

5. Each student can recall, select, apply, and analyze knowledge of major individuals and events of the Civil War, the end of slavery, and Reconstruction.
6. Each student can recall, select, apply, and analyze knowledge of post-Civil War industrialization.
7. Each student can recall, select, apply, and analyze knowledge of the migration to the American west and the relations of migrating people to indigenous people.
8. Each student can recall, select, apply, and analyze knowledge of the response of national reform movements—Populists, Progressives, Grangers, American Federation of Labor, Knights of Labor, etc.—as a response to rapid American urban and economic growth.
9. Each student can recall, select, apply, and analyze knowledge of the emergence of the United States as a world power in the Spanish-American War and two World Wars.
10. Each student can recall, select, apply, and analyze knowledge of major individuals and events that influenced American character and lifestyle during the Twenties and the Great Depression.
11. Each student can recall, select, apply, and analyze knowledge of the major events of the Cold War between the United States and the Soviet Union.
12. Each student can recall, select, apply, and analyze knowledge of the expansion of civil rights in the 19th and 20th centuries.

***G. Performance Statement* Each student can understand complex events and issues in world history from the perspectives of people past and present, and can recall, select, apply, and analyze relevant and accurate historical knowledge.**

Standards:

1. Each student can recall, select, apply, and analyze knowledge of major landmarks in early human evolution from the paleontological evidence of Olduvai Gorge through the hunting and gathering of the Upper Paleolithic.
2. Each student can recall, select, apply, and analyze knowledge of the Neolithic Revolution which produced agricultural surpluses and cities in the Tigris, Euphrates, Indus, Ganges, and Yellow river valleys.
3. Each student can recall, select, apply, and analyze knowledge of the political and cultural legacies of ancient Greece and Rome.

4. Each student can recall, select, apply, and analyze knowledge of various encounters of the three major religions—Judaism, Christianity, and Islam—in the Middle East.
5. Each student can recall, select, apply, and analyze knowledge of the development of the social and political systems of dynastic India and China.
6. Each student can recall, select, apply, and analyze knowledge of feudal society and its institutions in Europe, China, Japan, Africa, and the Americas.
7. Each student can recall, select, apply, and analyze knowledge of the challenges to and modifications of medieval society during Renaissance and Reformation.
8. Each student can recall, select, apply, and analyze knowledge of the culture and ideas of the Enlightenment, especially the Scientific Revolution of the Seventeenth Century and the intellectual revolutions of the Eighteenth.
9. Each student can recall, select, apply, and analyze knowledge of European absolutism and the challenges of constitutionalism in England's Interregnum and Glorious Revolution, the French revolution, and the Napoleonic era.
10. Each student can recall, select, apply, and analyze knowledge of regional empires—such as, Ottoman, Mogul, Aztecs, and Sonhai—and their relations with European states.
11. Each student can recall, select, apply, and analyze knowledge about the Industrial Revolution and its effects around the world.
12. Each student can recall, select, apply, and analyze knowledge of the Nineteenth century "Europeanization" of the globe, especially in Africa and Asia.
13. Each student can recall, select, apply, and analyze knowledge of the effects of two World Wars and the Russian Revolution on European and world order.
14. Each student can recall, select, apply, and analyze knowledge of the emergence as independent nations of former colonies, satellite countries, and dominated regions and the concomitant rise of ethnicity, nationalism, and democracy.

**Science Standards
Primary Level**

A. Performance Statement: Each student can solve problems and investigate questions using scientific methods and tools, and revise personal understanding to accommodate new knowledge.

Standards:

1. Each student, working alone and in groups, can conduct investigations by observation, collect specimens, measure and manipulate objects and materials, and offer explanations for his or her findings.
2. Each student understands the scientific enterprise as being collaborative, inquisitive, persistent, and inventive and is in constant search of evidence to support claims.
3. Each student can make predictions based on previously conducted investigations and explain why they do or do not occur when the investigations are repeated.
4. Each student can safely and properly use simple tools of measurement (such as rulers, thermometers, barometers, balances) and other common scientific instruments (such as microscopes, telescopes, and hand lenses).
5. Each student can use the computer to record and graph data, as well as to gain knowledge through the use of simulations and other interactive software.
6. Each student can properly care for and handle living organisms.

B. Performance Statement: Each student shows an emerging understanding in the basic principles of life sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student can distinguish between plants and animals; create classifications for organisms according to various characteristics (such as appearance, behavior, and habitat) and justify those classifications.
2. Each student can show an understanding that living organisms need food, water, air, space and an environment in which they can live.
3. Each student can give examples of characteristics to show how particular organisms are suited for their environments.

4. Each student can show a basic understanding that organisms are comprised of cells and can describe simple cell structures or single-celled organisms as seen through a microscope.
5. Each student can describe interactions between organisms—particularly the food chain—in a given environment and understand that almost all food can be traced back to plants.
6. Each student can explain the effect of biotic and abiotic aspects of a given environment on the ability of individual organisms to survive.
7. Each student can demonstrate an understanding of fossils and observe differences and similarities to existing organisms. Each student can describe ways scientists use fossils to reconstruct extinct organisms, particularly dinosaurs, and can form hypotheses about their living habits and characteristics.
8. Each student can demonstrate a basic understanding of heredity and change from generation to generation and over the planet's history by examining various living and fossil plants and animals.

C. Performance Statement: Each student can show an emerging understanding in the basic principles of physical sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student can describe and classify materials according to different properties (e.g., hardness, buoyancy, response to magnets, and solubility) and describe changes that can be observed (e.g., changes in the state of water).
2. Each student can show a basic understanding of energy in light and heat particularly as generated by the sun, understand that heat transfers from warmer objects to cooler, show that some materials conduct heat better than others, and explain how electric power can be conserved and why it should be.
3. Each student can describe motion and its reaction to force based on observation, understand the connection between vibration and sound, and understand that movement can be either extremely slow or extremely fast to the point of being imperceptible to the human eye.

D. Performance Statement: Each student can show an emerging understanding in the basic principles of earth-space sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student can demonstrate through models an understanding of the relationship, between the moon and the earth (e.g., the perceived position of the moon in the sky), the planets and the sun (e.g., the immensity of distances), the solar system and the rest of the universe (e.g., the relationship of distance and perceived size).
2. Each student can show the conversion of water from liquid to a solid, to a gas, back again, and understand how this relates to clouds, fog, and precipitation.
3. Each student can demonstrate an understanding of the earth's gravity and describe atmosphere and the movement of air as manifested in wind.
4. Each student can explain the changes of the seasons in terms of weather and climate and describe how seasons differ between the northern and southern hemispheres and the equator.
5. Each student can demonstrate an understanding of rock cycles and erosion caused by wind and water and show that rocks and soil are comprised of smaller particles, many of which cannot be seen with the naked eye and which, in soil, may include living organisms.

Science Standards Intermediate Level

A. *Performance Statement:* Each student can apply knowledge of scientific concepts in an experimental context, solve problems and investigate questions using scientific methods, and revise personal understanding to accommodate new knowledge.

Standards:

1. Each student can develop questions that can be explored experimentally and formulate hypotheses consistent with known phenomena and principles.
2. Each student can design an investigation to test an hypothesis, control variables, and collect relevant data.
3. Each student can use appropriate measuring tools to collect and record data, evaluate their precision and accuracy, and distinguish between observation and inference.
4. Each student can explain the need for many observations in the development of scientific knowledge.
5. Each student can develop safe and effective skills when using common lab and field techniques.
6. Using statistics, mathematical models, and available technology, each student can organize, manipulate, and present data to show functional relationships between observations.
7. Each student can evaluate the validity of a hypothesis in the light of observations and experimental data and extrapolate functional relationships beyond actual observations.
8. Each student can relate an experiment to other experiments, to appropriate scientific models and theories, and develop new questions, new hypotheses.
9. Each student can integrate the results of an investigation into existing knowledge, distinguishing between scientific evidence and personal opinion.
10. Each student can communicate the results of an investigation with fidelity and clarity, using words, graphs, pictures, charts, diagrams, and appropriate computer software.

B. Performance Statement: Each student can critically evaluate or construct arguments based on scientific knowledge, analyze the arguments of others, and distinguish strong arguments from weak ones.

