

A correlation of
**Population Connection
Activities**

from

**Multiplying People, Dividing Resources:
*Global Math Activities***

to

**California State Board of Education
Content Standards**

Organized by:

- 1. Population Connection Activity*
- 2. Subject*
- 3. Grade*
- 4. Standard*

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All in the Family

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Language Arts

Grade 6: Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 6

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.

Grade 7

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- c. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.

Grade 8: Focus on Physical Sciences

9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.
- g. Distinguish between linear and nonlinear relationships on a graph of data.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

- c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

- m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

Every Picture Tells a Story

English Language Development

Grades 6-8

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Mathematics

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.3 Interpret one-and two-variable data graphs to answer questions about a situation.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:

1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 6

Statistics, Data Analysis, and Probability

2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:

2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.

2.3 Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.

Statistics, Data Analysis, and Probability

1.0 Students collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set by hand and through the use of an electronic spreadsheet software program:

1.1 Know various forms of display for data sets, including a stem-and-leaf plot or box-and-whisker plot; use the forms to display a single set of data or to compare two sets of data.

1.2 Represent two numerical variables on a scatterplot and informally describe how the data points are distributed and any apparent relationship that exists between the two variables (e.g., between time spent on homework and grade level).

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.
- h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

- 7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - b. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.
 - c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

Grade 7: Focus on Life Sciences

- 7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grade 8: Focus on Physical Sciences

- 9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.
 - g. Distinguish between linear and nonlinear relationships on a graph of data.

Grades 9-12: Investigation and Experimentation

- 1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
 - m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

Everything Counts

English Language Development

Grades 3-5

Beginning ELD Level: Listening and Speaking: Comprehension

Answer simple questions with one- to two-word responses.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple one-step directions for classroom activities.

Early Intermediate ELD Level: Reading: Comprehension

Understand and follow simple two-step directions for classroom activities.

Intermediate ELD Level: Reading: Comprehension and Analysis of Grade Level-Appropriate Text

Understand and follow some multiple-step directions for classroom-related activities.

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Language Arts

Grade 3

Reading

2.0. Reading Comprehension: Students read and understand grade-level-appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, by grade four, students read one-half million words annually, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade three, students make substantial progress toward this goal.

Comprehension and Analysis of Grade-Level-Appropriate Text

2.7. Follow simple multiple-step written instructions (e.g., how to assemble a product or play a board game).

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication.

They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.3. Respond to questions with appropriate elaboration.

Grade 4

Written and Oral English Language Conventions

1.0. Written and Oral English Language Conventions: Students write and speak with a command of standard English conventions appropriate to this grade level.

Sentence Structure

1.1. Use simple and compound sentences in writing and speaking.

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.1. Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings.

Mathematics

Grade 3

Number Sense

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.1 Find the sum or difference of two whole numbers between 0 and 10,000.

Grade 4

Algebra and Functions

1.0 Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences:

1.1 Use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate an understanding and the use of the concept of a variable).

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.

Grade 6

Number Sense

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Statistics, Data Analysis, and Probability

2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:

2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.

2.2 Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population.

2.4 Identify data that represent sampling errors and explain why the sample (and the display) might be biased.

2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Formulate and justify predictions based on cause-and-effect relationships.

e. Construct and interpret graphs from measurements.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

d. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.

e. Communicate the steps and results from an investigation in written reports and oral presentations.

Global Warming Begins at Home

English Language Development

Grades 6-8

Early Intermediate ELD Level: Listening and Speaking: Comprehension and Organization and Delivery of Oral Communication

Prepare and deliver short oral presentations.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grade 11

11.5 Students analyze the major political, social, economic, technological, and cultural developments of the 1920s.

7. Discuss the rise of mass production techniques, the growth of cities, the impact of new technologies (e.g., the automobile, electricity), and the resulting prosperity and effect on the American landscape.

Mathematics

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

6. Resources. Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept:

a. Students know the utility of energy sources is determined by factors that are involved in converting these sources to useful forms and the consequences of the conversion process.

b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

d. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

e. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 8: Focus on Physical Sciences

5. Reactions. Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a basis for understanding this concept:

a. Students know reactant atoms and molecules interact to form products with different chemical properties.

