

Physical Science

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
1	Inquiry Process		
1.1	Formulate predictions, questions, or hypotheses based on observations. Evaluate appropriate		
1.1.PO 1	Evaluate scientific information for relevance to a given problem.		
1.1.PO 2	Develop questions from observations that transition into testable hypotheses.	Scientific Nature	Section B Questions and Hypotheses
1.1.PO 3	Formulate a testable hypothesis.	Scientific Nature	Section B Questions and Hypotheses
1.1.PO 4	Predict the outcome of an investigation based on prior evidence, probability, and/or modeling (not guessing or inferring).		
1.2	Design and conduct controlled investigations.		
1.2.PO 1	Demonstrate safe and ethical procedures (e.g., use and care of technology, materials, organisms) and behavior in all science inquiry.	Scientific Inquiry	Section A Safety During Investigations
1.2.PO 2	Identify the resources needed to conduct an investigation.	Scientific Inquiry	Section A Experimental Design
1.2.PO 3	Design an appropriate protocol (written plan of action) for testing a hypothesis:		
1.2.PO 3.a	Identify dependent and independent variables in a controlled investigation.	Scientific Inquiry	Section A Independent and dependent Variables

Physical Science

1.2.PO 3.b	Determine an appropriate method for data collection (e.g., using balances, thermometers, microscopes, spectrophotometer, using qualitative changes).	Scientific Nature	Section B Experiments and Data
1.2.PO 3.c	Determine an appropriate method for recording data (e.g., notes, sketches, photographs, videos, journals (logs), charts, computers/calculators).	Scientific Inquiry	Section C The Importance of Organizing Data
1.2.PO 4	Conduct a scientific investigation that is based on a research design.	Scientific inquiry	Sections A-E Unit Project: Scientific Inquiry
1.2.PO 5	Record observations, notes, sketches, questions, and ideas using tools such as journals, charts, graphs, and computers.	Scientific inquiry	Sections A-E Unit Project: Scientific Inquiry
1.3	Evaluate experimental design, analyze data to explain results and to propose further investigations. Design models.		
1.3.PO 1	Interpret data that show a variety of possible relationships between variables, including:		
1.3.PO 1.a	positive relationship	Scientific Inquiry	Section D Recognizing Relationships Between Variables

Physical Science

1.3.PO 1.b	negative relationship	Scientific Inquiry	Section D Recognizing Relationships Between Variables
1.3.PO 1.c	no relationship	Scientific Inquiry	Section D Recognizing Relationships Between Variables
1.3.PO 2	Evaluate whether investigational data support or do not support the proposed hypothesis.	Scientific Inquiry	Section D Drawing Conclusions
1.3.PO 3	Critique reports of scientific studies (e.g., published papers, student reports).		
1.3.PO 4	Evaluate the design of an investigation to identify possible sources of procedural error, including:		
1.3.PO 4.a	sample size	Scientific Inquiry	Section E Evaluating an Experiment Design
1.3.PO 4.b	trials	Scientific Inquiry	Section E Evaluating an Experiment Design
1.3.PO 4.c	controls	Scientific Inquiry	Section E Evaluating an Experiment Design

Physical Science

1.3.PO 4.d	analyses	Scientific Inquiry	Section E Evaluating an Experiment Design
1.3.PO 5	Design models (conceptual or physical) of the following to represent "real world" scenarios:		
1.3.PO 5.a	carbon cycle		
1.3.PO 5.b	water cycle	Matter, Energy and Change	Section B Changes in State Case Study: The Water Cycle
1.3.PO 5.c	phase change	Matter, Energy and Change	Section B Changes in State Case Study: The Water Cycle
1.3.PO 5.d	collisions		
1.3.PO 6	Use descriptive statistics to analyze data, including:		

Physical Science

1.3.PO 6.a	mean		
1.3.PO 6.b	frequency		
1.3.PO 6.c	range		
1.3.PO 7	Propose further investigations based on the findings of a conducted investigation.		
1.4	Communicate results of investigations.		
1.4.PO 1	For a specific investigation, choose an appropriate method for communicating the results.	Scientific Inquiry	Section E Unit Project: Scientific Inquiry
1.4.PO 2	Produce graphs that communicate data.	Scientific Inquiry	Section C Constructing Tables and Graphs

