> <p>ex Create a model or representation that is equivalent to a given graphical, numerical, pictorial, geometric, and/or written model or representation.</p>	
Component 5.2: Relate mathematical concepts and procedures to other disciplines.	
<p>5.2.1 Use mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines.</p> <p>EXAMPLES</p> <p>ex Provide examples of mathematical patterns and ideas in other disciplines.</p> <p>ex Use mathematical concepts and procedures in other disciplines.</p>	

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<p>5.2.2 Recognize the contributions of individuals and cultures to the development of mathematics. EXAMPLES EX Describe a contribution to the development of mathematics.</p>	
<p>Component 5.3: Relate mathematical concepts and procedures to real-world situations.</p>	
<p>5.3.1 Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLES EX Generate and explain examples of mathematics in everyday life. EX Describe situations in which mathematics can be used to solve problems with local implications in a school or town.</p>	
<p>5.3.2 Understand that mathematics is used in many occupations or careers. EXAMPLES EX Describe specific examples of mathematics associated with a given career. EX Describe the mathematical requirements to enter a given career. EX Describe the mathematics used by workers in a specific job.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 1: The student understands and applies the concepts and procedures of mathematics.	
Component 1.1: Understand and apply concepts and procedures from number sense.	
<i>Number and numeration</i>	
<p>1.1.1 Understand the concept and symbolic representation of rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain the meaning of integers raised to whole number exponents and provide examples.</p> <p>EX Explain the meaning of an integer squared and provide examples.</p> <p>EX Explain the meaning of square root of a whole number and provide examples.</p>	SE: pp. 72–75
<p>1.1.2 Understand the relative values of rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Order rational numbers including integers, whole number powers, and square roots, and explain why one rational number is greater than, equal to, or less than another.</p> <p>EX Order rational numbers including integers, whole number powers, and square roots based on a picture of a real world model, locations on a number line, or symbolic representation.</p> <p>EX Explain why one given rational number including integers, whole-number powers, and square roots is greater than, equal to, or less than another rational number.</p>	SE: pp. 72–75

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.1.3 Understand and use the distributive property and the properties of addition and multiplication on rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Demonstrate the distributive property of multiplication over addition using an area model or picture.</p> <p>EX Use the distributive property to simplify expressions that include integers.</p> <p>EX Use the distributive property to factor expressions.</p> <p>EX Represent or evaluate the application of the addition and multiplication properties on rational numbers including integers.</p> <p>EX Use the addition and multiplication properties, including the distributive property, to assist with computations.</p>	<p>SE: pp. 4–7, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35</p>
<p>1.1.4 Apply the concepts of ratio, percent, and direct proportion.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine an unknown value for a dimension or a number of events or objects using ratio or proportion.</p> <p>EX Determine an unknown value for a dimension or a number of events or objects using percents.</p> <p>EX Select and use the most advantageous representation of ratios or percents in a given situation.</p> <p>EX Determine a ratio or percent in a given situation.</p>	<p>SE: pp. 36–39, 40–43, 44–47, 48–51</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Computation	
<p>1.1.5 Understand the meaning of addition, subtraction, multiplication, division, powers, and square roots on rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain the meaning of multiplication and division of integers including remainders using words, pictures, or models.</p> <p>EX Explain the meaning of taking whole number powers of integers or square roots of whole numbers using words, pictures, or models.</p> <p>EX Represent a situation involving multiplication or division of integers, whole number powers of integers, or square roots of whole numbers.</p> <p>EX Explain how the result of dividing a rational number by a fraction between 0 and 1 is different from the result of dividing the same number by a fraction greater than 1.</p> <p>EX Translate a given situation, picture, or illustration into a numeric expression or equation involving decimals, fractions, integers, whole number powers, and square roots of whole numbers.</p> <p>EX Select and/or use an appropriate operation to show understanding of whole number powers and square roots.</p> <p>EX Convert between equivalent forms of rational numbers including whole number powers and square roots of perfect squares.</p>	<p>SE: pp. 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.1.6 Apply strategies or uses computational procedures using order of operations and addition, subtraction, multiplication, division, powers, and square roots on rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Compute with rational numbers using order of operations.</p> <p>EX Compute using whole number powers and/or square roots of perfect squares.</p> <p>EX Interpret and apply the concept of remainder in a given situation.</p> <p>EX Complete multi-step computations using two or more different operations with rational numbers.</p>	<p>SE: pp. 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51</p>
<p>1.1.7 Apply strategies and uses tools to complete tasks involving computation of rational numbers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and justify appropriate strategies and tools from among mental computation, estimation, calculators, manipulatives, and paper and pencil to compute in a given situation.</p> <p>EX Explain why a selected strategy or tool is more efficient or more appropriate than another strategy or tool for a situation.</p> <p>EX Describe strategies for mental computation with integers using powers and square roots.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p><i>Estimation</i></p>	
<p>1.1.8 Apply estimation strategies involving computation of rational numbers using addition, subtraction, multiplication, division, powers, and square roots to predict results or determine reasonableness of answers.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select, explain, and justify situations involving rational numbers where estimates are sufficient and others for which an exact value is required.</p> <p>EX Use a variety of estimation strategies to predict results prior to computation.</p> <p>EX Use a variety of estimation strategies to verify the reasonableness of calculated results.</p> <p>EX Compute to check the reasonableness of estimated answers for a given situation.</p> <p>EX Explain an appropriate adjustment when an estimate and a computation do not agree.</p> <p>EX Explain or describe a strategy for estimation involving computation with decimals, fractions, and integers, using +, -, x, ÷, powers, and square roots.</p>	

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Component 1.2: Understand and apply concepts and procedures from measurement.	
<i>Attributes, units, and systems</i>	
<p>1.2.1 Understand how a change in one linear dimension affects surface area and volume of rectangular prisms and cylinders and how changes in two linear dimensions affect perimeter and area of rectangles.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine and/or describe the impact that a change in one dimension has on volume and surface area in right cylinders and rectangular prisms.</p> <p>EX Determine and/or describe a change in a linear dimension given a change in volume and/or surface area of rectangular prisms and cylinders.</p> <p>EX Determine and/or describe the impact on perimeter and/or area of a rectangle caused by a change in two dimensions.</p>	SE: pp. 4–7
<p>1.2.2 Understand and use rate, slope, and other derived units of measurement.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Explain the concept of a rate or slope in a given situation.</p> <p>EX Explain how division of measurements produces a derived unit of measurement.</p> <p>EX Calculate a rate of change or slope in a situation.</p> <p>EX Use unit analysis to find equivalent rates.</p> <p>EX Use rate to determine a measured outcome and labels units.</p>	SE: pp. 60–63, 64–67, 68–71