Standards:

1. Each student can identify the central conclusions or claims of an argument based on scientific knowledge.
2. Each student can identify and evaluate the validity of the assumptions of an argument based on scientific knowledge.
3. Each student can evaluate the implications and consequences of an argument based on scientific knowledge, including ethical implications and consequences.
4. Each student can evaluate the overall strength of an argument based on scientific knowledge considering logic, possible bias of the author, credibility of sources, and the relevance, validity, and sufficiency of evidence.

C. Performance Statement: Each student can apply the knowledge and methods of science when making real-world decisions.

Standards:

1. Each student can gather information about the scientific and technological aspects of a socially significant issue and generate alternative solutions.
2. Each student can evaluate each proposed solution, aware that an incomplete knowledge base may result in uncertainty, and decide which alternative seems best.
3. Each student can present a preferred solution to a group and participate in a consensus building discussion to arrive at a group decision.

D. Performance Statement: Each student understands and can apply knowledge of the life sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts of evolution: the unity and diversity of life, how humans have adapted to various environments and resultant specialization.

2. Each student understands and can apply concepts of ecology: interactions and interdependence, how organisms respond to the environment, niche and habitat, interactions among organisms, how humans affect the environment.
3. Each student understands and can apply concepts of reproduction and genetic continuity: life cycles (stages of life spans for invertebrates, vertebrates, and seed plants), patterns of reproduction in plants and animals, advantages of different patterns.
4. Each student understands and can apply concepts of human growth, development, and differentiation: gestation, birth, infancy, childhood, adolescence, adulthood, aging, death.
5. Each student understands and can apply concepts of energy, matter and organization: cell structure at the light microscopic level, biological compounds (e.g. carbohydrates, fats, proteins, etc.)
6. Each student understands and can apply concepts of maintenance of dynamic equilibrium: human systems and homeostasis, human health and disease.

E. Performance Statement: Each student understands and can apply knowledge of the physical sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts of matter: kinds and characteristics, properties.
2. Each student understands and can apply concepts of energy: forms, energy transformations, conservation of energy.
3. Each student understands and can apply concepts of the nature of physical and chemical change: rates of change, equilibrium, phase change.
4. Each student understands and can apply concepts of motion and force: descriptors of motion, causes of motion, equilibrium.
5. Each student understands and can apply concepts of waves and light: mechanical waves, sound, light (characteristics and models).
6. Each student understands and can apply concepts of electricity and magnetism: static change, moving charge and magnets, electric circuits, fields.

F. Performance Statement: Each student understands and can apply knowledge of the following concepts in the earth sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts of structure and features: oceans and continents, minerals and rocks, soils, geologic time.
2. Each student understands and can apply concepts of crust and interior processes: convection currents, rock cycle, continental drift.
3. Each student understands and can apply concepts of surface processes: weathering, erosion, deposition, glaciation, hydrologic processes (water cycle), water quality and pollution, atmospheric processes (seasons, weather) air quality and pollution.
4. Each student understands and can apply concepts of earth in space: earth, moon, sun, and other solar objects.

G. Performance Statement: Each student understands and can apply knowledge of the dynamic relationship between science, technology, and society.

1. Each student can provide examples of scientific knowledge and cite supporting empirical evidence.
2. Each student can give examples of scientific knowledge that was used to develop and improve a technological design.
3. Each student can give examples of scientific investigations conducted for the purpose of finding a technological solution to a social problem.

Science Standards Upper Level

A. Performance Statement: Each student can apply knowledge of scientific concepts in an experimental context, solve problems and investigate questions using scientific methods, and revise personal understanding to accommodate new knowledge.

Standards:

1. Each student can develop questions that can be explored experimentally, find relevant information in the literature, refine the questions, build a set of hypotheses, and relate these hypotheses to current scientific knowledge.
2. Each student can decide what data are needed to test a hypothesis, identify instruments and tools needed to collect the data, and make (or modify) instruments when resources permit.
3. Each student can control variables, manipulate and measure one selected variable, collect and record data, determine patterns of variation in data, evaluate the precision and accuracy of data, critique experimental procedures, and, when appropriate, improve an experimental design.
4. Each student can explain the need for many observations and determine the number of observations needed to reach an appropriate level of accuracy and reliability in an experiment.
5. Each student can choose or design appropriate measuring tools and apparatus, use them safely and effectively, and evaluate their precision.
6. Each student can organize and manipulate data using appropriate statistical and mathematical methods.
7. Each student can evaluate the validity of a hypothesis in the light of observations and experimental data, extrapolate functional relationships beyond actual observations, and formulate appropriate generalizations, i.e. laws or principles warranted by the relationship found.
8. Each student can relate the results of an experiment to experimental questions that were asked, to other experiments, and to known models and theories, in order to ask new questions and plan subsequent experiments.
9. Each student can revise, refine, or extend his or her understanding of scientific theory using evidence gained from experiments.

10. Each student can communicate the results of an experiment with fidelity and clarity, using words, graphs, pictures, charts, diagrams, and computer software, in language and forms appropriate for an intended audience.

B. Performance Statement: Each student can critically evaluate or construct arguments based on scientific knowledge, analyze the arguments of others, and distinguish strong arguments from weak ones.

Standards:

1. Each student can evaluate or construct an argument based on scientific knowledge, identify the assumptions, explain the logic, evaluate the evidence, and deduce the implications.
2. Each student can identify, compare, and evaluate compatible and contradictory arguments associated with historical and current scientific debates (e.g. the heliocentric theory, the theory of evolution, existence of the ether, quantum theory, global warming).
3. Each student can identify the implications, limits, conditions, and consequences of an argument based on scientific knowledge.
4. Each student can evaluate the overall strength of an argument presented in the news media, a magazine, or a scientific journal, considering logic and evidence, credibility of sources, possible bias of the author, and any limits, conditions, or consequences that may have been overlooked by the author.

C. Performance Statement: Each student can apply the knowledge and methods of science when making real decisions.

Standards:

1. Each student can identify the scientific components of an issue and suggest their implications for political, social, cultural, technological, or economic proposals, innovations, and courses of action.
2. Each student can identify the bias and assumptions influencing decisions, proposals, and courses of action.
3. Each student can evaluate alternative proposals, aware that an incomplete knowledge base may result in uncertainty, decide which alternatives have scientific and technological merit, and examine their political, social, cultural, technological, or economic implications.

4. Each student can present a proposal to a group, support the proposal with evidence, suggest the likely outcomes, answer related questions, evaluate alternative proposals, and participate in a consensus building discussion to arrive at a group decision.

D. Performance Statement: Each student understands and can apply knowledge of the life sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts of evolution: origin, diversity, and unity of life; common characteristics of life; theories about origin of life; evidence of evolution; mechanisms of evolution (biodiversity, adaptation, specialization, speciation); biodiversity over time (including human evolution); extinction and conservation.
2. Each student understands and can apply concepts of ecology: interactions and interdependence; organismal responses to the environment; population attributes, regulation, and carrying capacity; food webs, niches, and interactions among organisms; matter cycles and energy flow; human influences (population growth, resources, waste, habitat alteration, agriculture and food production).
3. Each student understands and can apply concepts of reproduction and genetic continuity: cell reproduction, organismal reproduction, Mendelian genetics, molecular genetics, human genetics, genetic techniques including recombinant DNA.
4. Each student understands and can apply concepts of growth, development, and differentiation: life cycles, plant and animal development, cells, tissues, organs, systems, and environmental influences on development,
5. Each student understands and can apply concepts of energy, matter and organization: biochemistry; cells and cell theory; ATP and energy transformations; photosynthesis; aerobic and anaerobic respiration; transport and membranes; assimilation, digestion, gas exchange, and circulation.
6. Each student understands and can apply concepts of maintenance of dynamic equilibrium: homeostasis and feedback mechanisms, regulation systems, health and fitness, immune systems, disease.