Physical Science

1.4.PO 3	Communicate results clearly and logically.	Scientific Inquiry	Section E Unit Project: Scientific Inquiry
1.4.PO 4	Support conclusions with logical scientific arguments.	Scientific Inquiry	Section E Unit Project: Scientific Inquiry
2	History and Nature of Science		
2.1	Identify individual, cultural, and technological contributions to scientific knowledge.		
2.1.PO 1	Describe how human curiosity and needs have influenced science, impacting the quality of life worldwide.	Scientific Nature	Section A Science and Society
2.1.PO 2	Describe how diverse people and/or cultures, past and present, have made important contributions to scientific innovations.	Scientific Nature	Section A Discussion: Famous Scientists and Discoveries
2.1.PO 3	Analyze how specific changes in science have affected society.	Scientific Nature	Section A Scientific Advantages
2.1.PO 4	Analyze how specific cultural and/or societal issues promote or hinder scientific advancements.	Scientific Nature	Section D Challenges to Geocentrism

Physical Science

2.2	Understand how scientists evaluate and extend scientific knowledge.		
2.2.PO 1	Specify the requirements of a valid, scientific explanation (theory), including that it be:		
2.2.PO 1.a	logical	Scientific Nature	Section E A Closer Look at Laws and Theories
2.2.PO 1.b	subject to peer review	Scientific Nature	Section E A Closer Look at Laws and Theories
2.2.PO 1.c	public	Scientific Nature	Section E A Closer Look at Laws and Theories
2.2.PO 1.d	respectful of rules of evidence	Scientific Nature	Section E A Closer Look at Laws and Theories
2.2.PO 2	Explain the process by which accepted ideas are challenged or extended by scientific innovation.	Scientific Nature	Section E Some Scientific Discoveries That Have Challenged Society
2.2.PO 3	Distinguish between pure and applied science.		

Physical Science

2.2.PO 4	Describe how scientists continue to investigate and critically analyze aspects of theories.	Scientific Nature	Section E A Closer Look at Laws and Theories
3	Science in Personal and Social Perspectives		
3.1	Describe the interactions between human populations, natural hazards, and the environment.		
3.1.PO 1	Evaluate how the processes of natural ecosystems affect, and are affected by, humans.		
3.1.PO 2	Describe the environmental effects of the following natural and/or human-caused hazards:		
3.1.PO 2.a	flooding		
3.1.PO 2.b	drought		
3.1.PO 2.c	earthquakes		

Physical Science

3.1.PO 2.d	fires		
3.1.PO 2.e	pollution		
3.1.PO 2.f	extreme weather		
3.1.PO 3	Assess how human activities (e.g., clear cutting, water management, tree thinning) can affect the potential for hazards.		
3.1.PO 4	Evaluate the following factors that affect the quality of the environment:		
3.1.PO 4.a	urban development		
3.1.PO 4.b	smoke	Matter, Energy and Change	Section B Chemical Changes Case Study: Acid Rain
3.1.PO 4.c	volcanic dust		

Physical Science

3.1.PO 5	Evaluate the effectiveness of conservation practices and preservation techniques on environmental quality and biodiversity.		
3.2	Develop viable solutions to a need or problem.		
3.2.PO 1	Analyze the costs, benefits, and risks of various ways of dealing with the following needs or problems:		
3.2.PO 1.a	various forms of alternative energy		
3.2.PO 1.b	storage of nuclear waste	Chemical Reactions	Section C Nuclear Waste
3.2.PO 1.c	abandoned mines		
3.2.PO 1.d	greenhouse gases		
3.2.PO 1.e	hazardous wastes		

Physical Science

3.2.PO 2	Recognize the importance of basing arguments on a thorough understanding of the core concepts and principles of science and technology.		
3.2.PO 3	Support a position on a science or technology issue.		
3.2.PO 4	Analyze the use of renewable and nonrenewable resources in Arizona:		
3.2.PO 4.a	water		
3.2.PO 4.b	land		
3.2.PO 4.c	soil		
3.2.PO 4.d	minerals		
3.2.PO 4.e	air		

Physical Science

3.2.PO 5	Evaluate methods used to manage natural resources (e.g., reintroduction of wildlife, fire ecology).		
3.3	Analyze factors that affect human populations.		
3.3.PO 1	Analyze social factors that limit the growth of a human population, including:		
3.3.PO 1.a	affluence		
3.3.PO 1.b	education		
3.3.PO 1.c	access to health care		
3.3.PO 1.d	cultural influences		
3.3.PO 2	Describe biotic (living) and abiotic (nonliving) factors that affect human populations.		