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.2.3 Explain why different situations require different levels of precision.</p> <p align="center">EXAMPLES</p> <p>EX Describe or explain why different situations require different levels of precision.</p> <p>EX Compare situations that require different levels of precision.</p> <p>EX Select and describe an appropriate unit of measure for the precision needed in a given situation.</p> <p>EX Convert between units in a measurement system to demonstrate understanding of the precision required.</p>	<p>SE: pp. 36–39, 56–59</p>
<p><i>Procedures and estimation</i></p>	
<p>1.2.4</p> <p align="center"><i>Maintain skills.</i></p>	
<p>1.2.5 Use formulas, including the Pythagorean Theorem, to determine measurements related to triangles, rectangular prisms, and right cylinders.</p> <p align="center">EXAMPLES</p> <p>EX Explain how to use a formula to calculate and label the surface area and volume of a prism or cylinder.</p> <p>EX Use the Pythagorean Theorem to determine and label a missing dimension of a right triangle or prism.</p> <p>EX Determine and label surface areas of right cylinders and right prisms.</p> <p>EX Determine and label dimensions of a triangle, prism, or cylinder based on a given perimeter, circumference, area, and/or volume.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.2.6 Apply strategies to obtain reasonable estimates of surface area and volume of right cylinders and rectangular prisms, and the lengths of sides of right triangles.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Describe situations in which estimated measures are sufficient.</p> <p>EX Use estimation to determine and label volume and surface area for right cylinders and right prisms and explain why an approximation is appropriate.</p> <p>EX Use estimation strategies to determine and label the approximate length of the third side of a right triangle given the lengths of two sides.</p> <p>EX Use estimation strategies to determine and labels the approximate distance or height in a situation using similar triangles or the Pythagorean Theorem.</p> <p>EX Describe a procedure that would obtain an estimated measurement.</p> <p>EX Explain why estimation would be used rather than a direct measurement.</p>	
<p>Component 1.3: Understand and apply concepts and procedures from geometric sense.</p>	
<p><i>Properties and relationships</i></p>	
<p>1.3.1 Understand properties of cylinders, cones, and pyramids.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Identify or describe cylinders, cones, or pyramids.</p> <p>EX Classify and label cylinders, cones, or pyramids.</p> <p>EX Draw nets of cylinders, prisms, and pyramids.</p> <p>EX Identify and label rays, lines, end points, line segments, vertices, and angles in three-dimensional shapes and figures.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.3.2 Use the properties of similarity; uses the Pythagorean Theorem to determine if a triangle is a right triangle. EXAMPLES</p> <ul style="list-style-type: none"> EX Sort, classify, and label similar and congruent figures. EX Use properties of similarity to draw, describe, sort, classify, and/or label two-dimensional figures in illustrations or real life. EX Draw a shape similar to a given complex shape. EX Create a scale drawing and label the scale and the dimensions using grid paper or appropriate technology. EX Use the Pythagorean Theorem to determine if a triangle is a right triangle. 	<p>SE: pp. 40–43</p>
<p><i>Locations and transformations</i></p>	
<p>1.3.3 Describe the relative position of points on a coordinate grid. EXAMPLES</p> <ul style="list-style-type: none"> EX Locate a missing vertex given the coordinates of the vertices of a polygon. EX Explain a method for finding the missing side of a triangle in a real-world setting. EX Determine the distance between two points on a line parallel to an axis of a coordinate grid. EX Use the Pythagorean Theorem to determine the distance between two points on a coordinate grid. 	<p>SE: pp. 60–63, 64–67, 68–71, 72–75, 76–79</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.3.4 Apply a combination of translations, reflections, and/or rotations to 2-dimensional figures. EXAMPLES</p> <ul style="list-style-type: none"> EX Use any combination of rotations, reflections, and/or translations to draw or locate congruent figures on a grid. EX Use ordered pairs or labels to describe the location of a picture or an object transformed by any combination of translations, reflections, and/or rotations on a coordinate grid. EX Draw the image of a given shape or figure after a combination of transformations. EX Tessellate a plane by using transformations. EX Create a design using a combination of two or more transformations. 	
<p>Component 1.4: Understand and apply concepts and procedures from probability and statistics.</p>	
<p><i>Probability</i></p>	
<p>1.4.1 Understand the concept of compound events. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine and explain when events are compound. EX Describe the difference between compound events involving “and” or “or”. EX Describe or represent compound events. 	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.4.2 Use procedures to determine the probability of compound events.</p> <p align="center">EXAMPLES</p> <p>EX Determine the sample space for simple experiments involving independent or compound events.</p> <p>EX Calculate the probability of two independent events occurring simultaneously using various methods including organized lists, tree diagrams, counting procedures, and area models.</p> <p>EX Explain the relationship between theoretical and empirical probability of compound events.</p> <p>EX Predict the probability of outcomes of experiments and relates the predictions to empirical results.</p> <p>EX Design a situation that would produce a given probability.</p> <p>EX Design a game using compound probabilities with equal chances of winning for all players.</p>	
<p><i>Statistics</i></p>	
<p>1.4.3 Describe how different samples of a population may affect the data collected.</p> <p align="center">EXAMPLES</p> <p>EX Describe bias in population samples and explains a procedure for selecting an unbiased representative sample.</p> <p>EX Examine the results of a survey given to two different sample groups to determine if differences in survey results were caused by differences in samples.</p> <p>EX Determine whether claims made about results are based on biased data due to sampling.</p> <p>EX Select an appropriate population for a given survey question.</p> <p>EX Determine whether a sampling method will result in a representative sample.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.4.4 Identify clusters and outliers in data and determine effects on the measures of central tendency. EXAMPLES</p> <ul style="list-style-type: none"> EX Identify clusters and outliers and determine how they may affect measures of central tendency. EX Modify a set of data so that the median is a more reasonable measure of central tendency than the mean. EX Examine variations in data, including clusters and outliers, to select the most appropriate measure of central tendency to describe a given set of data. EX Determine and/or use the mean, median, mode, and/or range for a set of data. 	
<p>1.4.5 Read and interpret data presented in diagrams, tables of ordered pairs, and scatter plots and makes predictions based on the data. EXAMPLES</p> <ul style="list-style-type: none"> EX Describe trends or patterns in data presented in a table of ordered pairs or a scatter plot. EX Read and interpret the data in Venn Diagrams, tables of ordered pairs, and/or scatter plots. EX Select a line of best fit for a set of data to predict a future value of a variable to interpolate between existing data values. EX Draw trend lines with or without technology and makes predictions about real-world situations. EX Explain whether stem-and-leaf plot, box-and-whisker plot, or scatter plot is more appropriate for a given set of data, a particular situation, or purpose, or answers a question most effectively. EX Determine whether claims made about results are based on biased representations of data. EX Predict an outcome given a linear relationship involving non-negative rational numbers. 	<p>SE: pp. 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