E. Performance Statement: Each student understands and can apply knowledge of the physical sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts related to matter: physical states and characteristics, chemical and physical properties, transitions, energy, pressure, temperature, structures (atomic models, bonds, geometry, regularity, degree of order, variability of composition and properties).
2. Each student understands and can apply concepts of energy: forms, transformations, conservation of energy, laws of thermodynamics and laws of motion, as evident in the natural world and used by humans.
3. Each student understands and can apply concepts of the nature of physical and chemical change: rate, equilibrium, catalysis, phase, state, particle size, temperature, and pressure (including acid-base, concentration and pH, oxidation-reduction, equilibrium, bonding, crystalline structure, impurities, and alloys) as they relate to properties of matter (including conductivity, hardness, surface properties, and tensile strength).
4. Each student understands and can apply concepts of motion and force: momentum, direction, velocity, acceleration (both straight and curvilinear).
5. Each student understands and can apply concepts of waves and particles: the transmission of heat, light, sound, and other forms of energy in a vacuum and in solids, liquids, and gases.
6. Each student understands and can apply concepts of electricity and magnetism: currents, force fields, moving and static charges, electric circuits, electric and electronic products.

F. Performance Statement: Each student understands and can apply knowledge of the earth sciences, particularly in relation to the six themes: energy, evolution, patterns of change, patterns of stability, scale and structure, systems and interactions.

Standards:

1. Each student understands and can apply concepts of matter, concepts of energy, and concepts of the nature of physical and chemical change as they relate to the underlying structure and surface features of the earth and other solar objects.
2. Each student understands and can apply concepts of geology: models of crust movements and features of the earth, interior structure, convection currents, volcanic action, plate tectonics, continental drift and changes in the polarity of the earth.

3. Each student understands and can apply concepts of surface processes: weathering, erosion, deposition, glaciation, hydrologic processes (water cycle, ground water, water quality, pollution) wind and other atmospheric processes (convection, energy transfer, weather patterns, climate, seasons, air quality, pollution).
4. Each student understands and can apply concepts of earth and stars: solar system, galaxies, energy transfers, origin of the universe, change in the universe.

G. Performance Statement: Each student understands and can apply knowledge of the dynamic relationship between science, technology, and society.

Standards:

1. Each student can give examples to show that scientific knowledge is public, replicable, and undergoing revision and refinement based on new experiments and data.
2. Each student can illustrate the growth and application of scientific knowledge by choosing a developing technology, explaining the science on which it rests, and predicting its beneficial consequences, limitations, and possible adverse effects.
3. Each student can illustrate the limits of technological design by choosing a design and predicting the failures that might occur if it were employed outside its limits.
4. Each student can choose a social question to which there are several proposed technological solutions and explain the advantages and disadvantages of each solution.

**Mathematics Standards
Primary Level**

A. Performance Statement: Each student can solve real-world problems using knowledge of numbers, numeration, and basic mathematical operations.

Standards:

1. Each student can add, subtract, multiply, and divide whole numbers mentally, with paper and pencil, and with a calculator.
2. Each student can use mathematics as a way to understand other areas of the curriculum, for example, using measurement in science and computing the passage of time in history.
3. Each student can solve problems by selecting from a variety of approaches—for example, making a diagram, chart, or graph; finding a pattern; or working backwards—and explain the solution in writing.
4. Each student can judge the reasonableness of answers to mathematical problems.
5. Each student can use estimation for routine problems.
6. Each student can demonstrate an understanding of simple fractions (halves, thirds, and quarters) and commonly-used decimals (money amounts), and show the relation between them.
7. Each student can demonstrate a basic understanding of ratio and scale—for example, by mapping familiar territory such as the classroom, school, or by constructing proportional models.

B. Performance Statement: Each student can make decisions and predictions based on a given set of data.

Standards:

1. Each student can collect, organize, and describe data; create graphs and charts from that data; and recognize and predict patterns.
2. Each student can analyze data and present it in a variety of forms, such as charts, pictures, or reports.

3. Each student can formulate and solve problems that involve collecting and analyzing data.
4. Each student can use basic concepts of probability to make predictions and solve problems.

C. Performance Statement: Each student can identify geometric properties and relationships.

Standards:

1. Each student can describe, model, draw, and classify two- and three- dimensional geometric figures.
2. Each student can find the perimeter, area, and volume of simple figures through various approaches, including unit square coverings, measurement, and computation.
3. Each student can examine and compare given geometric figures, and identify such properties as congruency, similarity, symmetry, points, segments, angles, and planes.
4. Each student can measure length, capacity, weight, time, and temperature; use these measurements in computations; and judge the reasonableness of results.

D. Performance Statement: Each student can use variables, models, and graphs to express relationships, and explain them in writing.

Standards:

1. Given an equation, each student can recognize and explain the associative, distributive, and commutative properties.
2. Each student can identify, describe, create, and extend patterns in data, objects, symbols, or numbers.
3. Each student can solve simple algebraic problems with one or two unknowns using graphs or tables.

Mathematics Standards Intermediate Level

A. Performance Statement: Each student can develop and apply a variety of mathematical strategies to solve real-world and non-routine problems.

Standards:

1. Each student uses reason and logic to evaluate information, identify relationships, perceive patterns, and formulate questions for further exploration.
2. Each student uses a variety of approaches—numerical, symbolic, graphical, statistical, for example—to investigate and solve complex problems within and outside the field of mathematics.
3. Each student can analyze a non-routine problem by modeling, illustrating, guessing, simplifying, generalizing, and shifting to another point of view.
4. Each student can construct a mathematical argument, both oral and written, with appropriate vocabulary and symbols.
5. Each student can communicate with peers about a problem and possible solutions and can advocate for one among competing hypotheses so that peers can understand the reasoning involved.
6. Each student can use technology to develop a mathematical presentation, oral or written, employing the conventions of mathematical discourse.

B. Performance Statement: Each student can gather, analyze, and evaluate data to formulate and test a hypothesis.

Standards:

1. Each student can use appropriate tools—such as measuring instruments, questionnaires, and probes—for the systematic acquisition of data.
2. Each student can organize, represent, and explain data in various ways—using tables, graphs, and statistics, for example.
3. Each student can specify the sample space of an experiment and calculate the probability of an event.

4. Each student can base predictions, inferences, decisions, and convincing arguments on the careful analysis of data and the test of a hypothesis.

C. Performance Statement: Each student can understand functions, use functional notation, and perform transformations.

Standards:

1. Each student understands the mathematical concept of function and the various representations of a function.
2. Each student can use functional notation to express relationships and transformations.
3. Each student can represent a function by a matrix and use matrices to perform transformations.
4. Each student understands the concept of rate of change and its connection to the slope of a line.

D. Performance Statement: Each student understands and can apply the properties and relationships of figures in space.

1. Each student can visualize and represent spatial relationships and geometric properties, such as symmetry, similarity, perpendicularity, and parallelism.
2. Each student chooses appropriate units for measurement and sets appropriate standards for the accuracy of measurement.
3. Each student can identify various geometric figures by their properties and apply this knowledge of properties when solving problems.
4. Each student can use analytical tools for measurement and appropriate formulas for area and volume of simple geometric shapes in two and three dimensions.

E. Performance Statement: Each student can draw on a broad body of mathematical knowledge and skill when solving problems.

Standards:

1. Each student calculates with efficiency and accuracy and employs a variety of computational aids, such as calculator, compass, graphing utility, spreadsheet, software for geometric constructions, and computer algebra system.

2. Each student routinely uses estimation to evaluate a strategy and test the reasonableness of a result.
3. Each student understands and can apply number and numeration concepts, such as cardinality, order, divisibility, commutativity, and zero.
4. Each student can formulate and solve equations and inequalities by numerical, symbolic, and graphical methods.
5. Each student can use, create, and explain formulas and algorithms.

Mathematics Standards Upper Level

A. Performance Statement: Each student can develop and apply a variety of mathematical strategies to solve real-world and non-routine problems.