Grades 9-12: Chemistry

2. Chemical Bonds. Biological, chemical, and physical properties of matter result from the ability of atoms to form bonds from electrostatic forces between electrons and protons and between atoms and molecules. As a basis for understanding this concept:

b. Students know chemical bonds between atoms in molecules such as H₂, CH₄, NH₃, H₂CCH₂, N₂, Cl₂, and many large biological molecules are covalent.

3. Conservation of Matter and Stoichiometry. The conservation of atoms in chemical reactions leads to the principle of conservation of matter and the ability to calculate the mass of products and reactants. As a basis for understanding this concept:

a. Students know how to describe chemical reactions by writing balanced equations.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

d. Formulate explanations by using logic and evidence.

l. Analyze situations and solve problems that require combining and applying concepts from more than one area of science.

m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

How Much Space Do We Need?

English Language Development

Grades 6-8

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Mathematics

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Measurement and Geometry

1.0 Students understand and compute the volumes and areas of simple objects:

1.3 Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter [cm³], cubic meter [m³], cubic inch [in³], cubic yard [yd³]) to compute the volume of rectangular solids.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

5. Ecology (Life Sciences). Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:

e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

d. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

e. Communicate the steps and results from an investigation in written reports and oral presentations.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

l. Analyze situations and solve problems that require combining and applying concepts from more than one area of science.

m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

Measuring a Million

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 3

Measurement and Geometry

1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

1.1 Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.

Grade 4

Number Sense

1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:

1.1 Read and write whole numbers in the millions.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Measurement and Geometry

1.0 Students understand and compute the volumes and areas of simple objects:

1.3 Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter [cm³], cubic meter [m³], cubic inch [in³], cubic yard [yd³]) to compute the volume of rectangular solids.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:

2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches).

3.0 Students investigate geometric patterns and describe them algebraically:

3.1 Use variables in expressions describing geometric quantities (e.g., $P = 2w + 2l$, $A = 1/2bh$, $C = \pi d$ - the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).

3.2 Express in symbolic form simple relationships arising from geometry.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).

2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Grades 8-12: Geometry

8.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.

Science

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

b. Measure and estimate the weight, length, or volume of objects.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

f. Select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

b. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

d. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

a. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

e. Communicate the steps and results from an investigation in written reports and oral presentations.

On the Double

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 4

Number Sense

1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:

1.1 Read and write whole numbers in the millions.

1.2 Order and compare whole numbers and decimals to two decimal places.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

The Pop Ecology Files

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.3 Interpret one-and two-variable data graphs to answer questions about a situation.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 7

Number Sense

1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:

1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.

Statistics, Data Analysis, and Probability

1.0 Students collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set by hand and through the use of an electronic spreadsheet software program:

1.1 Know various forms of display for data sets, including a stem-and-leaf plot or box-and-whisker plot; use the forms to display a single set of data or to compare two sets of data.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
- c. Formulate and justify predictions based on cause-and-effect relationships.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
- g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.
 - h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
- c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

Grade 8: Focus on Physical Sciences

9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
- e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.
 - g. Distinguish between linear and nonlinear relationships on a graph of data.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:
 - b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
 - d. Formulate explanations by using logic and evidence.
 - l. Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
 - m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

Population Clock

English Language Development

Grades 6-8

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Mathematics

Grade 4

Number Sense

1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:

1.1 Read and write whole numbers in the millions.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Mathematical Reasoning

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

Power of the Pyramids

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grade 10

10.10 Students analyze instances of nation-building in the contemporary world in at least two of the following regions or countries: the Middle East, Africa, Mexico and other parts of Latin America, and China.

1. Understand the challenges in the regions, including their geopolitical, cultural, military, and economic significance and the international relationships in which they are involved.

2. Describe the recent history of the regions, including political divisions and systems, key leaders, religious issues, natural features, resources, and population patterns.