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<p>1.4.6 Determine and explain how the same set of data can support different points of view. EXAMPLES EX Explain how the same set of data can support different points of view. EX Explain how data have been used or misused to support a point of view.</p>	
<p>Component 1.5: Understand and apply concepts and procedures from algebraic sense.</p>	
<p><i>Patterns and functions</i></p>	
<p>1.5.1 Apply knowledge of linear and non-linear relationships to recognize, extend, and create patterns and sequences in tables and graphs. EXAMPLES EX Extend, represent, or create linear and non-linear patterns and sequences using tables and graphs. EX Create a non-linear pattern and explains what makes it a non-linear pattern. EX Use technology to generate graphic representations of linear and non-linear relationships. EX Extend a pattern by supplying missing terms in the beginning, middle, or end of a linear or non-linear pattern. EX Create a pattern that is equivalent to a given pattern.</p>	<p>SE: pp. 52–55, 60–63, 64–67, 68–71, 76–79</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.2 Determine a rule for linear and non-linear functions represented in tables, graphs, patterns or situations. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine a rule, developed from a table, graph, or situation, using words or algebraic symbols. EX Develop a rule that describes a recursive pattern in terms of current and previous values such as the Fibonacci sequence. EX Describe a rule and/or construct a table to represent a pattern. EX Use technology to develop a table or graph from a given rule. 	<p>SE: pp. 52–55, 64–67, 68–71, 76–79</p>
<p><i>Symbols and notations</i></p>	
<p>1.5.3 Express relationships between quantities using equality and inequality symbols. EXAMPLES</p> <ul style="list-style-type: none"> EX Express relationships between quantities including whole number exponents and square roots using =, ≠, <, >, ≤, and ≥. EX Describe a situation represented by an equation or inequality involving whole number exponents and/or square roots. EX Use equality and inequality symbols to express relationships between rational numbers using square roots and powers in a given situation. 	<p>SE: pp. 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 60–63, 64–67, 68–71</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.4 Use variables to write expressions, linear equations, and inequalities that represent situations involving relationships with rational numbers.</p> <p align="center">EXAMPLES</p> <p>EX Use variables to write an expression, equation, or inequality to represent a given situation.</p> <p>EX Describe a situation that corresponds to a given expression, equation or inequality.</p> <p>EX Describe a situation involving a linear relationship that matches a given graph.</p> <p>EX Translate among different representations of linear equations, using symbols, graphs, tables, diagrams, or written descriptions.</p> <p>EX Explain the meaning of a variable in a formula, expression, equation, or inequality.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p><i>Evaluating and solving</i></p>	
<p>1.5.5 Apply algebraic properties to simplify single-variable expressions.</p> <p align="center">EXAMPLES</p> <p>EX Match single-variable expressions to equivalent simplified expressions.</p> <p>EX Simplify single-variable expressions by combining like terms and explains the procedure.</p> <p>EX Simplify single-variable expressions involving the properties of addition and multiplication.</p> <p>EX Simplify an expression or formula that involves order of operations.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<p>1.5.6 Apply a variety of properties to solve multi-step equations and one-step inequalities with one variable. EXAMPLES</p> <p>EX Solve multi-step single-variable equations involving parentheses, like terms, or variables on both sides of the equal sign.</p> <p>EX Write and solve multi-step single variable equations involving parentheses, like terms, or variables on both sides of the equal sign.</p> <p>EX Solve, or write and solve, one-step inequalities.</p> <p>EX Explain or show the meaning of the solution to an equation.</p>	<p>SE: pp. 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 60–63</p>
<p>EALR 2: The student uses mathematics to define and solve problems.</p>	
<p>Component 2.1: Define problems.</p>	
<p>2.1.1 Formulate questions to be answered to solve a problem. EXAMPLES</p> <p>EX Investigate a situation and determines if there is a problem to solve.</p> <p>EX Define or clarify the question the problem presents.</p> <p>EX Generate questions to be answered in order to solve the problem.</p>	
<p>2.1.2 Determine what information is missing or extraneous. EXAMPLES</p> <p>EX Determine what needed information is missing.</p> <p>EX Differentiate between necessary and extraneous information.</p>	
<p>2.1.3 Identify what is known and unknown in new situations. EXAMPLES</p> <p>EX Determine what numbers, data, and information are known and unknown.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 60–63, 64–67, 68–71, 72–75, 76–79</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 2.2: Construct solutions.	
<p>2.2.1 Select and use relevant information to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use relevant information from the problem.</p> <p>EX Determine whether a given solution shows the use of relevant information.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use appropriate concepts and procedures to construct a solution.</p> <p>EX Determine whether a given solution shows use of concepts and procedures that are appropriate.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.3 Apply a variety of strategies and approaches to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use tools such as rulers, protractors, a compass, manipulatives, calculators, and technology to construct a solution.</p> <p>EX Apply a variety of strategies and approaches.</p> <p>EX Determine when an approach is unproductive and modify or try a new approach.</p> <p>EX Determine whether a given solution shows the application of strategies that are appropriate.</p>	<p>SE: pp. 4–7, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 76–79</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s). EXAMPLES</p> <ul style="list-style-type: none"> EX Check work for mathematical accuracy. EX Determine whether the solution is reasonable for the situation. EX Check the solution with an estimate or results from an alternate approach. EX Check to be certain the solution answers the question. 	<p>SE: pp. 52–55, 56–59, 60–63, 76–79</p>
<p align="center">EALR 3: The student uses mathematical reasoning.</p>	
<p>Component 3.1: Analyze information.</p>	
<p>3.1.1 Analyze numerical, measurement, geometric, probability, statistical, and/or algebraic information from a variety of sources. EXAMPLES</p> <ul style="list-style-type: none"> EX Analyze mathematical information or results. EX Compare mathematical information represented in tables, charts, graphs, text, diagrams, figures, or pictures. EX Identify agreements or differences between mathematical information, diagrams, and/or pictorial representations. EX Differentiate between valid and invalid analysis of mathematical information or results. 	<p>SE: pp. 40–43, 60–63, 64–67, 68–71, 72–75, 76–79</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 3.2: Conclude.	
<p>3.2.1 Draw and support conclusions. EXAMPLES</p> <ul style="list-style-type: none"> EX Draw a conclusion from a given situation and support the conclusion with appropriate numerical, measurement, geometric, probability, statistical, and/or algebraic data or facts. EX Use data or examples as evidence to support or contradict a conclusion. EX Identify a valid conclusion based on given information. 	SE: pp. 40–43, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75
<p>3.2.2 Evaluate selection and implementation of procedures and conclusions in various situations. EXAMPLES</p> <ul style="list-style-type: none"> EX Check the viability and appropriate use of a selected procedure in a given situation. EX Evaluate a conclusion based on given information and/or procedures used. 	
Component 3.3: Verify results.	
<p>3.3.1 Justify results using evidence. EXAMPLES</p> <ul style="list-style-type: none"> EX Justify results using evidence and information from the problem situation and/or known facts, patterns, and relationships. 	SE: pp. 8–11
<p>3.3.2 Evaluate reasonableness of results. EXAMPLES</p> <ul style="list-style-type: none"> EX Check for reasonableness of results in a given situation. EX Verify that the solution to a real-world problem makes sense in relation to the situation. 	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>3.3.3 Validate thinking about numerical, measurement, geometric, probability, statistical, and/or algebraic ideas. EXAMPLES EX Explain and support thinking about mathematical ideas using models, facts, patterns, or relationships. EX Refute a conjecture using a counter example.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 24–27, 28–31, 32–35, 36–39, 40–43, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p style="text-align: center;">EALR 4. The student communicates knowledge and understanding in both everyday and mathematical language.</p>	
<p>Component 4.1: Gather information.</p>	
<p>4.1.1 Develop and follow a plan for collecting numerical, measurement, geometric, probability, statistical, and/or algebraic information. EXAMPLES EX Determine appropriate mathematical information needed for a specific purpose or audience. EX Develop a plan, not a survey, to collect mathematical information, including what mathematical information is needed and where and how to find the information. EX List or describe the general procedure or order of steps of a plan to gather exactly the mathematical information sought with no irrelevant information. EX Follow a plan, not a survey, to collect mathematical information for a given audience and purpose.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>4.1.2 Extract numerical, measurement, geometric, probability, statistical, and/or algebraic information from multiple sources.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Extract and use mathematical information from various sources such as pictures, symbols, text, tables, charts, diagrams, models, and graphs including scatter plots, stem-and-leaf plots, and box-and-whisker plots for a purpose.</p> <p>EX Write or identify questions to be answered using data sources such as magazines, newspapers, menus, sales or travel brochures, schedules, and/or sales receipts.</p>	<p>SE: pp. 56–59</p>
<p>Component 4.2: Organize, represent, and share information.</p>	
<p>4.2.1 Organize numerical, measurement, geometric, probability, statistical, and/or algebraic information for a given purpose.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select a useful format and organize mathematical information for a given purpose.</p>	<p>SE: pp. 56–59, 76–79</p>
<p>4.2.2 Represent numerical, measurement, geometric, probability, statistical, and/or algebraic information in graphs or other appropriate forms.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Represent mathematical information using tables, charts, scatter plots, stem-and-leaf plots, box-and-whisker plots, pictures, models, drawings, or other appropriate forms including title, labels, appropriate and consistent scales, and accurate display of data.</p>	

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<p>4.2.3 Use mathematical language to explain or describe numerical, measurement, geometric, probability, statistical, and/or algebraic ideas and information in ways appropriate for audience and purpose.</p> <p>EXAMPLES</p> <p>EX Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures, or strategies appropriate for a given audience or purpose.</p>	SE: pp. 8–11, 40–43
<p>EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-world situations.</p>	
<p>Component 5.1: Relate concepts and procedures within mathematics.</p>	
<p>5.1.1 Apply concepts and procedures from two or more of the content strands, including number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense, in a given problem or situation.</p> <p>EXAMPLES</p> <p>EX Use concepts and procedures from two or more content strands in a given problem or situation.</p>	
<p>5.1.2 Relate and use different mathematical models and representations of the same situation.</p> <p>EXAMPLES</p> <p>EX Create a model or representation that is equivalent to a given graphical, numerical, pictorial, geometric, and/or written model or representation.</p> <p>EX Explain how two or more different models represent the same mathematical idea.</p> <p>EX Create two equivalent mathematical models or representations for a given situation.</p>	