Standards:

1. Each student uses reason and logic to evaluate information, identify relationships, perceive patterns, formulate questions, pose problems, make conjectures, and pursue ideas that lead to further understanding and deeper insight.
2. Each student uses a variety of approaches—numerical, symbolic, graphical, statistical, for example—to investigate and solve complex problems within and outside the field of mathematics, including problems posed by the student for the purpose of making and testing generalizations.
3. Each student can analyze non-routine problems and arrive at solutions by various means, including models and simulations, often starting with provisional conjectures and progressing, directly or indirectly, to a solution, proof, or counter-example.
4. Each student can choose a method of inquiry—induction, deduction, indirect proof, for example—construct a mathematical argument, and specify the conditions in which the argument is valid.
5. Each student can communicate with peers about a problem and possible solutions, determine the criteria for evaluating solutions—including those needed for proof—and advocate for one among competing hypotheses so that peers can understand the reasoning involved.
6. Each student can develop a mathematical presentation, oral or written, employing the conventions of mathematical discourse.

B. Performance Statement: Each student can gather, analyze, and evaluate data to formulate and test a hypothesis.

Standards:

1. Each student makes appropriate use of measures of central tendency, variability, and correlation.
2. Each student understands different representations of the same data and can relate a change in one representation to a corresponding change in another representation.

3. Each student can design, conduct, and interpret a statistical experiment.
4. Each student can model real-world data, by using goodness of fit models, for example.
5. Each student can apply various parametric and non-parametric tests of significance..
6. Each student can use simulation, such as Monte Carlo methods, to solve problems.
7. Each student can analyze and evaluate the methods and conclusions of statistical experiments reported in journals, magazines, news media, and advertising.

C. Performance Statement: Each student can understand functions, use functional notation, and perform transformations.

Standards:

1. Each student can represent transformations by means of functions, matrices, graphs, and charts.
2. Each student chooses appropriate coordinates for a graph—rectangular, polar, or parametric—and can convert between them.
3. Each student can see relationships and make connections among trigonometric functions, polar coordinates, and complex numbers.
4. Each student understands the properties and transformations of classes of functions.
5. Each student understands and can apply the relationship between slope and tangent line and between instantaneous and average rates of change.
6. Each student understands and can apply the concepts of continuity and discontinuity.
7. Each student understands and can apply the concept of recursion.

D. Performance Statement: Each student understands and can apply properties and relationships of figures in space.

Standards:

1. Each student can visualize and represent problem situations and spatial relationships using two-dimensional and three-dimensional geometric models, apply geometric properties such as symmetry, perpendicularity, and parallelism, and classify figures in terms of congruence and similarity.

2. Each student can deduce properties and relationships from assumptions, theorems, and statements.
3. Each student uses appropriate transformations—such as translation, rotation, and reflection—to analyze geometric objects.
4. Each student can translate numerical relationships into geometric representations and vice versa through scaling and coordinate geometry.
5. Each student uses analytical tools for measurement and appropriate formulas for area and volume of mathematical and real-world objects in two and three dimensions.

E. *Performance Statement:* Each student can draw on a broad body of mathematical knowledge and skill when solving problems.

Standards:

1. Each student calculates with efficiency and accuracy, selects appropriate methods and procedures, and employs a variety of computational aids, such as calculator, spreadsheet, and software for geometric analysis.
2. Each student can use graphing technology and a computer algebra system with proficiency.
3. Each student can compute with real and complex numbers and can manipulate functions, vectors, matrices, and series.
4. Each student routinely uses estimation and assesses the acceptable limits of error when evaluating strategies and testing the reasonableness of results.
5. Each student can solve systems of equations by various means, including matrices and vectors.
6. Each student can evaluate, graph, and analyze the elementary functions—polynomial, rational, trigonometric/circular, exponential, and logarithmic—and select the appropriate function to solve a problem.
7. Each student can work with abstract mathematical objects and use the symbolic language of mathematics effectively.
8. Each student can use, create, and explain formulas and algorithms and analyze algorithms for efficiency.

Foreign Language Standards Primary Level

A. Performance Statement: Each student can communicate effectively and appropriately in the chosen language when confronted with a range of everyday situations.

Standards:

1. Each student can understand the chosen language in familiar situations and perform such tasks as introducing one's self, ordering meals, asking directions, and making purchases.
2. Given familiar everyday situations (such as family, school, friends, food, recreation, and one's individual needs), each student can make appropriate comments, initiate and respond to simple statements, and maintain simple face-to-face conversations.
3. Each student can describe a given familiar situation in the present and immediate future.
4. Each student can read and write simple texts on familiar topics, showing a basic understanding of grammar, syntax, and spelling rules.
5. Each student can perform simple tasks in other subjects, including mathematics and science, in the chosen language.

B. Performance Statement: Each student can demonstrate, in the chosen language, a knowledge of the people of countries where the language is spoken.

Standards:

1. Each student can identify celebrations, food, festivals, and customs of selected countries where the chosen language is spoken and can explain differences and similarities with own culture.
2. Each student can identify games, fairy tales, songs, and rhymes of the selected countries and explain differences and similarities with own culture.
3. Each student can demonstrate the appropriate use of language and behavior as used in daily life in the selected countries and explain differences and similarities with own culture.

C. Performance Statement: Each student can identify, in the chosen language, key geographical features, historical figures, and contributions of the people of selected countries where the chosen language is spoken.

Standards:

1. Given a map of the selected countries, each student is able to locate and identify the capitals, major rivers, mountains, and other key geographical features.
2. Each student can identify some of the major historical figures of the selected countries.
3. Each student can identify some of the outstanding achievements and contributions that the people of the selected countries have had in the arts, literature, music, science, and history.
4. The student can explain the influence that people from the selected countries have had on the United States.

**Foreign Language
Intermediate Level**

A. Performance Statement: Each student can communicate effectively and appropriately in the chosen language when confronted with a wide range of situations.

Standards:

1. Each student can understand the point of view and/or main ideas in selected radio/TV broadcasts, oral reports, poems, or short stories.
2. Each student can participate in formal and informal conversations on familiar and unfamiliar topics, areas of interest, and current events.
3. Each student can ask questions to clarify meaning and seek and give information.
4. Each student can read literature and unfamiliar selections on general topics for general understanding.
5. Each student can clearly and accurately write letters, paraphrases, and brief summaries on familiar and unfamiliar topics.
6. Each student can use the chosen language for learning across the curriculum—for example, by accessing Internet, interviewing native speakers, or consulting original library sources.

B. Performance Statement: Each student can demonstrate, in the chosen language, a knowledge of the people and customs of selected countries where the language is spoken.

Standards:

1. Each student can identify characteristics such as gestures, dialect, idioms, and linguistic idiosyncrasies unique to the selected countries.
2. Each student can demonstrate the appropriate use of language and customs for successful interaction in the selected countries.
3. Each student can compare and contrast cultural differences among the selected countries and own culture, and can explain these differences.
4. Each student can identify the major events of the selected countries' histories and place them accurately on a timeline.

C. Performance Statement: Each student can identify, in the chosen language, key world issues as seen by the people of selected countries where the language is spoken.

Standards:

1. Each student can identify current world issues as they relate to the selected countries and compare the different points of view between those countries and the United States.
2. Each student can describe the economies of the selected countries.
3. Each student can discuss the political and economic relationship between the United States and the selected countries.

Foreign Language Upper Level

A. Performance Statement: Each student can communicate effectively and appropriately in the chosen language when confronted with a full range of personal, social, intellectual, and job-related situations.

Standards:

1. Each student can respond to questions, make judgments, and offer opinions about a radio show, television program, film, or lecture that includes variations in accent, age of speakers, and rapidity of speech.
2. Each student can discuss topics at concrete and abstract levels.
3. Each student can analyze and discuss poetry or literature using appropriate literary terms.
4. Each student can paraphrase or amplify remarks sufficiently to be understood by a native speaker when communication becomes stalled.
5. Each student can read major literary works and texts on unfamiliar topics which are conceptually abstract and linguistically complex, and include cultural nuances.
6. Each student can perform across the curriculum in the chosen language.

B. Performance Statement: Each student can analyze, in the chosen language, the similarities and differences of the people of countries where the language is spoken and other world cultures.

Standards:

1. Each student can discuss the influence different religions and national and world politics have had on the people of the selected countries and explain the similarities and differences found in own culture and other world cultures.
2. Each student can analyze examples of the selected countries' media—such as television, music, magazines, movies, and advertisements—and compare to examples from own culture.
3. Each student can discuss the history of the selected countries, and analyze the countries' impact on the politics, religion, art, and economy of other world cultures.