Physical Science

3.3.PO 3	Predict the effect of a change in a specific factor on a human population.		
4	Life Science		
4.1	Understand the role of the cell and cellular processes.		
4.1.PO 1	Describe the role of energy in cellular growth, development, and repair.		
4.1.PO 2	Compare the form and function of prokaryotic and eukaryotic cells and their cellular components.		
4.1.PO 3	Explain the importance of water to cells.		
4.1.PO 4	Analyze mechanisms of transport of materials (e.g., water, ions, macromolecules) into and out of cells:		
4.1.PO 4.a	passive transport		

Physical Science

4.1.PO 4.b	active transport		
4.1.PO 5	Describe the purposes and processes of cellular reproduction.		
4.2	Understand the molecular basis of heredity and resulting genetic diversity.		
4.2.PO 1	Analyze the relationships among nucleic acids (DNA, RNA), genes, and chromosomes.		
4.2.PO 2	Describe the molecular basis of heredity, in viruses and living things, including DNA replication and protein synthesis.		
4.2.PO 3	Explain how genotypic variation occurs and results in phenotypic diversity.		
4.2.PO 4	Describe how meiosis and fertilization maintain genetic variation.		
4.3	Analyze the relationships among various organisms and their environment.		

Physical Science

4.3.PO 1	Identify the relationships among organisms within populations, communities, ecosystems, and biomes.		
4.3.PO 2	Describe how organisms are influenced by a particular combination of biotic (living) and abiotic (nonliving) factors in an environment.		
4.3.PO 3	Assess how the size and the rate of growth of a population are determined by birth rate, death rate, immigration, emigration, and carrying capacity of the environment.		
4.4	Understand the scientific principles and processes involved in biological evolution.		
4.4.PO 1	Identify the following components of natural selection, which can lead to speciation:		
4.4.PO 1.a	potential for a species to increase its numbers		
4.4.PO 1.b	genetic variability and inheritance of offspring due to mutation and recombination of genes		
4.4.PO 1.c	finite supply of resources required for life		

Physical Science

4.4.PO 1.d	selection by the environment of those offspring better able to survive and produce offspring		
4.4.PO 2	Explain how genotypic and phenotypic variation can result in adaptations that influence an organism's success in an environment.		
4.4.PO 3	Describe how the continuing operation of natural selection underlies a population's ability to adapt to changes in the environment and leads to biodiversity and the origin of new species.		
4.4.PO 4	Predict how a change in an environmental factor (e.g., rainfall, habitat loss, non-native species) can affect the number and diversity of species in an ecosystem.		
4.4.PO 5	Analyze how patterns in the fossil record, nuclear chemistry, geology, molecular biology, and geographical distribution give support to the theory of organic evolution through natural selection over billions of years and the resulting present day biodiversity.		
4.4.PO 6	Analyze, using a biological classification system (i.e., cladistics, phylogeny, morphology, DNA analysis), the degree of relatedness among various species.		
4.5	(Including Human Systems) Understand the organization of living systems, and the role of energy within those systems.		
4.5.PO 1	Compare the processes of photosynthesis and cellular respiration in terms of energy flow, reactants, and products.		