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Component 5.2: Relate mathematical concepts and procedures to other disciplines.	
<p>5.2.1 Use mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines. EXAMPLES ex Provide examples of mathematical patterns, ideas, and modeling in other disciplines. ex Use mathematical concepts and procedures in other disciplines.</p>	
<p>5.2.2 Recognize the contributions of individuals and cultures to the development of mathematics. EXAMPLES ex Describe a contribution to the development of mathematics.</p>	
Component 5.3: Relate mathematical concepts and procedures to real-world situations.	
<p>5.3.1 Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLES ex Generate and explain examples of mathematics in everyday life. ex Describe situations in which mathematics can be used to solve problems with local or statewide implications.</p>	
<p>5.3.2 Understand that mathematics is used in many occupations or careers. EXAMPLES ex Describe specific examples of mathematics associated with a given career. ex Explain the mathematical requirements to enter a given career. ex Explain the mathematics used by workers in a specific job.</p>	

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EALR 1: The student understands and applies the concepts and procedures of mathematics.	
Component 1.1: Understand and apply concepts and procedures from number sense.	
<i>Number and numeration</i>	
1.1.1 Understand and use scientific notation. EXAMPLES EX Explain the meaning of scientific notation using words, pictures, symbols, or numbers. EX Express and/or use equivalents among fractions, decimals, percents, integers, positive integer exponents, square roots, and/or numbers written in scientific notation. EX Read and translate numbers represented in scientific notation from calculators and other technology, texts, tables, and charts. EX Use scientific notation in a given situation.	
1.1.2 <i>Maintain skills</i>	
1.1.3 <i>Maintain skills</i>	
1.1.4 Understand the concept of inverse proportion and apply direct and inverse proportion. EXAMPLES EX Explain, illustrate, or describe examples of inverse proportion. EX Determine whether a real-world problem involves direct or inverse proportion. EX Use direct or inverse proportion to determine an unknown number of objects or an unknown value in a given situation.	SE: pp. 28–31, 72–75

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>Computation</p>	
<p>1.1.5 Compute using scientific notation. EXAMPLES EX Compute using scientific notation. EX Use scientific notation to simplify a calculation.</p>	
<p>1.1.6 Complete multi-step computations with combinations of rational numbers using order of operations and addition, subtraction, multiplication, division, powers, and square roots. EXAMPLES EX Calculate using order of operations on rational numbers. EX Use properties to reorder and rearrange expressions to compute more efficiently. EX Apply strategies to complete multi-step computations fluently.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>1.1.7 <p style="text-align: center;"><i>Maintain skills</i></p></p>	
<p>Estimation</p>	
<p>1.1.8 Apply estimation strategies in situations involving multi-step computations of rational numbers using addition, subtraction, multiplication, division, powers, and square roots to predict or determine reasonableness of answers. EXAMPLES EX Select, explain, and justify situations involving rational numbers where estimates are sufficient and others for which an exact value is required. EX Use a variety of estimation strategies to predict or to verify the reasonableness of calculated results. EX Describe a strategy used for estimation using multi-step computations.</p>	

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Component 1.2: Understand and apply concepts and procedures from measurement.	
<i>Attributes, units, and systems</i>	
<p>1.2.1 Understand the relationship between change in one or two linear dimension(s) and corresponding change in perimeter, area, surface area, and volume.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine and/or describe the impact of a change in two linear dimensions on perimeter, area, surface area, and/or volume.</p> <p>EX Describe how changes in one or more linear dimensions affect perimeter, area, and/or volume in real world situations.</p> <p>EX Determine the change in one or more linear dimensions given a change in perimeter, area, surface area, and/or volume.</p>	
<p>1.2.2</p> <p style="text-align: center;"><i>Maintain skills</i></p>	
<p>1.2.3 Apply unit conversions within measurement systems, U.S. or metric, to maintain an appropriate level of precision.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Convert within a system while maintaining the same level of precision.</p> <p>EX Use procedures to convert derived units of measure.</p> <p>EX Explain why different situations require different levels of precision.</p>	
<i>Procedures and estimation</i>	
<p>1.2.4</p> <p style="text-align: center;"><i>Maintain skills</i></p>	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.2.5 Use formulas to determine measurements related to right prisms, cylinders, cones, or pyramids. EXAMPLES EX Use formulas to determine and label the volume of a compound figure. EX Use formulas to determine and label the surface area of a compound figure.</p>	
<p>1.2.6 Understand and apply estimation strategies to obtain reasonable measurements at an appropriate level of precision. EXAMPLES EX Determine when approximate measurements are sufficient and estimate a reasonable measurement at an appropriate level of precision. EX Estimate quantities using derived units of measure. EX Estimate derived units of measure. EX Select and use a procedure to find a reasonable estimate for and label the volumes of prisms and cylinders. EX Estimate conversions between yards and meters and quarts and liters. EX Describe a procedure that would be an appropriate way to estimate a measurement.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.3: Understand and apply concepts and procedures from geometric sense.	
<i>Properties and relationships</i>	
<p>1.3.1 Understand the properties of and the relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Make and test conjectures about 2-dimensional and 3-dimensional shapes and their individual attributes and relationships using physical, symbolic, and technological models.</p> <p>EX Use the relationship between similar figures to determine the scale factor.</p> <p>EX Match or draw a 3-dimensional figure that could be formed by folding a given net.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.3.2 Use the properties of and relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures including prisms, cylinders, cones, and pyramids.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Match or draw 3-dimensional objects from different views using the same properties and relationships.</p> <p>EX Sort, classify, and label prisms, cylinders, cones, and pyramids.</p> <p>EX Sort, classify, and label 2-dimensional and 3-dimensional shapes according to characteristics including faces, edges, and vertices, using actual and virtual modeling.</p> <p>EX Construct geometric figures, including angle bisectors, perpendicular bisectors, and triangles given specific characteristic, using a variety of tools and technologies.</p> <p>EX Given a set of characteristics, draw a plane figure and justifies the drawing.</p> <p>EX Create a three-dimensional scale drawing with particular geometric properties.</p> <p>EX Use properties of triangles and special right triangles in situations.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<i>Locations and transformations</i>	
<p>1.3.3 Use geometric properties to determine and plot points on a coordinate grid.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine geometric properties of two-dimensional objects using coordinates on a grid.</p> <p>EX Determine the location of a set of points that satisfy given conditions.</p> <p>EX Represent real life situations on a coordinate grid or describes the location of a point that satisfies given conditions.</p> <p>EX Use tools and technology to draw objects on a coordinate grid based on given properties.</p> <p>EX Write ordered pairs to describe the locations of points or objects on a coordinate grid.</p>	<p>SE: pp. 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 56–59, 64–67, 68–71</p>
<p>1.3.4 Apply multiple transformations – translations, reflections, and/or rotations to 2-dimensional figures. Apply single dilations to 2-dimensional figures.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Use multiple translations, reflections, and/or rotations to create congruent figures on a coordinate grid.</p> <p>EX Use dilation of a given figure to form a similar figure.</p> <p>EX Determine the final coordinates of a point after multiple transformations.</p> <p>EX Describe a combination of two translations, reflections, and/or rotations to transform one figure to another figure with or without a coordinate grid.</p> <p>EX Determine rotational symmetry of a figure.</p> <p>EX Use technology to create 2- and 3-dimensional animations using combinations of transformations.</p>	