Grade 11

11.8 Students analyze the economic boom and social transformation of post-World War II America.

7. Describe the effects on society and the economy of technological developments since 1945, including the computer revolution, changes in communication, advances in medicine, and improvements in agricultural technology.

Grades 9 - 12

Chronological and Spatial Thinking

1. Students compare the present with the past, evaluating the consequences of past events and decisions and determining the lessons that were learned.

2. Students analyze how change happens at different rates at different times; understand that some aspects can change while others remain the same; and understand that change is complicated and affects not only technology and politics but also values and beliefs.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 4

Number Sense

1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:

1.1 Read and write whole numbers in the millions.

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.3 Interpret one-and two-variable data graphs to answer questions about a situation.

Grade 5

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:

1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.

1.3 Use fractions and percentages to compare data sets of different sizes.

Grade 6

Number Sense

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Statistics, Data Analysis, and Probability

2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:

2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Formulate and justify predictions based on cause-and-effect relationships.

e. Construct and interpret graphs from measurements.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

Grade 8: Focus on Physical Sciences

9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.

d. Formulate explanations by using logic and evidence.

m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

The Stork and the Grim Reaper

English Language Development

Grades 3-5

Beginning ELD Level: Listening and Speaking: Comprehension
Answer simple questions with one- to two-word responses.

Beginning ELD Level: Reading: Comprehension
Understand and follow simple one-step directions for classroom activities.

Early Intermediate ELD Level: Reading: Comprehension
Understand and follow simple two-step directions for classroom activities.

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension
Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension
Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension
Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grades K - 5

Historical Interpretation

2. Students identify the human and physical characteristics of the places they are studying and explain how those features form the unique character of those places.

Language Arts

Grade 3

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication.
They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.3. Respond to questions with appropriate elaboration.

Grade 4

Written and Oral English Language Conventions

1.0. Written and Oral English Language Conventions: Students write and speak with a command of standard English conventions appropriate to this grade level.

Sentence Structure

1.1. Use simple and compound sentences in writing and speaking.

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication.
They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

- 1.1. Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings.

Grade 6

Listening and Speaking

- 1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

- 1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Kindergarten

Statistics, Data Analysis, and Probability

- 1.0 Students collect information about objects and events in their environment:

- 1.1 Pose information questions; collect data; and record the results using objects, pictures, and picture graphs.

Mathematical Reasoning

- 1.0 Students make decisions about how to set up a problem:

- 1.2 Use tools and strategies, such as manipulatives or sketches, to model problems.

Grade 1

Mathematical Reasoning

- 1.0 Students make decisions about how to set up a problem:

- 1.2 Use tools and strategies, such as manipulatives or sketches, to model problems.

Grade 2

Number Sense

- 4.0 Students understand that fractions and decimals may refer to parts of a set and parts of a whole:

- 4.1 Recognize, name, and compare unit fractions from $\frac{1}{12}$ to $\frac{1}{2}$.

- 4.2 Recognize fractions of a whole and parts of a group (e.g., one-fourth of a pie, two-thirds of 15 balls).

Mathematical Reasoning

- 1.0 Students make decisions about how to set up a problem:

- 1.2 Use tools, such as manipulatives or sketches, to model problems.

Grade 3

Measurement and Geometry

- 1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

- 1.1 Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.

Mathematical Reasoning

- 2.0 Students use strategies, skills, and concepts in finding solutions:

- 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 4

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 2

4. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

a. Make predictions based on observed patterns and not random guessing.

g. Follow oral instructions for a scientific investigation.

Grade 3

3. Life Sciences. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:

c. Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.

5. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Use numerical data in describing and comparing objects, events, and measurements.

d. Predict the outcome of a simple investigation and compare the result with the prediction.

e. Collect data in an investigation and analyze those data to develop a logical conclusion.

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Formulate and justify predictions based on cause-and-effect relationships.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

f. Select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

5. Ecology (Life Sciences). Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:
 - e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.
7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - b. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:
 - c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.
 - e. Students know a vital part of an ecosystem is the stability of its producers and decomposers.

Timber!