C. Performance Statement: Each student can integrate knowledge of the chosen language and culture with other subject areas including geography, history, mathematics, science, and the arts.

Standards:

1. Each student can read and analyze texts in another subject areas written in the chosen language.
2. Each student can analyze a topic from another subject area from two cultural perspectives.
3. Each student can conduct research in the chosen language for another subject area.
4. Each student can write a major paper in the chosen language, revise it for content, proofread it for accurate spelling and grammar, and edit it for style.

Health and Physical Education Standards Primary Level

A. Performance Statement: Growth and Development. Each student can describe the progression of human development in stages—from embryo to birth to adolescence and so forth—and recognize major factors contributing to growth and development.

Standards:

1. Each student can identify a usual sequence of physical and mental human development and recognize individual variation in the time taken to develop.
2. Each student can describe how physical characteristics, heredity, physical and mental health, and environment can influence growth and development.
3. Each student can identify ways nutrition, exercise, environment, leisure activities, and habits affect physical, mental, and emotional health.
4. Each student can describe the functions of major organs (for example, the heart, lungs, brain) and of the five senses.

B. Performance Statement: Health and Nutrition. Each student can show a basic understanding of the effect of various factors on health—including food, environment, disease, and the use of drugs and alcohol—and explain how such factors can be beneficial or detrimental to health.

Standards:

1. Each student can identify common methods of disease transmission and prevention, for example, the importance of washing one's hands to prevent transmission of the common cold or flu.
2. Each student can identify nutrients associated with common foods and describe how they contribute to good health and growth, for example, the importance of calcium to the development of bone and teeth.
3. Each student can show an understanding of drugs that are helpful to health maintenance (i.e., medicine, vaccines, etc) and distinguish these from so-called recreational drugs. Each student can describe effects from the proper and improper use of drugs.

4. Each student can show an understanding of the relationship between diet and health and explain the effects of poor nutrition and overeating.
5. Each student can show an understanding of food as a source of energy and discuss the relationship between physical activity and weight.

C. Performance Statement: Personal Fitness. Each student can participate in sports and/or recreational activities that promote health and physical fitness.

Standards:

1. Each student can perform the elements of a nationally recognized fitness test (e.g., the President's Challenge from the President's Council on Physical Fitness and Sports) and compare results to the test's established standards.
2. Each student can demonstrate fundamental locomotor (from place to place, such as running), non-locomotor (in place), and manipulative (catching, dribbling, etc.) movements, and show awareness of space, time, and force in carrying out movements.
3. Each student can show good sportsmanship by recognizing and respecting the capabilities, similarities, differences, and aspirations of others on the playing field.
4. Each student can apply knowledge of safety rules in sports, school, and home. Each student can perform basic first aid for minor injuries.

Health and Physical Education Standards Intermediate Level

A. Performance Statement: Growth and Development. Each student can describe the human life cycle from fertilization; show an understanding of embryo development as the division of cells; and examine the development and functions of organs and organ systems.

Standards:

1. Each student can describe the process of embryo development from the point of fertilization through cell division and the process of cell differentiation. Each student can compare human embryo and infant development to other mammals.
2. Each student can identify physical and mental developmental changes which occur during puberty and describe physical changes brought on by aging. Each student can examine factors (such as nutrition, medical care, environment, sanitation) that affect the rate or condition of development.
3. Each student can show a basic understanding of organ systems, describe their interactions (e.g., the circulation of blood transporting oxygen to cells), and apply knowledge of the specialization of human cells.

B. Performance Statement: Health and Nutrition. Each student can show a basic understanding of the effects of various factors on health—including food, environment, disease, and the use of drugs and alcohol—and explain how such factors can be beneficial or detrimental to health.

Standards:

1. Each student can evaluate how choices related to nutrition, exercise, rest, and life experiences affect physical and mental health.
2. Each student can show an understanding of how viruses, bacteria, fungi, and parasites can infect the body and interfere with normal functions and can describe how certain preventions (e.g., vaccines) and interventions (e.g., antibiotics) work in the treatment of disease.
3. Each student can explain how calories are used in the body and evaluate the relationship of caloric requirements to body weight, age, sex, activity level, and natural body efficiency.
4. Each student can describe the short-range and long-range effects on the body of toxic substances, including illicit drugs, alcohol, and tobacco.

C. Performance Statement. Personal Fitness. Each student can measure and analyze personal fitness, and participate in sports and/or recreational activities that promote health and physical fitness.

Standards:

1. Each student can sustain an aerobic activity, maintaining a target heart rate, to achieve cardiovascular benefits.
2. Each student can demonstrate an understanding of the mechanical principles related to movement (e.g., throwing, running, catching) and perform movement skills effectively.
3. Each student can develop strategies in accordance with established rules for participation in games and sports.
4. Each student can practice the rules of safe and fair play while participating in sports and physical activities.
5. Each student can demonstrate knowledge of first aid, safety rules, and rescue skills.

Health and Physical Education Standards Upper Level

A. Performance Statement: Growth and Development. Each student can apply knowledge of biology to growth and development, examine medical technologies and what makes them effective, and explore ethical and social issues raised by medical research and advancement.

Standards:

1. Each student can describe the function of DNA in human development and show an understanding of how differences in immediate cell environments can activate or inactivate DNA information.
2. Each student can examine and explain various interferences to normal body functions (such as allergic reactions, genetic diseases, and viral infections) and explain the relative effectiveness of treatments.
3. Each student can examine the development of various medical technologies and evaluate the physical, social, economic, and ethical effects and considerations.

B. Performance Statement: Health and Nutrition. Each student can examine and explain the effects of various factors on health—including food, environment, disease, and the use of drugs and alcohol—and interpret medical findings as written for lay readers to describe developments in detection, prevention, and treatment.

Standards:

1. Each student can apply knowledge of chemical interactions, heredity, and technology to analyze various factors affecting individual and public health and explain the effect of related medical developments as reported through the media.
2. Each student can examine and explain, on a molecular level, the use of nutrients and calories in the body and apply this knowledge to show its significance to health maintenance.
3. Each student can discuss the physical, emotional, and social effects of substance abuse.

C. Performance Statement: Personal Fitness. Each student can measure and analyze personal fitness and participate in sports and/or recreational activities that promote health and physical fitness.

Standards:

1. Each student can assess and analyze personal fitness levels to determine fitness and wellness. Each student can select activities that will improve and/or maintain fitness and health by analyzing and comparing the benefits of various activities.
2. Each student can demonstrate knowledge of and perform simple and complex movements using multiple body parts in individual, dual, and team activities.
3. Each student can apply the concept of good sportsmanship to various situations within and outside of sports.
4. Each student can describe and/or perform a variety of first aid and safety procedures and analyze various life-threatening situations to select effective methods of rescue.

Fine Arts Standards
Visual Arts
Primary Level

A. Performance Statement: Each student can create with various art media to express ideas and experiences.

Standards:

1. Each student can design and create simple works of art using different media, techniques, and processes—such as drawing, painting, sculpting, printmaking, design, film, or video—which express an intended purpose.
2. Each student can discuss the visual characteristics of student’s own works in reference to perspective, proportion, scale, symmetry, motion, color and/or light.
3. Each student can reproduce the organization of the color wheel.
4. Each student can explore techniques for producing the illusion of space in two- and three-dimensional forms.
5. Each student can safely use art materials, tools, and equipment.

B. Performance Statement: **Each student understands cultural and historical contexts of the visual arts.**

Standards:

1. Each student can recognize major works of western and non-western art—such as the “Mona Lisa,” the Great Sphinx, “Venus de Milo”—and place the works in the correct historical context including both time (i.e. prehistoric, ancient, or modern) and place (i.e. European, African, Asian, Native American, etc.).
2. Each student can recognize and discuss important national, regional, and local works of art, artifacts, and architecture and explain their relationship to major trends, eras, or styles.
3. Each student can identify art of given culture (sculptures, paintings, architecture, artifacts, and objects used for daily living) and understand relationships between a culture’s art and its social context.

C. Performance Statement: Each student can view and respond to works of visual art, and offer ideas about their purpose and meaning.