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Component 1.4: Understand and apply concepts and procedures from probability and statistics.	
<i>Probability</i>	
<p>1.4.1 Understand the concepts of dependent and independent events.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Describe whether the outcome of a first event affects the probability of a later event.</p> <p>EX Describe the difference between dependent and independent events.</p> <p>EX Describe the relationship between theoretical probability and empirical frequency of dependent events using simulations with and without technology.</p>	
<p>1.4.2 Use procedures to compute the probability of dependent and independent events.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine the sample space for independent or dependent events.</p> <p>EX Determine probabilities of dependent and independent events.</p> <p>EX Determine the outcomes and probability of multiple independent or dependent events.</p> <p>EX Modify or revise a simple game based on independent probabilities so that all players have an equal probability of winning.</p> <p>EX Create a simple game based on conditional probabilities.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>Statistics</p>	
<p>1.4.3 Determine possible sources of bias in questions, data collection methods, samples, and/or measures of central tendency and describe how such bias can be controlled. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine whether claims made about results are based on biased data due to sampling. EX Collect data using appropriate questions, samples, and/or methods to control for bias. EX Examine sources of bias in data collection questions, samples, and/or methods and describe how such bias can be controlled. EX Examine methods and technology used to investigate a research question. EX Determine how data collection methods impact the accuracy of the results. 	
<p>1.4.4</p> <p style="text-align: center;"><i>Maintain skills</i></p>	
<p>1.4.5 Use bivariate data in tables and displays to predict mathematical relationships. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine whether the underlying model for a set of data is linear. EX Determine whether an equation for a line is appropriate for a given set of data and supports the judgment with data. EX Match an equation with a set of data or a graphic display. EX Identify trends in a set of data in order to make a prediction based on the information. EX Determine whether a prediction is reasonable based on the given data or graph. 	<p>SE: pp. 24–27, 28–31, 44–47, 48–51, 52–55, 56–59</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.4.6 Determine and explain how the same set of data can support different points of view. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain how the same set of data can support different points of view. EX Explain, using data, how statistics have been used or misused to support a point of view or argument. EX Use statistics to support different points of view. EX Use a set of statistics to develop a logical point of view. 	
<p>Component 1.5: Understand and apply concepts and procedures from algebraic sense.</p>	
<p><i>Patterns and functions</i></p>	
<p>1.5.1 Apply knowledge of patterns or sequences to represent linear functions and/or exponential functions. EXAMPLES</p> <ul style="list-style-type: none"> EX Represent, extend, or create a pattern or sequence between sets of numbers representing a linear function. EX Identify, extend, or create a geometric sequence or pattern. EX Translate among equivalent numerical, graphical, and algebraic forms of a linear function. EX Create a pattern that has the same rule as a given pattern. EX Describe or represent linear and exponential patterns in words or algebraic symbols. 	<p>SE: pp. 24–27, 28–31, 32–35, 36–39, 40–43</p>

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.2 Determine an equation or rule for a linear function represented in a pattern, table, graph, or model. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine an equation of a line from a set of ordered pairs. EX Generate rules for a pattern to make predictions about future events. EX Write an equation or rule to describe a sequence. EX Write an equation for a line given a graph of the line. EX Write a rule for a recursive geometric pattern. EX Write an expression, equation, or inequality with two variables representing a linear and/or non-linear model of a real-world problem. EX Write an equation for a reasonable line to describe a set of bivariate data from a table or scatter plot. 	<p>SE: pp. 28–31, 40–43, 44–47, 48–51</p>
<p><i>Symbols and notations</i></p>	
<p>1.5.3</p> <p align="center"><i>Maintain skills</i></p>	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.4 Use variables to write expressions, linear equations and inequalities that represent situations involving rational numbers, whole number powers, and square roots. Uses variables to write non-linear equations.</p> <p align="center">EXAMPLES</p> <p>EX Use variables to write expressions and equations to represent situations that can be described using repeated addition or repeated multiplication.</p> <p>EX Write equations in recursive form for additive or multiplicative models.</p> <p>EX Match an expression or equation to a given real-world situation and explain the meaning of a variable.</p> <p>EX Differentiate between and explain correct vs. incorrect representations of algebraic situations.</p> <p>EX Describe the meaning of a variable in a formula, expression, equation, or inequality.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 68–71, 72–75, 76–79</p>
<p><i>Evaluating and solving</i></p>	
<p>1.5.5 Apply algebraic properties to simplify expressions involving whole number exponents.</p> <p align="center">EXAMPLES</p> <p>EX Write and/or simplify expressions including applying the distributive property.</p> <p>EX Simplify an expression involving exponents.</p> <p>EX Use multiple algebraic properties to simplify expressions.</p> <p>EX Evaluate formulas or expressions that involve squares or cubes.</p>	<p>SE: pp. 4–7, 16–19, 60–63, 64–67, 68–71</p>

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<p>1.5.6 Apply properties to solve multi-step equations and systems of equations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Rearrange formulas to solve for a particular variable.</p> <p>EX Determine the solution to a system of linear equations using tables, graphs, and/or symbols.</p> <p>EX Interpret solutions of systems of equations.</p> <p>EX Solve, or write and solve, multi-step equations.</p> <p>EX Solve, or write and solve, linear inequalities.</p> <p>EX Use systems of equations to determine the optimal solution for a given situation.</p>	<p>SE: pp. 4–7, 12–15, 16–19, 20–23, 28–31, 32–35, 36–39, 40–43, 48–51, 52–55, 56–59, 68–71, 72–75, 76–79</p>
<p>EALR 2: The student uses mathematics to define and solve problems.</p>	
<p>Component 2.1: Define problems.</p>	
<p>2.1.1 Formulate questions to be answered to solve a problem.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Investigate the situation and determines if there is a problem to solve.</p> <p>EX Define or clarify the question the problem presents.</p> <p>EX Generate questions to be answered in order to solve the problem.</p>	
<p>2.1.2 Determine what information is missing or extraneous.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine what needed information is missing.</p> <p>EX Differentiate between necessary and extraneous information.</p>	
<p>2.1.3 Identify what is known and unknown in complex situations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Examine information to determine what is known and unknown.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

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Component 2.2: Construct solutions.	
<p>2.2.1 Select and use relevant information to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use relevant information from the problem.</p> <p>EX Determine whether a given solution shows the use of relevant information.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use appropriate concepts and procedures to construct a solution.</p> <p>EX Determine whether a given solution shows use of concepts and procedures that are appropriate.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.3 Apply a variety of strategies and approaches to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use tools to construct a solution.</p> <p>EX Apply a variety of strategies and approaches.</p> <p>EX Determine when an approach is unproductive and modifies or tries a new approach.</p> <p>EX Determine whether a given solution shows the application of strategies that are appropriate.</p>	<p>SE: pp. 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s). EXAMPLES</p> <ul style="list-style-type: none"> EX Check work for mathematical accuracy. EX Determine whether the solution is reasonable for the situation. EX Check the solution with an estimate or results from an alternate approach. EX Check to be certain the solution answers the question. 	
<p>EALR 3: The student uses mathematical reasoning.</p>	
<p>Component 3.1: Analyze information.</p>	
<p>3.1.1 Analyze, compare, and integrate mathematical information from multiple sources. EXAMPLES</p> <ul style="list-style-type: none"> EX Analyze mathematical information or results. EX Integrate information from two or more sources. EX Compare mathematical information in tables, charts, graphs, text, diagrams, figures, or pictorial representations. EX Differentiate between valid and invalid analysis of mathematical information or results. EX Analyze information to make a conjecture. 	<p>SE: pp. 40–43, 44–47, 48–51, 56–59</p>