English Language Development

Grades 3-5

Beginning ELD Level: Listening and Speaking: Comprehension

Answer simple questions with one- to two-word responses.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple one-step directions for classroom activities.

Early Intermediate ELD Level: Reading: Comprehension

Understand and follow simple two-step directions for classroom activities.

Intermediate ELD Level: Reading: Comprehension and Analysis of Grade Level-Appropriate Text

Understand and follow some multiple-step directions for classroom-related activities.

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grade 3

3.4 Students understand the role of rules and laws in our daily lives and the basic structure of the U.S. government.

2. Discuss the importance of public virtue and the role of citizens, including how to participate in a classroom, in the community, and in civic life.

3.5 Students demonstrate basic economic reasoning skills and an understanding of the economy of the local region.

1. Describe the ways in which local producers have used and are using natural resources, human resources, and capital resources to produce goods and services in the past and the present.

Grade 8

8.6 Students analyze the divergent paths of the American people from 1800 to the mid-1800s and the challenges they faced, with emphasis on the Northeast.

1. Discuss the influence of industrialization and technological developments on the region, including human modification of the landscape and how physical geography shaped human actions (e.g., growth of cities, deforestation, farming, mineral extraction).

Language Arts

Grade 3

Reading

2.0. Reading Comprehension: Students read and understand grade-level-appropriate material. They draw upon a variety of comprehension strategies as needed (e.g., generating and responding to essential questions, making predictions, comparing information from several sources). The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight illustrate the quality and complexity of the materials to be read by students. In addition to their regular school reading, by grade four, students read one-half million words annually, including a good representation of grade-level-appropriate narrative and expository text (e.g., classic and contemporary literature, magazines, newspapers, online information). In grade three, students make substantial progress toward this goal.

Comprehension and Analysis of Grade-Level-Appropriate Text

2.7. Follow simple multiple-step written instructions (e.g., how to assemble a product or play a board game).

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.3. Respond to questions with appropriate elaboration.

Grade 4

Written and Oral English Language Conventions

1.0. Written and Oral English Language Conventions: Students write and speak with a command of standard English conventions appropriate to this grade level.

Sentence Structure

1.1. Use simple and compound sentences in writing and speaking.

Listening and Speaking

1.0. Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.

Comprehension

1.1. Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings.

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 2

Mathematical Reasoning

1.0 Students make decisions about how to set up a problem:

1.2 Use tools, such as manipulatives or sketches, to model problems.

Grade 3

Number Sense

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.1 Find the sum or difference of two whole numbers between 0 and 10,000.

Algebra and Functions

2.0 Students represent simple functional relationships:

2.2 Extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 4

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 2

3. Earth Sciences. Earth is made of materials that have distinct properties and provide resources for human activities. As a basis for understanding this concept:

e. Students know rock, water, plants, and soil provide many resources, including food, fuel, and building materials, that humans use.

4. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

a. Make predictions based on observed patterns and not random guessing.

g. Follow oral instructions for a scientific investigation.

Grade 3

3. Life Sciences. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:

c. Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.

5. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- c. Use numerical data in describing and comparing objects, events, and measurements.
- d. Predict the outcome of a simple investigation and compare the result with the prediction.
- e. Collect data in an investigation and analyze those data to develop a logical conclusion.

Grade 4

3. Life Sciences. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:

c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- c. Formulate and justify predictions based on cause-and-effect relationships.
- f. Follow a set of written instructions for a scientific investigation.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.
- h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

5. Ecology (Life Sciences). Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:

e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

6. Resources. Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept:

b. Students know different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

b. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

- c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- a. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grade 8: Focus on Physical Sciences

9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.
- g. Distinguish between linear and nonlinear relationships on a graph of data.

Transportation Tally

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grade 10

10.3 Students analyze the effects of the Industrial Revolution in England, France, Germany, Japan, and the United States.

2. Examine how scientific and technological changes and new forms of energy brought about massive social, economic, and cultural change (e.g., the inventions and discoveries of James Watt, Eli Whitney, Henry Bessemer, Louis Pasteur, Thomas Edison).