Standards:

1. Each student can identify images and symbols found within works of art, and interpret their purpose and meaning.
2. Each student can understand the ideas of others about the purpose and meaning of given works of art.

**Visual Arts
Intermediate Level**

A. Performance Statement: Each student can create with various art media and effectively convey an intended purpose and meaning.

Standards:

1. Each student can effectively translate feelings, experiences, and ideas into various visual arts media showing competent technique and organization.
2. Each student can select media, techniques, and processes which are most effective to express the student's purpose, and justify those selections.
3. Each student can discuss the techniques, the principles or design, and the literal and visual qualities of drawing, painting, printmaking, design, fine craft, sculpting, photography, computer graphics, and film and television.
4. Each student can describe images and technical terminology associated with the visual arts.

B. Performance Statement: Each student can discuss and analyze various cultural and historical contexts of the visual arts.

Standards:

1. Each student can explain the role that visual arts and artists play in various cultures and historical periods.
2. Each student can analyze and describe how the needs, attitudes, beliefs, and values of a culture influence the artwork produced by the culture.
3. Each student can characterize works according to era or genre—such as the differences and similarities between Gothic and Renaissance portraits, Mexican murals, Impressionism, etc.

C. Performance Statement: Each student can view and respond to works of visual art, and interpret their purpose and meaning.

Standards:

1. Each students can compare different works of art (student's own work and works from various eras and genres) in respect to meaning, style, media, and form.
2. Each student can analyze the aesthetic qualities of art and nature, evaluate their merits, and give reasons to support his or her appraisal.

Visual Arts Upper Level

A. Performance Statement: Each student can create with various art media, demonstrating technical skill and aesthetic understanding, and effectively convey an intended purpose and meaning.

Standards:

1. Each student can show sound technique and personal style in two or more forms—such as painting, drawing, printmaking, design, sculpting, photography, fine craft, film, and/or television.
2. Each student can analyze and judge visual relationships to improve own art production.
3. Each student can effectively convey ideas, experiences, and emotions in the creation of a work of art.

B. Performance Statement: Each student can examine, analyze, and discuss the connections between the visual arts and the philosophical, political, social, and economic ethos of the culture in which the art was created.

Standards:

1. Each student can analyze and describe how art from a variety of cultures reflects, records, and/or shapes history.
2. Each student can relate certain works, including student's own work, to the artwork of contemporary, historic, and prehistoric artists.
3. Each student can analyze the formal technical and aesthetic qualities of certain artworks and genres; connect these works and genres with their cultural, historical, and social contexts; and interpret their meaning from various perspectives, including the perspectives contemporary to the work, as well as student's own.

C. Performance Statement: Each student can respond to works of visual art, analyze how their technical and aesthetic merits convey their purpose and meaning, and apply this knowledge to improve student's own work.

Standards:

1. Each student can examine and evaluate the work of art critics, historians, and artists.
2. Each student can engage in personal research which leads to an understanding of certain topics, such as particular theories or styles; explain findings both verbally and graphically; and translate this research into works of visual art.
3. Each student can prepare a portfolio of preparatory studies, design research and experiments, and discuss the critical aspects of this work with an examiner.

**Fine Arts Standards
Drama Standards
Primary Level**

A. Performance Statement: Each student can interpret and communicate experiences through the use of body, face, and voice.

Standards:

1. Playwright. Each student, with teacher guidance, can collaboratively select characters, environments, and playable actions that create scenes for small group improvisations. Each student can improvise dialogue and record it using the proper format.
2. Actor. Each student can, with teacher guidance, draw upon memory to imagine and describe characters and their environments. Each student can use movement and voice to explore a variety of roles and maintain a character for a specific role in classroom dramatizations drawn from life, fantasy, literature, and history.
3. Director. Each student can imagine and describe images using visual aspects (color, shape, mass, texture, light intensity) and aural aspects (rhythm, tempo, tone, dynamics) for a specific purpose. Each student can choose a playing space and select and organize available materials to suggest scenery, properties, lighting, sound, and costumes appropriate to specific classroom dramatizations.
4. Each student can select material about people, events, time, and place appropriate to classroom dramatizations for stories and events.

B. Performance Statement: Each student understands the influence of drama in human life and can use past and present dramatizations of people's lives to explore connections among people and cultures.

Standards:

1. Each student can recognize and describe how cultural and historical characteristics, actions, time and place relate to each other in classroom dramatizations and in theater, film, and electronic media productions.
2. Each student can compare the characters and situations from dramatic works to people and situations in real life.
3. Each student can relate basic stories and specific scenes from a selection of exemplary dramatic works—for example, scenes from Shakespeare, or film and television scripts adapted from classic children's literature. Each student can identify the historical period and culture associated with the particular work.

C. Performance Statement: Each student can show perception and analytical abilities as an artist and as part of the audience.

Standards:

1. Each student can analyze the basic dramatic and production elements of classroom performance, and describe their use using theatrical vocabulary.
2. Each student can select examples; describe and demonstrate how productions from theater, film, and electronic media use characters, environment, and action; and show how each example differs.
3. Each student can identify the dramatic elements of stories using appropriate vocabulary. Each student can determine what can be dramatized and what cannot.
4. Each student can participate appropriately as part of an audience for classroom, theater, film and electronic media presentations. Each student can describe the visual, aural, and verbal elements, interpret the meaning and purpose, and offer a personal opinion about their merits.

Drama Standards Intermediate Level

A. Performance Statement: Each student can perform various theatrical functions, including playwright, technician, and actor.

Standards:

1. Playwright. Each student can choose characters and environments and actions appropriate to specific story objectives, and can describe ways to start and end a dramatic event. Each student can create dialogue, tell stories through drama, and demonstrate an understanding of script, scenario, and storyboards.
2. Actor. Each student can analyze improvisational scenarios and dramatic texts for character description, motivation, and objectives. Each student can prepare biographical profiles for characters and observe people as models, identifying applicable characteristics and behaviors. Each student can apply acting techniques in such areas as concentration, movement, and voice in improvised and scripted scenes. Each student can contribute to the cooperative approach to production.
3. Director/Technician. Each student can analyze improvisation scenarios and dramatic texts for physical requirements and visual and aural qualities, and can collaboratively conceptualize appropriate environments for scene work. Each student can understand fundamental vocabulary, attributes, and technical elements of scenery, properties, lighting, sound, costumes, and makeup. Each student can work collaboratively to select and create materials to suggest specific environments to an audience.
4. Each student can identify and describe social, historical, and cultural clues in dramatic texts and use research from a variety of sources to inform the acting in and the design for a production.
5. Each student can describe fundamental connections among text, acting, design, and technical aspects of productions and explain the role of the director in making decisions about these connections for productions.

B. Performance Statement: Each student can understand various cultural and historical contexts for theater.

Standards:

1. Each student can describe how the social and political environment, beliefs, customs, and arts of societies are evident in theater, film and electronic media about and from specific cultures and historical periods. Each student can explain the relationship between drama and its cultural and historical context.
2. Each student can explore major plays representative of various genres, cultures, and historical periods, including ancient cultures. Each student can recognize and describe archetypal characters, plots, and situations.
3. Each student can research the life and work of selected dramatic professionals from various cultures and historical periods.

C. Performance Statement: Each student shows perception and the ability to be critical and analytical about dramatic performances.

Standards:

1. Each student can describe the specific knowledge and skills brought to an individual performance by various collaborators and the audience.
2. Each student can discuss and evaluate his or her role and the role of others in the classroom rehearsals and productions.
3. Each student can describe and compare the creation and presentation of theater, film, and television.
4. Each student can understand the concept of genre and elements of dramatic structure such as exposition, tension or problem, crisis, and conclusion.
5. Each student can describe a theatrical event, using technical vocabulary and concepts, and present a point of view.

Drama Standards Upper Level

A. *Performance Statement:* Each student can show skill in the various roles of theater including playwright, technician, and actor.