Physical Science

4.5.PO 2	Describe the role of organic and inorganic chemicals (e.g., carbohydrates, proteins, lipids, nucleic acids, water, ATP) important to living things.		
4.5.PO 3	Diagram the following biogeochemical cycles in an ecosystem:		
4.5.PO 3.a	water		
4.5.PO 3.b	carbon		
4.5.PO 3.c	nitrogen		
4.5.PO 4	Diagram the energy flow in an ecosystem through a food chain.		
4.5.PO 5	Describe the levels of organization of living things from cells, through tissues, organs, organ systems, organisms, populations, and communities to ecosystems.		
5	Physical Science		

Physical Science

5.1	Understand physical, chemical, and atomic properties of matter.		
5.1.PO 1	Describe substances based on their physical properties.		
5.1.PO 2	Describe substances based on their chemical properties.		
5.1.PO 3	Predict properties of elements and compounds using trends of the periodic table (e.g., metals, non-metals, bonding - ionic/covalent).	Elements, Compounds and Mixtures	Section B Trends on the Periodic Table
5.1.PO 4	Separate mixtures of substances based on their physical properties.	Elements, Compounds and Mixtures	Section E Separating Mixtures
5.1.PO 5	Describe the properties of electric charge and the conservation of electric charge.	Elements, Compounds and Mixtures	Section C It's All About Electrons
5.1.PO 6	Describe the following features and components of the atom:		
5.1.PO 6.a	protons	Elements, Compounds and Mixtures	Section A The Nuclear Atom

Physical Science

5.1.PO 6.b	neutrons	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 6.c	electrons	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 6.d	mass	Elements, Compounds and Mixtures	Section B Characterizing Elements
5.1.PO 6.e	number and type of particles	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 6.f	structure	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 6.g	organization	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 7	Describe the historical development of models of the atom.	Elements, Compounds and Mixtures	Section A The Nuclear Atom
5.1.PO 8	Explain the details of atomic structure (e.g., electron configuration, energy levels, isotopes).	Elements, Compounds and Mixtures	Section A The Nuclear Atom

Physical Science

5.2	Analyze relationships between forces and motion.		
5.2.PO 1	Determine the rate of change of a quantity (e.g., rate of erosion, rate of reaction, rate of growth, velocity).	Energy in Motion	Section A Velocity
5.2.PO 2	Analyze the relationships among position, velocity, acceleration, and time:		
5.2.PO 2.a	graphically	Energy in Motion	Section A Velocity and Acceleration Graphs
5.2.PO 2.b	mathematically		
5.2.PO 3	Explain how Newton's 1st Law applies to objects at rest or moving at constant velocity.	Energy in Motion	Section C Newton's First Law of Motion
5.2.PO 4	Using Newton's 2nd Law of Motion, analyze the relationships among the net force acting on a body, the mass of the body, and the resulting acceleration:		
5.2.PO 4.a	graphically		

Physical Science

5.2.PO 4.b	mathematically	Energy in Motion	Section C Newton's Second Law of Motion
5.2.PO 5	Use Newton's 3rd Law to explain forces as interactions between bodies (e.g., a table pushing up on a vase that is pushing down on it; an athlete pushing on a basketball as the ball pushes back on her).	Energy in Motion	Section C Newton's Third Law of Motion
5.2.PO 6	Analyze the two-dimensional motion of objects by using vectors and their components.	Energy in Motion	Section B Force Vectors
5.2.PO 7	Give an example that shows the independence of the horizontal and vertical components of projectile motion.		
5.2.PO 8	Analyze the general relationships among force, acceleration, and motion for an object undergoing uniform circular motion.		
5.2.PO 9	Represent the force conditions required to maintain static equilibrium.		
5.2.PO 10	Describe the nature and magnitude of frictional forces.		
5.2.PO 11	Using the Law of Universal Gravitation, predict how the gravitational force will change when the distance between two masses changes or the mass of one of them changes.	Energy in Motion	Section B Gravity

Physical Science

5.2.PO 12	Using Coulomb's Law, predict how the electrical force will change when the distance between two point charges changes or the charge of one of them changes.	Electricity and Magnetism	Section A Coulomb's Law
5.2.PO 13	Analyze the impulse required to produce a change in momentum.		
5.2.PO 14	Quantify interactions between objects to show that the total momentum is conserved in both collision and recoil situations.		
5.3	Understand ways that energy is conserved, stored, and transferred.		
5.3.PO 1	Describe the following ways in which energy is stored in a system:		
5.3.PO 1.a	Mechanical	Matter, Energy and Change	Section C The Types of Energy
5.3.PO 1.b	Electrical	Matter, Energy and Change	Section C The Types of Energy
5.3.PO 1.c	Chemical	Matter, Energy and Change	Section C The Types of Energy