Grade 11

11.5 Students analyze the major political, social, economic, technological, and cultural developments of the 1920s.

7. Discuss the rise of mass production techniques, the growth of cities, the impact of new technologies (e.g., the automobile, electricity), and the resulting prosperity and effect on the American landscape.

11.8 Students analyze the economic boom and social transformation of post-World War II America.

7. Describe the effects on society and the economy of technological developments since 1945, including the computer revolution, changes in communication, advances in medicine, and improvements in agricultural technology.

Grades 9 - 12

Chronological and Spatial Thinking

1. Students compare the present with the past, evaluating the consequences of past events and decisions and determining the lessons that were learned.

2. Students analyze how change happens at different rates at different times; understand that some aspects can change while others remain the same; and understand that change is complicated and affects not only technology and politics but also values and beliefs.

4. Students relate current events to the physical and human characteristics of places and regions.

Historical Interpretation

5. Students analyze human modifications of landscapes and examine the resulting environmental policy issues.

Mathematics

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Number Sense

1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:

1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).

2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations.

Algebra and Functions

1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:

1.1 Write and solve one-step linear equations in one variable.

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).

Measurement and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Science

Grade 6: Focus on Earth Sciences

6. Resources. Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept:

a. Students know the utility of energy sources is determined by factors that are involved in converting these sources to useful forms and the consequences of the conversion process.

What Do You Think?

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Intermediate ELD Level: Listening and Speaking: Comprehension and Organization and Delivery of Oral Communication

Participate in social conversations with peers and adults on familiar topics by asking and answering questions and soliciting information.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Beginning ELD Level: Writing: Penmanship and Organization and Focus

Organize and record information from selected literature and content areas by displaying it on pictures, lists, charts, and tables.

History and Social Science

Grade 11

11.11 Students analyze the major social problems and domestic policy issues in contemporary American society.

5. Trace the impact of, need for, and controversies associated with environmental conservation, expansion of the national park system, and the development of environmental protection laws, with particular attention to the interaction between environmental protection advocates and property rights advocates.

Grade 12

Principles of American Democracy

12.2 Students evaluate and take and defend positions on the scope and limits of rights and obligations as democratic citizens, the relationships among them, and how they are secured.

5. Describe the reciprocity between rights and obligations; that is, why enjoyment of one's rights entails respect for the rights of others.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Grades 9-10

Listening and Speaking

2.0 Speaking Applications (Genres and Their Characteristics)

Students deliver polished formal and extemporaneous presentations that combine the traditional rhetorical strategies of narration, exposition, persuasion, and description. Student speaking demonstrates a command of standard American English and the organizational and delivery strategies outlined in Listening and Speaking Standard 1.0.

2.3 Apply appropriate interviewing techniques:

a. Prepare and ask relevant questions.

b. Make notes of responses.

f. Compile and report responses.

Mathematics

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.1 Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.

Grade 5

Algebra and Functions

1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:

1.1 Use information taken from a graph or equation to answer questions about a problem situation.

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:

1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

Grade 6

Statistics, Data Analysis, and Probability

1.0 Students compute and analyze statistical measurements for data sets:

1.1 Compute the range, mean, median, and mode of data sets.

1.2 Understand how additional data added to data sets may affect these computations of measures of central tendency.

2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:

2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.

2.3 Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.

2.4 Identify data that represent sampling errors and explain why the sample (and the display) might be biased.

2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 7

Algebra and Functions

1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs:

1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.

Statistics, Data Analysis, and Probability

1.0 Students collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set by hand and through the use of an electronic spreadsheet software program:

1.1 Know various forms of display for data sets, including a stem-and-leaf plot or box-and-whisker plot; use the forms to display a single set of data or to compare two sets of data.

1.3 Understand the meaning of, and be able to compute, the minimum, the lower quartile, the median, the upper quartile, and the maximum of a data set.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Probability and Statistics

6.0 Students know the definitions of the mean, median, and mode of a distribution of data and can compute each in particular situations.

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 4

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

e. Construct and interpret graphs from measurements.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

b. Develop a testable question.

c. Plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure.