Standards:

1. Playwright. Each student can use knowledge of dramatic elements and skills to create improvisations, scenarios, and scripted material for theater, film, and/or electronic media that communicate an intended meaning effectively.
2. Actors. Each student can create and sustain convincing characterizations based on effective use of classic and contemporary acting techniques and on analysis of dramatic texts and situations which considers the physical, emotional, and social dimensions of characters.
3. Director/Technician. Each student can understand the functions and uses of design and technical elements—such as scenery, properties, lighting, sound, costumes, and makeup. Each student can analyze texts from various perspectives to determine visual and aural qualities which will effectively convey an intended meaning. Each student can combine analytical and technical knowledge and skills in the collaborative development of scenery. Each student can operate technical equipment for classroom work.
4. Each student can locate and describe social, historical, and cultural references and contexts in exemplary dramatic texts. Each student can use this information to inform a range of artistic choices for improvised and scripted scene work.
5. Each student can describe the duties of producers, business managers, and stage managers. Each student can design appropriate promotional, business, and stage management plans for specific productions.

B. Performance Statement: Through research and analysis of texts and production in theater, film, and electronic media, each student can discuss the interaction between cultural and historical forces and artistic expression.

Standards:

1. Each student can describe relationships between theater and other cultural institutions in other cultures and historical periods. Each student can describe such aspects as relationships among religion, ritual, and theater; the connections between dramatic presentations and social and political thought; and the effect of culture and technology on the content and style of dramatic presentations.
2. Each student can describe the historical development of one or more aspects of theater.
3. Each student can compare and criticize with authority important texts and productions representative of various genres, cultures, and historical periods.
4. Each student can research and examine the lives and works of selected playwrights, actors, directors, and theatrical designers from various cultures and historical periods. Each student can draw connections between the artist's work and the cultural and historical period in which it was created.

C. Performance Statement: As a critical artist and a critical member of an audience, each student can perceive, analyze, and compare relationships between artistic intent and expressive means in all theatrical media including stage, film, radio, and video.

Standards:

1. Each student can analyze his or her own and other exemplary dramatic texts to establish and describe relationships among character, environment, genre, and style and the resulting shape of the drama. Each student can discuss a playwright's choices of devices for conveying ideas.
2. Each student can use analytical vocabularies and concepts to relate and compare individual responses to classroom and professional presentations. Each student can consider the relationship of text to production decisions and to audience response.
3. Each student can judge the quality of productions, can articulate own interpretation of the production's meaning, and defend the criticism coherently and logically. Each student can compare criticisms of the same work.

Music Standards Primary Level

A. Performance Statement: Each student can demonstrate the ability to create and perform music by singing, playing instruments, moving to music, and composing and improvising music.

Standards:

1. Singing. Each student can sing songs accurately and independently, on pitch, and in rhythm, alone or with a group, and with a clear, free tone. Each student can sing rounds, partner songs, and harmony.
2. Playing Instruments. Each student can play simple melodies, rhythms, and chords on classroom instruments (drum, recorder, autoharp, etc.).
3. Composing. Each student can create short pieces using conventional musical sounds and nontraditional sounds available in the classroom or body sounds (e.g. clapping, finger snapping); experiment imaginatively by altering pitch, tempo, timbre, and dynamics for expressive purposes; and create music to dramatize stories.
4. Improvising. Each student can create thoughtful alterations and variations to existing songs, and create “answers” to unfinished melodic phrases by singing or playing on classroom instruments.
5. Each student can respond to music and sound, particularly to meter and beat, by appropriate movements, such as clapping or walking; respond to changes in tempo, dynamics, pitch, rhythm, timbre, or style by changing movements appropriately. Each student can create patterns of movement to express their thoughts or feelings or to express what they hear in various musical works.
6. Each student can sing from memory a basic repertoire of at least two dozen folk and composed songs from the United States and from other regions of the world.
7. Each student can recognize and distinguish electronic and acoustic sounds and use a variety of electronic sounds to express musical ideas.

B. Performance Statement: Each student understands the cultural and historical context of music and can identify the influence of diverse heritages evident in the music of the United States (including African, European, and Latin American).

Standards:

1. Each student can distinguish between the music of today and the music of earlier periods, and determine whether particular works come from the same culture or different cultures.
2. Each student can identify the major musical characteristics of United States music, including its African, European, and Latin American elements.
3. Each student can identify well-known musical pieces and genres from different cultures and historical periods—for example American traditional songs, West African drumming, calypso, classical—and describe their purpose and meaning.

C. Performance Statement: Each student shows skill in listening and responding to music, can identify certain features of music, and can offer ideas about the music's meaning and purpose.

Standards:

1. Each student can identify specific musical events and features when listening to music and demonstrate musical perception in responding to music.
2. Each student can explain the effect of a composer's choices—such as the choice of instruments, key signature, and duration—and describe his or her response using appropriate music vocabulary—for example, melody, rhythm, harmony, tempo.
3. Each student can invent graphic symbols to notate music, so that it can be reproduced later, and use standard notational symbols to notate pitch, rhythm, dynamics, and other features.
4. Each student can recognize the basic features of unfamiliar music by studying the notation.
5. Each student can identify voices (such as male and female, high and low, and distinct individuals), types of band and orchestral instruments (strings, brass, etc.), a selection of non-western instruments, and identify structures such as call and response, theme and variations, opera, and concerto.

Music Standards Intermediate Level

A. Performance Statement: Each student can demonstrate the ability to create and perform music by singing, playing instruments, and composing and improvising music.

Standards:

1. Singing. Each student can sing accurately alone and with others, with a free tone, and with expressive qualities appropriate to the music. Each student can sing rounds, partner songs, songs with descants, and songs in three parts. Each student can correct errors in pitch or rhythm when they occur, demonstrate sensitivity to blend and balance, and respond to the conductor.
2. Playing Instruments. Each student can demonstrate a skill on a variety of classroom instruments (recorder, autoharp, mallet, keyboard, etc.) and play at least three chords on two or more instruments. Each student can play independently, play in groups demonstrating sensitivity to blend and balance, and respond to the gestures of a conductor.
3. Composing. Each student can compose simple pieces for at least one performance medium, using traditional or nontraditional sounds, including electronic (personal computers, sequencers, synthesizers, and drum machines). Each student can compose reflecting a knowledge of melody, rhythm, and harmony and showing growth in musical imagination and expression.
4. Improvising. Each student can spontaneously create simple rhythmic and harmonic accompaniments to live or recorded music and demonstrate originality and imagination in experimenting with variations in tempo, timbre, dynamics, and phrasing for expressive purposes.
5. Each student can sing from memory a repertoire of folk, art, and popular songs. On instruments. Each student can play a repertoire of diverse periods and styles including at least some works performed from memory. Each student can vary vocal and instrumental style and interpretation appropriately, depending on the type of music being performed.

B. Performance Statement: Each student can examine the cultural and historical context of music and show an understanding of major western and non-western works, and various musical periods and genres.

Standards:

1. Each student can identify by style, genre, composer, title and movement or section, if applicable, a repertoire of at least a dozen important works for various performance media, and explain briefly why each is considered exemplary.
2. Each student can classify by genre, form, and period a musical work presented aurally and give reasons for the classification.
3. Each student can explain the distinguishing musical and cultural characteristics of the Baroque, Classical, and Romantic periods and of at least two distinctive styles of the twentieth century outside the western art music tradition.
4. Each student can explain the rhythmic, melodic, harmonic, timbral, and other characteristics of a musical style in three or more distinctive world cultures; discuss the meaning and purpose of each style; and classify an unfamiliar piece of representative work according to its cultural origin.
5. Each student can identify various roles and functions musicians perform in American society and contrast them with the role of musicians in other cultures and historical periods.

C. Performance Statement: Each student can show skill at listening and responding to music, interpret the music's meaning and purpose, and judge the effectiveness of a performance in fulfilling its intended purpose.

Standards:

1. Each student can identify specific musical events while listening to movement-length work and create graphic symbols to map the work while listening in order to later report the nature and sequence of musical events.
2. Each student can describe the musical and expressive qualities of two or more differing interpretations of the same work, explain how they differ, and suggest what effect each has on the listener.
3. Each student can identify commonalities among music and other arts disciplines and connect music to other academic disciplines.