Physical Science

5.3.PO 1.d	Nuclear	Matter, Energy and Change	Section C The Types of Energy
5.3.PO 2	Describe various ways in which energy is transferred from one system to another (e.g., mechanical contact, thermal conduction, electromagnetic radiation.)	Matter, Energy and Change	Section C Heat Transfer
5.3.PO 3	Recognize that energy is conserved in a closed system.	Matter, Energy and Change	Section D The Law of Conservation of Energy
5.3.PO 4	Calculate quantitative relationships associated with the conservation of energy.	Matter, Energy and Change	Section D A Closer Look at Energy Efficiency
5.3.PO 5	Analyze the relationship between energy transfer and disorder in the universe (2nd Law of Thermodynamics).		
5.3.PO 6	Distinguish between heat and temperature.		
5.3.PO 7	Explain how molecular motion is related to temperature and phase changes.	Matter, Energy and Change	Section B Kinetic Theory of Matter
5.4	Investigate relationships between reactants and products in chemical reactions.		

Physical Science

5.4.PO 1	Apply the law of conservation of matter to changes in a system.	Chemical Reactions	Section B Conservation of Matter
5.4.PO 2	Identify the indicators of chemical change, including formation of a precipitate, evolution of a gas, color change, absorption or release of heat energy.		
5.4.PO 3	Represent a chemical reaction by using a balanced equation.	Chemical Reactions	Section B Balancing a Chemical Reaction
5.4.PO 4	Distinguish among the types of bonds (i.e., ionic, covalent, metallic, hydrogen bonding).		
5.4.PO 5	Describe the mole concept and its relationship to Avogadro's number.		
5.4.PO 6	Solve problems involving such quantities as moles, mass, molecules, volume of a gas, and molarity using the mole concept and Avogadro's number.		
5.4.PO 7	Predict the properties (e.g., melting point, boiling point, conductivity) of substances based upon bond type.		
5.4.PO 8	Quantify the relationships between reactants and products in chemical reactions (e.g., stoichiometry, equilibrium, energy transfers).	Chemical Reactions	Section B Chemical Reactions and Energy

Physical Science

5.4.PO 9	Predict the products of a chemical reaction using types of reactions (e.g., synthesis, decomposition, replacement, combustion).	Chemical Reactions	Section A Types of Reactions
5.4.PO 10	Explain the energy transfers within chemical reactions using the law of conservation of energy.	Chemical Reactions	Section B Law of Conservation of Energy
5.4.PO 11	Predict the effect of various factors (e.g., temperature, concentration, pressure, catalyst) on the equilibrium state and on the rates of chemical reaction.		
5.4.PO 12	Compare the nature, behavior, concentration, and strengths of acids and bases.	Elements, Compounds and Mixtures	Section D What are Acids and Bases?
5.4.PO 13	Determine the transfer of electrons in oxidation/reduction reactions.		
5.5	Understand the interactions of energy and matter.		
5.5.PO 1	Describe various ways in which matter and energy interact (e.g., photosynthesis, phase change).	Matter, Energy and Change	Section B Kinetic Theory of Matter
5.5.PO 2	Describe the following characteristics of waves:		

Physical Science

5.5.PO 2.a	wavelength	Waves	Section A What is a Wave?
5.5.PO 2.b	frequency	Waves	Section A Frequency and Period
5.5.PO 2.c	period	Waves	Section A Frequency and Period
5.5.PO 2.d	amplitude	Waves	Section A Amplitude and Energy
5.5.PO 3	Quantify the relationships among the frequency, wavelength, and the speed of light.		
5.5.PO 4	Describe the basic assumptions of kinetic molecular theory.	Matter, Energy and Change	Section B Kinetic Theory of Matter
5.5.PO 5	Apply kinetic molecular theory to the behavior of matter (e.g., gas laws).	Matter, Energy and Change	Section B Kinetic Theory of Matter
5.5.PO 6	Analyze calorimetric measurements in simple systems and the energy involved in changes of state.		