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

a. Develop a hypothesis.

c. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.

d. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.

- e. Communicate the steps and results from an investigation in written reports and oral presentations.

Grade 8: Focus on Physical Sciences

9. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

- a. Plan and conduct a scientific investigation to test a hypothesis.
- e. Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

- a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.

A World of Difference

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

Grades 9-12

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grade 10

10.10 Students analyze instances of nation-building in the contemporary world in at least two of the following regions or countries: the Middle East, Africa, Mexico and other parts of Latin America, and China.

1. Understand the challenges in the regions, including their geopolitical, cultural, military, and economic significance and the international relationships in which they are involved.

2. Describe the recent history of the regions, including political divisions and systems, key leaders, religious issues, natural features, resources, and population patterns.

Grade 12

Principles of Economics

12.1 Students understand common economic terms and concepts and economic reasoning.

1. Examine the causal relationship between scarcity and the need for choices.

Grades 9 - 12

Historical Interpretation

5. Students analyze human modifications of landscapes and examine the resulting environmental policy issues.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.1 Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.

2.0 Students make predictions for simple probability situations:

2.2 Express outcomes of experimental probability situations verbally and numerically (e.g., 3 out of 4; $\frac{3}{4}$).

Grade 5

Number Sense

2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:

2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:

1.3 Use fractions and percentages to compare data sets of different sizes.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

3.0 Students move beyond a particular problem by generalizing to other situations:

3.3 Develop generalizations of the results obtained and apply them in other circumstances.

Grade 6

Statistics, Data Analysis, and Probability

2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:

2.5 Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims.

3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:

3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.7 Make precise calculations and check the validity of the results from the context of the problem.

Grade 7

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.

2.0 Students use strategies, skills, and concepts in finding solutions:

2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

2.8 Make precise calculations and check the validity of the results from the context of the problem.

Grades 8-12: Algebra II

19.0 Students use combinations and permutations to compute probabilities.

Grades 8-12: Probability and Statistics

1.0 Students know the definition of the notion of independent events and can use the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.

Grades 8-12: Advanced Placement Probability and Statistics

1.0 Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.

Science

Grade 4

3. Life Sciences. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:

b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Formulate and justify predictions based on cause-and-effect relationships.

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Grade 6: Focus on Earth Sciences

5. Ecology (Life Sciences). Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:

e. Students know the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.

Grade 7: Focus on Life Sciences

7. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

c. Communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence.

Grades 9-12: Biology/Life Sciences

6. Ecology. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

a. Students know biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.

b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

World Real Estate

English Language Development

Grades 6-8

Beginning ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using simple sentences or phrases.

Early Intermediate ELD Level: Listening and Speaking: Comprehension

Ask and answer questions by using phrases or simple sentences.

Beginning ELD Level: Reading: Comprehension

Understand and follow simple multiple-step oral directions for classroom or work-related activities.

History and Social Science

Grades 9 - 12

Chronological and Spatial Thinking

3. Students use a variety of maps and documents to interpret human movement, including major patterns of domestic and international migration, changing environmental preferences and settlement patterns, the frictions that develop between population groups, and the diffusion of ideas, technological innovations, and goods.

Language Arts

Grade 6

Listening and Speaking

1.0. Listening and Speaking Strategies: Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Comprehension

1.3. Restate and execute multiple-step oral instructions and directions.

Mathematics

Grade 4

Statistics, Data Analysis, and Probability

1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

1.3 Interpret one-and two-variable data graphs to answer questions about a situation.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grade 5

Statistics, Data Analysis, and Probability

1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:

1.2 Organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.

Mathematical Reasoning

2.0 Students use strategies, skills, and concepts in finding solutions:

2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.

Grades 8-12: Algebra I

15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Grades 8-12: Probability and Statistics

8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Grades 8-12: Advanced Placement Probability and Statistics

14.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line graphs and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

Science

Grade 5

6. Investigation and Experimentation. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

g. Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

Grades 9-12: Investigation and Experimentation

1. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:

m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.