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Component 3.2: Conclude.	
<p>3.2.1 Draw and support conclusions, using inductive or deductive reasoning.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Draw a conclusion from a given situation and support the conclusion with appropriate mathematical data or facts.</p> <p>EX Use data or examples as evidence to support or contradict a conclusion or conjecture.</p>	SE: pp. 40–43, 44–47, 72–75
<p>3.2.2 Evaluate procedures and conclusions to make needed revisions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Check the viability and appropriate use of a selected procedure in a given situation</p> <p>EX Evaluate a conclusion based on given information and/or procedures used and describes a revision as needed.</p>	
Component 3.3: Verify results.	
<p>3.3.1 Justify results using inductive or deductive reasoning.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Justify results using evidence and information from the problem situation and/or known facts, patterns, relationships, and proportional reasoning.</p>	SE: pp. 16–19, 40–43, 44–47, 72–75
<p>3.3.2 Evaluate reasonableness of results.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Check for reasonableness of results in a given situation.</p> <p>EX Verify that the solution to a real-world problem makes sense in relation to the situation.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<p>3.3.3 Validate thinking about mathematical ideas. EXAMPLES EX Justify or refute claims and supporting arguments using data, models, known facts, patterns, relationships, counter examples, and/or proportional reasoning.</p>	
<p>EALR 4. The student communicates knowledge and understanding in both everyday and mathematical language.</p>	
<p>Component 4.1: Gather information.</p>	
<p>4.1.1 Develop, select, and/or apply an efficient system for collecting mathematical information. EXAMPLES EX Determine appropriate mathematical information needed for a specific purpose or audience. EX Develop a plan, not a survey, to collect information, including what mathematical information is needed and where and how to find the information. EX Describe the general procedures, not a survey, to gather exactly the mathematical information sought and no irrelevant information. EX Follow a plan, not a survey, to collect mathematical information for a given audience and purpose.</p>	
<p>4.1.2 Extract mathematical information from multiple sources. EXAMPLES EX Extract and use mathematical information from various sources such as pictures, symbols, text, tables, charts, graphs, diagrams, and models for a purpose. EX Write or identify questions to be answered using data sources such as magazines, newspapers, menus, sales or travel brochures, TV or bus schedules, and/or sales receipts.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 4.2: Organize, represent, and share information.	
<p>4.2.1 Organize, clarify, and refine mathematical information relevant to a given purpose. EXAMPLES ex Select a useful format and organize mathematical information for a given purpose. ex Create an organized list to communicate information to a specific audience and/or for a specific purpose.</p>	SE: pp. 16–19, 24–27
<p>4.2.2 Represent mathematical information in graphs or other appropriate forms. EXAMPLES ex Represent mathematical information using pictures, tables, Venn diagrams, scatter plots, 2- or 3-dimensional drawings, or other appropriate including title, labels, appropriate and consistent scales, and accurate display of data.</p>	SE: pp. 24–27, 44–47, 48–51, 56–59, 64–67
<p>4.2.3 Use mathematical language to explain or describe mathematical ideas and information in ways appropriate for audience and purpose. EXAMPLES ex Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures, or strategies appropriate for a given audience or purpose.</p>	SE: pp. 16–19, 32–35, 36–39, 60–63, 68–71, 72–75, 76–79

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-world situations.	
Component 5.1: Relate concepts and procedures within mathematics.	
<p>5.1.1 Apply concepts and procedures from two or more content strands, including number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense, in a given problem or situation. EXAMPLES ex Use concepts and procedures from two or more content strands in a given problem or situation.</p>	
<p>5.1.2 Relate and use different mathematical models and representations of the same situation. EXAMPLES ex Explain or demonstrate how two or more different models represent the same mathematical idea. ex Create a model or representation that is equivalent to a given graphical, numerical, pictorial, geometric, and/or written model or representation. ex Create two or more equivalent models or representations for a given situation.</p>	
Component 5.2: Relate mathematical concepts and procedures to other disciplines.	
<p>5.2.1 Use mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines. EXAMPLES ex Provide examples of using mathematical thinking, patterns, ideas, and modeling in other disciplines. ex Use mathematical concepts and procedures in other disciplines.</p>	

<p>Mathematics Grade Level Expectations</p>	<p><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>5.2.2 Describe the contributions of individuals and cultures to the development of mathematics. EXAMPLES EX Describe a mathematical contribution related to current mathematical study. EX Trace the historical development of a mathematical concept.</p>	
<p>Component 5.3: Relate mathematical concepts and procedures to real-world situations.</p>	
<p>5.3.1 Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLES EX Describe situations in which mathematics can be used to solve problems with local, national, or international implications. EX Investigate a local community situation and recommend a solution based on mathematical information.</p>	
<p>5.3.2 Understand that mathematics is used in many occupations or careers. EXAMPLES EX Describe specific examples of mathematics associated with a given career. EX Explain the mathematical requirements to enter a given career. EX Explain the mathematics used by workers in a specific job.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 1: The student understands and applies the concepts and procedures of mathematics.	
Component 1.1 Understand and apply concepts and procedures from number sense.	
<i>Number and numeration</i>	
<p>1.1.1 Understand and use scientific notation. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain the meaning of scientific notation using words, pictures, symbols, or numbers. EX Express and/or use equivalents among fractions, decimals, percents, integers, positive integer exponents, square roots, and/or numbers written in scientific notation. EX Read and translate numbers represented in scientific notation from calculators and other technology, texts, tables, and charts. EX Use scientific notation in a given situation. 	
<p>1.1.2 <i>Maintain skills</i></p>	
<p>1.1.3 <i>Maintain skills</i></p>	
<p>1.1.4 Understand the concept of inverse proportion and apply direct and inverse proportion. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain, illustrate, or describe examples of inverse proportion. EX Determine whether a real-world problem involves direct or inverse proportion. EX Use direct or inverse proportion to determine an unknown number of objects or an unknown value in a given situation. 	SE: pp. 24–27, 28–31, 72–75

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Computation	
<p>1.1.5 Compute using scientific notation. EXAMPLES EX Compute using scientific notation. EX Use scientific notation to simplify a calculation.</p>	
<p>1.1.6 Complete multi-step computations with combinations of rational numbers using order of operations and addition, subtraction, multiplication, division, powers, and square roots. EXAMPLES EX Calculate using order of operations on rational numbers. EX Use properties to reorder and rearrange expressions to compute more efficiently. EX Apply strategies to complete multi-step computations fluently.</p>	SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 36–39, 60–63, 64–67, 68–71, 72–75, 76–79
<p>1.1.7 <i>Maintain skills</i></p>	
Estimation	
<p>1.1.8 Apply estimation strategies in situations involving multi-step computations of rational numbers using addition, subtraction, multiplication, division, powers, and square roots to predict or determine reasonableness of answers. EXAMPLES EX Select, explain, and justify situations involving rational numbers where estimates are sufficient and others for which an exact value is required. EX Use a variety of estimation strategies to predict or to verify the reasonableness of calculated results. EX Describe a strategy used for estimation using multi-step computations.</p>	SE: pp. 12–15, 24–27, 36–39

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.2 Understand and apply concepts and procedures from measurement.	
<i>Attributes, units, and systems</i>	
<p>1.2.1 Understand the relationship between change in one or two linear dimension(s) and corresponding change in perimeter, area, surface area, and volume.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine and/or describe the impact of a change in two linear dimensions on perimeter, area, surface area, and/or volume.</p> <p>EX Describe how changes in one or more linear dimensions affect perimeter, area, and/or volume in real world situations.</p> <p>EX Determine the change in one or more linear dimensions given a change in perimeter, area, surface area, and/or volume.</p>	
<p>1.2.2</p> <p style="text-align: center;"><i>Maintain skills</i></p>	
<p>1.2.3 Apply unit conversions within measurement systems, U.S. or metric, to maintain an appropriate level of precision.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Convert within a system while maintaining the same level of precision.</p> <p>EX Use procedures to convert derived units of measure.</p> <p>EX Explain why different situations require different levels of precision.</p>	
<i>Procedures and estimation</i>	
<p>1.2.4</p> <p style="text-align: center;"><i>Maintain skills</i></p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.2.5 Use formulas to determine measurements related to right prisms, cylinders, cones, or pyramids.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Use formulas to determine and label the volume of a compound figure.</p> <p>EX Use formulas to determine and label the surface area of a compound figure.</p>	
<p>1.2.6 Understand and apply estimation strategies to obtain reasonable measurements at an appropriate level of precision.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine when approximate measurements are sufficient and estimate a reasonable measurement at an appropriate level of precision.</p> <p>EX Estimate quantities using derived units of measure.</p> <p>EX Estimate derived units of measure.</p> <p>EX Select and use a procedure to find a reasonable estimate for and label the volumes of prisms and cylinders.</p> <p>EX Estimate conversions between yards and meters and quarts and liters.</p> <p>EX Describe a procedure that would be an appropriate way to estimate a measurement.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.3 Understand and apply concepts and procedures from geometric sense.	
<i>Properties and relationships</i>	
<p>1.3.1 Understand the properties of and the relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Make and test conjectures about 2-dimensional and 3-dimensional shapes and their individual attributes and relationships using physical, symbolic, and technological models.</p> <p>EX Use the relationship between similar figures to determine the scale factor.</p> <p>EX Match or draw a 3-dimensional figure that could be formed by folding a given net.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.3.2 Use the properties of and relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures including prisms, cylinders, cones, and pyramids.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Match or draw 3-dimensional objects from different views using the same properties and relationships.</p> <p>EX Sort, classify, and label prisms, cylinders, cones, and pyramids.</p> <p>EX Sort, classify, and label 2-dimensional and 3-dimensional shapes according to characteristics including faces, edges, and vertices, using actual and virtual modeling.</p> <p>EX Construct geometric figures, including angle bisectors, perpendicular bisectors, and triangles given specific characteristic, using a variety of tools and technologies.</p> <p>EX Given a set of characteristics, draw a plane figure and justifies the drawing.</p> <p>EX Create a three-dimensional scale drawing with particular geometric properties.</p> <p>EX Use properties of triangles and special right triangles in situations.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<i>Locations and transformations</i>	
<p>1.3.3 Use geometric properties to determine and plot points on a coordinate grid.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine geometric properties of two-dimensional objects using coordinates on a grid.</p> <p>EX Determine the location of a set of points that satisfy given conditions.</p> <p>EX Represent real life situations on a coordinate grid or describes the location of a point that satisfies given conditions.</p> <p>EX Use tools and technology to draw objects on a coordinate grid based on given properties.</p> <p>EX Write ordered pairs to describe the locations of points or objects on a coordinate grid.</p>	<p>SE: pp. 20–23, 24–27, 28–31, 40–43, 44–47, 48–51, 56–59, 64–67, 68–71</p>
<p>1.3.4 Apply multiple transformations – translations, reflections, and/or rotations to 2-dimensional figures. Apply single dilations to 2-dimensional figures.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Use multiple translations, reflections, and/or rotations to create congruent figures on a coordinate grid.</p> <p>EX Use dilation of a given figure to form a similar figure.</p> <p>EX Determine the final coordinates of a point after multiple transformations.</p> <p>EX Describe a combination of two translations, reflections, and/or rotations to transform one figure to another figure with or without a coordinate grid.</p> <p>EX Determine rotational symmetry of a figure.</p> <p>EX Use technology to create 2- and 3-dimensional animations using combinations of transformations.</p>	