4. Each student can describe, evaluate, and discuss musical works, both in performance and in notation, paying particular attention to pitch, rhythm, harmony, as well as to their texture, formal structure, performance medium, and other salient features. Each student can demonstrate knowledge of scales, intervals, chords, and chord progressions and show competency with technical vocabulary.
5. Each student can sing or play simple melodies in the treble or bass clefs at sight; identify by name and function standard notation for pitch, rhythm, articulation, and dynamics; and accurately follow a single line of standard notation while listening to it performed.

Music Standards Upper Level

A. Performance Statement: Each student can demonstrate the ability to create and perform music by singing, playing instruments, composing and improvising.

Standards:

1. Singing. Each student can demonstrate good posture, good breath control, and basic technical skills in singing and can sing with good pitch, rhythm, diction, balance, blend, and interpretation. Each student can sing independently an appropriate part in an ensemble, with or without accompaniment, and with sensitivity to the gestures of a conductor.
2. Playing Instruments. Each student can play at least one instrument (band, folk, or electronic) well enough to perform in informal settings. Each student can play a part in an instrumental ensemble accurately and independently; demonstrate attention to pitch, rhythm, and interpretation; and show sensitivity to blend and balance, and to gestures of a conductor.
3. Composing. Each student can compose simple pieces for at least two contrasting media using personal computers and basic musical digital devices as appropriate.
4. Improvising. Each student can spontaneously create short, freestanding works, simple rhythmic and harmonic accompaniments, or melodic lines to music which is live or recorded, instrumental or vocal.
5. Each student can perform with expression and musicianship a varied repertoire of vocal and instrumental literature, performing from memory works of various genres, cultures, and periods. Each student can perform music of at least two contrasting styles with dynamics, phrasing, and expression appropriate to each.
6. Each student can orchestrate or arrange simple pieces for media other than those for which the pieces were written. Each student's work demonstrates knowledge of the ranges and potential of instruments, voices, and other media.

B. Performance Statement: Each student can describe and analyze the cultural, historical, social, economic, and aesthetic context in which various works were created.

Standards:

1. Each student can identify by genre, composer, title, and movement or section (if applicable) a repertoire of at least twenty exemplary works for various performance media, briefly state reasons why each is considered exemplary, and evaluate the quality and merits of each.
2. Each student can criticize and classify a musical work presented aurally and support his or her reasoning.
3. Each student can identify and explain the distinguishing musical and cultural characteristics of western art music—such as, Baroque, Classical, Romantic—and of four or more distinctive musical styles of the twentieth century, at least two of which are not in the western art music tradition. Each student can evaluate representative works for their merits as models.
4. Each student can identify and explain the distinguishing musical and cultural characteristics of a representative style of music from at least four distinctive cultures from outside the west. Each student can recognize aurally examples of music of those cultures and evaluate representative works for their merits as models.
5. Each student can explain various purposes of music in contemporary cultures and cite examples. Each student can identify various roles and functions musicians perform in society, cite representative individuals who function in those capacities, and describe their activities and achievements.

C. Performance Statement: Each student can listen and respond to music, analyze its meaning and purpose, and evaluate the quality and effectiveness of the work and/or performance.

Standards:

1. Each student can compare different interpretations of the same work, describe the musical and expressive qualities of the performances, and discuss the effectiveness of each with reference to melodic contour, harmonization, dynamics, tempo, instrumentation, register, or other expressive qualities.
2. Each student can demonstrate musical perception after listening to long movement-length works of music, identify specific musical events in that music, and describe in detail specific features of the work.

3. Each student can demonstrate a knowledge of scales, intervals, chords and chord progression and identify, in detail and by using the technical vocabulary of music, the musical devices and techniques used to provide unity and variety, repetition and contrast, and tension and resolution.
4. Each student can sight-read music with the difficulty of a simple hymn.
5. Each student can notate from dictation step-wise melodies, rhythmic patterns including quarter notes and eighth notes, and four-part harmonic patterns.
6. Each student can select for his or her personal performance and listening music of high quality relative to other works of the same genre and justify the selections.

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UPDATE AppleSeed Institute

Spring 1997 for Education Innovation

607 Boylston Street • Suite 400 • Boston, MA 02116
Telephone: (617) 536-6033 • Facsimile: (617) 536-6409

2501 M Street, NW • Suite 515 • Washington, DC 20037
Telephone: (202) 775-5826 • Facsimile: (202) 775-8549

AppleSeed Institute Formed

THE NON-PROFIT APPLESEED INSTITUTE FOR EDUCATION INNOVATION was founded in 1996 with a simple but profound mission: to increase the number of effective schools through innovation.

AppleSeed's founding group, comprised of Robert Gaudet, Jack McCarthy and Lex Towle, earned a track record for innovation and accomplishment through the successful organization, development, launch and expansion of Boston Renaissance Charter School.

AppleSeed Institute is prepared to act as a change agent where innovation can provide meaningful improvement in educational performance. Such is the case in the Nation's Capital, where AppleSeed is involved in a major public school restructuring effort.

Massachusetts is in the process of creating additional charter, pilot or experimental schools. AppleSeed's founders are exploring starting one or more new schools in the near future.

AppleSeed Institute is working closely with New American Schools Corporation and The Hudson Institute's Modern Red Schoolhouse to utilize their whole-school designs in the mission to increase the supply of effective schools through innovation.

Lessons Learned In Starting Urban Charters

Bob Gaudet and Jack McCarthy were founders of Boston Renaissance Charter School, the largest new charter school launched in the United States. Several lessons were learned as a result of that effort:

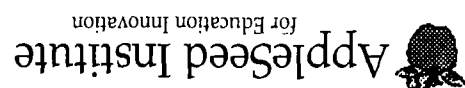
- ❖ Citizens can build new schools which are comprehensive in nature with scale.
- ❖ There is a demand among teachers to teach at innovative urban schools as evidenced by 800 plus resumes received for 40 positions.
- ❖ There is a strong demand among urban parents, transcending race and economic status, for innovative public education as evidenced by 2,200 applications for 630 seats.
- ❖ Business, government and civic groups can work effectively to innovate when efforts are focused on public policy priorities.



To AppleSeed Founders, Reading is Fundamental
Last Autumn, the three founders of AppleSeed Institute donated and presented gift certificates to students who had excelled at reading at the Boston Renaissance Charter School. The winning students had read the most books over the summer of anyone in the program. "Reading well is essential to success in school and life," said Lex Towle as he presented Barnes & Noble gift certificates to the winners. "We are happy to be able to contribute in this small but important way to encourage reading among young people."

Development Critical to AppleSeed's Success

As a not-for-profit, AppleSeed relies on philanthropic support from individuals, corporations and foundations for its operating expenses. AppleSeed's start-up, organization and development were underwritten by a small group of committed funders. Charter Members of AppleSeed Institute are funding our mission to increase the supply of effective schools through innovation. For information about how to become a Charter Member of AppleSeed Institute for Education Innovation, please call Betsy Lynch at (617) 536-6033 or Lex Towle at (202) 775-5826.



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AppleSeed Institute for Education Innovation is an independent, non-partisan, privately funded education institution.

AppleSeed's goal is to increase the number of effective schools. Effective schools are characterized by high expectations, clear standards, meaningful assessments, and solid student achievement.

Your contribution enables AppleSeed to advance and promote our projects to academic, business, civic, government and philanthropic decision makers.

☐ \$100 ☐ \$250 ☐ \$500 ☐ \$1,000 ☐ \$2,500 ☐ \$5,000 ☐ Other

Please make checks payable to: AppleSeed Institute for Education Innovation

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

The Institute is supported solely by contributions from individuals, corporations and foundations.
AppleSeed Institute has filed for non-profit, 501(c)(3) status.

AppleSeed Institute contributors receive:

- AppleSeed Update, our newsletter;
- The opportunity to exchange ideas at scheduled staff lunches; and
- Special invitations to small gatherings with prominent education innovators.

For more information on specific policy issues, please indicate your interest(s):

Standards &
Assessments

☐

Charter
Schools

☐

Other: _____

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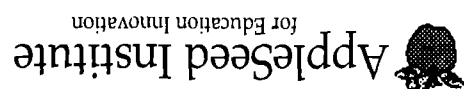


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