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 1.4 Understand and apply concepts and procedures from probability and statistics.	
<i>Probability</i>	
<p>1.4.1 Understand the concepts of dependent and independent events.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Describe whether the outcome of a first event affects the probability of a later event.</p> <p>EX Describe the difference between dependent and independent events.</p> <p>EX Describe the relationship between theoretical probability and empirical frequency of dependent events using simulations with and without technology.</p>	
<p>1.4.2 Use procedures to compute the probability of dependent and independent events.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine the sample space for independent or dependent events.</p> <p>EX Determine probabilities of dependent and independent events.</p> <p>EX Determine the outcomes and probability of multiple independent or dependent events.</p> <p>EX Modify or revise a simple game based on independent probabilities so that all players have an equal probability of winning.</p> <p>EX Create a simple game based on conditional probabilities.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>Statistics</p>	
<p>1.4.3 Determine possible sources of bias in questions, data collection methods, samples, and/or measures of central tendency and describe how such bias can be controlled. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine whether claims made about results are based on biased data due to sampling. EX Collect data using appropriate questions, samples, and/or methods to control for bias. EX Examine sources of bias in data collection questions, samples, and/or methods and describe how such bias can be controlled. EX Examine methods and technology used to investigate a research question. EX Determine how data collection methods impact the accuracy of the results. 	
<p>1.4.4</p> <p style="text-align: center;"><i>Maintain skills</i></p>	
<p>1.4.5 Use bivariate data in tables and displays to predict mathematical relationships. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine whether the underlying model for a set of data is linear. EX Determine whether an equation for a line is appropriate for a given set of data and supports the judgment with data. EX Match an equation with a set of data or a graphic display. EX Identify trends in a set of data in order to make a prediction based on the information. EX Determine whether a prediction is reasonable based on the given data or graph. 	<p>SE: pp. 20–23, 24–27, 40–43, 44–47, 49–51, 56–59</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.4.6 Determine and explain how the same set of data can support different points of view. EXAMPLES</p> <ul style="list-style-type: none"> EX Explain how the same set of data can support different points of view. EX Explain, using data, how statistics have been used or misused to support a point of view or argument. EX Use statistics to support different points of view. EX Use a set of statistics to develop a logical point of view. 	
<p>Component 1.5 Understand and apply concepts and procedures from algebraic sense.</p>	
<p><i>Patterns and functions</i></p>	
<p>1.5.1 Apply knowledge of patterns or sequences to represent linear functions and/or exponential functions. EXAMPLES</p> <ul style="list-style-type: none"> EX Represent, extend, or create a pattern or sequence between sets of numbers representing a linear function. EX Identify, extend, or create a geometric sequence or pattern. EX Translate among equivalent numerical, graphical, and algebraic forms of a linear function. EX Create a pattern that has the same rule as a given pattern. EX Describe or represent linear and exponential patterns in words or algebraic symbols. 	<p>SE: pp. 28–31, 32–35, 44–47</p>

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.2 Determine an equation or rule for a linear function represented in a pattern, table, graph, or model. EXAMPLES</p> <ul style="list-style-type: none"> EX Determine an equation of a line from a set of ordered pairs. EX Generate rules for a pattern to make predictions about future events. EX Write an equation or rule to describe a sequence. EX Write an equation for a line given a graph of the line. EX Write a rule for a recursive geometric pattern. EX Write an expression, equation, or inequality with two variables representing a linear and/or non-linear model of a real-world problem. EX Write an equation for a reasonable line to describe a set of bivariate data from a table or scatter plot. 	<p>SE: pp. 40–43, 44–47, 48–51</p>
<p><i>Symbols and notations</i></p>	
<p>1.5.3</p> <p style="text-align: center;"><i>Maintain skills</i></p>	

<p align="center">Mathematics Grade Level Expectations</p>	<p align="center"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>1.5.4 Use variables to write expressions, linear equations and inequalities that represent situations involving rational numbers, whole number powers, and square roots. Uses variables to write non-linear equations.</p> <p align="center">EXAMPLES</p> <p>EX Use variables to write expressions and equations to represent situations that can be described using repeated addition or repeated multiplication.</p> <p>EX Write equations in recursive form for additive or multiplicative models.</p> <p>EX Match an expression or equation to a given real-world situation and explain the meaning of a variable.</p> <p>EX Differentiate between and explain correct vs. incorrect representations of algebraic situations.</p> <p>EX Describe the meaning of a variable in a formula, expression, equation, or inequality.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 68–71, 72–75, 76–79</p>
<p><i>Evaluating and solving</i></p>	
<p>1.5.5 Apply algebraic properties to simplify expressions involving whole number exponents.</p> <p align="center">EXAMPLES</p> <p>EX Write and/or simplify expressions including applying the distributive property.</p> <p>EX Simplify an expression involving exponents.</p> <p>EX Use multiple algebraic properties to simplify expressions.</p> <p>EX Evaluate formulas or expressions that involve squares or cubes.</p>	<p>SE: pp. 4–7, 12–15, 60–63, 64–67, 69–71</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<p>1.5.6 Apply properties to solve multi-step equations and systems of equations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Rearrange formulas to solve for a particular variable.</p> <p>EX Determine the solution to a system of linear equations using tables, graphs, and/or symbols.</p> <p>EX Interpret solutions of systems of equations.</p> <p>EX Solve, or write and solve, multi-step equations.</p> <p>EX Solve, or write and solve, linear inequalities.</p> <p>EX Use systems of equations to determine the optimal solution for a given situation.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 28–31, 32–35, 36–39, 40–43, 44–47, 52–55, 56–59, 68–71, 72–75, 76–79</p>
<p>EALR 2: The student uses mathematics to define and solve problems.</p>	
<p>Component 2.1 Define problems.</p>	
<p>2.1.1 Formulate questions to be answered to solve a problem.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Investigate the situation and determines if there is a problem to solve.</p> <p>EX Define or clarify the question the problem presents.</p> <p>EX Generate questions to be answered in order to solve the problem.</p>	
<p>2.1.2 Determine what information is missing or extraneous.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Determine what needed information is missing.</p> <p>EX Differentiate between necessary and extraneous information.</p>	
<p>2.1.3 Identify what is known and unknown in complex situations.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Examine information to determine what is known and unknown.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 2.2 Construct solutions.	
<p>2.2.1 Select and use relevant information to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use relevant information from the problem.</p> <p>EX Determine whether a given solution shows the use of relevant information.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.2 Apply mathematical concepts and procedures from number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use appropriate concepts and procedures to construct a solution.</p> <p>EX Determine whether a given solution shows use of concepts and procedures that are appropriate.</p>	<p>SE: pp. 4–7, 8–11, 12–15, 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>
<p>2.2.3 Apply a variety of strategies and approaches to construct solutions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Select and use tools to construct a solution.</p> <p>EX Apply a variety of strategies and approaches.</p> <p>EX Determine when an approach is unproductive and modifies or tries a new approach.</p> <p>EX Determine whether a given solution shows the application of strategies that are appropriate.</p>	<p>SE: pp. 16–19, 20–23, 24–27, 28–31, 32–35, 36–39, 40–43, 44–47, 48–51, 52–55, 56–59, 60–63, 64–67, 68–71, 72–75, 76–79</p>

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<p>2.2.4 Determine whether a solution is viable, is mathematically correct, and answers the question(s). EXAMPLES</p> <ul style="list-style-type: none"> EX Check work for mathematical accuracy. EX Determine whether the solution is reasonable for the situation. EX Check the solution with an estimate or results from an alternate approach. EX Check to be certain the solution answers the question. 	SE: pp. 16–19, 36–39
EALR 3: The student uses mathematical reasoning.	
Component 3.1 Analyze information.	
<p>3.1.1 Analyze, compare, and integrate mathematical information from multiple sources. EXAMPLES</p> <ul style="list-style-type: none"> EX Analyze mathematical information or results. EX Integrate information from two or more sources. EX Compare mathematical information in tables, charts, graphs, text, diagrams, figures, or pictorial representations. EX Differentiate between valid and invalid analysis of mathematical information or results. EX Analyze information to make a conjecture. 	SE: pp. 40–43, 44–47, 48–51, 56–59

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
Component 3.2 Conclude.	
<p>3.2.1 Draw and support conclusions, using inductive or deductive reasoning.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Draw a conclusion from a given situation and support the conclusion with appropriate mathematical data or facts.</p> <p>EX Use data or examples as evidence to support or contradict a conclusion or conjecture.</p>	SE: pp. 16–19, 32–35, 36–39, 44–47, 48–51, 72–75
<p>3.2.2 Evaluate procedures and conclusions to make needed revisions.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Check the viability and appropriate use of a selected procedure in a given situation</p> <p>EX Evaluate a conclusion based on given information and/or procedures used and describes a revision as needed.</p>	SE: pp. 36–39
Component 3.3 Verify results.	
<p>3.3.1 Justify results using inductive or deductive reasoning.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Justify results using evidence and information from the problem situation and/or known facts, patterns, relationships, and proportional reasoning.</p>	SE: pp. 8–11, 12–15, 16–19, 36–39, 44–47, 48–51, 72–75
<p>3.3.2 Evaluate reasonableness of results.</p> <p style="text-align: center;">EXAMPLES</p> <p>EX Check for reasonableness of results in a given situation.</p> <p>EX Verify that the solution to a real-world problem makes sense in relation to the situation.</p>	SE: pp. 36–39

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
<p>3.3.3 Validate thinking about mathematical ideas. EXAMPLES EX Justify or refute claims and supporting arguments using data, models, known facts, patterns, relationships, counter examples, and/or proportional reasoning.</p>	
<p>EALR 4. The student communicates knowledge and understanding in both everyday and mathematical language.</p>	
<p>Component 4.1: Gather information.</p>	
<p>4.1.1 Develop, select, and/or apply an efficient system for collecting mathematical information. EXAMPLES EX Determine appropriate mathematical information needed for a specific purpose or audience. EX Develop a plan, not a survey, to collect information, including what mathematical information is needed and where and how to find the information. EX Describe the general procedures, not a survey, to gather exactly the mathematical information sought and no irrelevant information. EX Follow a plan, not a survey, to collect mathematical information for a given audience and purpose.</p>	
<p>4.1.2 Extract mathematical information from multiple sources. EXAMPLES EX Extract and use mathematical information from various sources such as pictures, symbols, text, tables, charts, graphs, diagrams, and models for a purpose. EX Write or identify questions to be answered using data sources such as magazines, newspapers, menus, sales or travel brochures, TV or bus schedules, and/or sales receipts.</p>	

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Component 4.2: Organize, represent, and share information.	
<p>4.2.1 Organize, clarify, and refine mathematical information relevant to a given purpose. EXAMPLES</p> <ul style="list-style-type: none"> EX Select a useful format and organize mathematical information for a given purpose. EX Create an organized list to communicate information to a specific audience and/or for a specific purpose. 	SE: pp. 12–15, 16–19
<p>4.2.2 Represent mathematical information in graphs or other appropriate forms. EXAMPLES</p> <ul style="list-style-type: none"> EX Represent mathematical information using pictures, tables, Venn diagrams, scatter plots, 2- or 3-dimensional drawings, or other appropriate including title, labels, appropriate and consistent scales, and accurate display of data. 	SE: pp. 16–19, 20–23, 40–43, 44–47, 48–51, 56–59, 64–67
<p>4.2.3 Use mathematical language to explain or describe mathematical ideas and information in ways appropriate for audience and purpose. EXAMPLES</p> <ul style="list-style-type: none"> EX Use both everyday and mathematical language and notation to explain, defend, or present mathematical ideas, facts, procedures, or strategies appropriate for a given audience or purpose. 	SE: pp. 8–11, 12–15, 16–19, 28–31, 32–35, 36–39, 60–63, 68–71, 72–75, 76–79

Mathematics Grade Level Expectations	<i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press
EALR 5: The student understands how mathematical ideas connect within mathematics, to other subject areas, and to real-world situations.	
Component 5.1: Relate concepts and procedures within mathematics.	
<p>5.1.1 Apply concepts and procedures from two or more content strands, including number sense, measurement, geometric sense, probability and statistics, and/or algebraic sense, in a given problem or situation. EXAMPLES ex Use concepts and procedures from two or more content strands in a given problem or situation.</p>	
<p>5.1.2 Relate and use different mathematical models and representations of the same situation. EXAMPLES ex Explain or demonstrate how two or more different models represent the same mathematical idea. ex Create a model or representation that is equivalent to a given graphical, numerical, pictorial, geometric, and/or written model or representation. ex Create two or more equivalent models or representations for a given situation.</p>	
Component 5.2: Relate mathematical concepts and procedures to other disciplines.	
<p>5.2.1 Use mathematical patterns and ideas to extend mathematical thinking and modeling to other disciplines. EXAMPLES ex Provide examples of using mathematical thinking, patterns, ideas, and modeling in other disciplines. ex Use mathematical concepts and procedures in other disciplines.</p>	

<p style="text-align: center;">Mathematics Grade Level Expectations</p>	<p style="text-align: center;"><i>Write Math Answers to Open-Ended Questions in Algebra</i> New Readers Press</p>
<p>5.2.2 Describe the contributions of individuals and cultures to the development of mathematics. EXAMPLES EX Describe a mathematical contribution related to current mathematical study. EX Trace the historical development of a mathematical concept.</p>	
<p>Component 5.3: Relate mathematical concepts and procedures to real-world situations.</p>	
<p>5.3.1 Understand that mathematics is used extensively in daily life outside the classroom. EXAMPLES EX Describe situations in which mathematics can be used to solve problems with local, national, or international implications. EX Investigate a local community situation and recommend a solution based on mathematical information.</p>	
<p>5.3.2 Understand that mathematics is used in many occupations or careers. EXAMPLES EX Describe specific examples of mathematics associated with a given career. EX Explain the mathematical requirements to enter a given career. EX Explain the mathematics used by workers in a specific job.</p>	