Physical Science

5.5.PO 7	Explain the relationship between the wavelength of light absorbed or released by an atom or molecule and the transfer of a discrete amount of energy.		
5.5.PO 8	Describe the relationship among electric potential, current, and resistance in an ohmic system.	Electricity and Magnetism	Section B Ohm's Law
5.5.PO 9	Quantify the relationships among electric potential, current, and resistance in an ohmic system.	Electricity and Magnetism	Section B Ohm's Law
6	Earth and Space Science		
6.1	Analyze the interactions between the Earth's structures, atmosphere, and geochemical cycles.		
6.1.PO 1	Identify ways materials are cycled within the earth system (i.e., carbon cycle, water cycle, rock cycle).		
6.1.PO 2	Demonstrate how dynamic processes such as weathering, erosion, sedimentation, metamorphism, and orogenesis relate to redistribution of materials within the earth system.		
6.1.PO 3	Explain how the rock cycle is related to plate tectonics.		

Physical Science

6.1.PO 4	Demonstrate how the hydrosphere links the biosphere, lithosphere, cryosphere, and atmosphere.		
6.1.PO 5	Describe factors that impact current and future water quantity and quality including surface, ground, and local water issues.		
6.1.PO 6	Analyze methods of reclamation and conservation of water.		
6.1.PO 7	Explain how the geochemical processes are responsible for the concentration of economically valuable minerals and ores in Arizona and worldwide.		
6.2	Understand the relationships between the Earth's land masses, oceans, and atmosphere.		
6.2.PO 1	Describe the flow of energy to and from the Earth.		
6.2.PO 2	Explain the mechanisms of heat transfer (convection, conduction, radiation) among the atmosphere, land masses, and oceans.		
6.2.PO 3	Distinguish between weather and climate.		

Physical Science

6.2.PO 4	Demonstrate the relationship between the Earth's internal convective heat flow and plate tectonics.		
6.2.PO 5	Demonstrate the relationships among earthquakes, volcanoes, mountain ranges, mid-oceanic ridges, deep sea trenches, and tectonic plates.		
6.2.PO 6	Distinguish among seismic S, P, and surface waves.		
6.2.PO 7	Analyze the seismic evidence (S and P waves) used to determine the structure of the Earth.		
6.2.PO 8	Describe how radioactive decay maintains the Earth's internal temperature.		
6.2.PO 9	Explain the effect of heat transfer on climate and weather.		
6.2.PO 10	Demonstrate the effect of the Earth's rotation (i.e., Coriolis effect) on the movement of water and air.		
6.2.PO 11	Describe the origin, life cycle, and behavior of weather systems (i.e., air mass, front, high and low systems, pressure gradients).		

Physical Science

6.2.PO 12	Describe the conditions that cause severe weather (e.g., hurricanes, tornadoes, thunderstorms).		
6.2.PO 13	Propose appropriate safety measures that can be taken in preparation for severe weather.		
6.2.PO 14	Analyze how weather is influenced by both natural and artificial earth features (e.g., mountain ranges, bodies of water, cities, air pollution).		
6.2.PO 15	List the factors that determine climate (e.g., altitude, latitude, water bodies, precipitation, prevailing winds, topography).		
6.2.PO 16	Explain the causes and/or effects of climate changes over long periods of time (e.g., glaciation, desertification, solar activity, greenhouse effect).		
6.2.PO 17	Investigate the effects of acid rain, smoke, volcanic dust, urban development, and greenhouse gases, on climate change over various periods of time.		
6.3	Analyze the factors used to explain the history and evolution of the Earth.		
6.3.PO 1	Describe the scientific theory of the origin of the solar system (solar nebular hypothesis).		

Physical Science

6.3.PO 2	Describe the characteristics, location, and motions of the various kinds of objects in our solar system, including the Sun, planets, satellites, comets, meteors, and asteroids.		
6.3.PO 3	Explain the phases of the Moon, eclipses (lunar and solar), and the interaction of the Sun, Moon, and Earth (tidal effect).		
6.3.PO 4	Interpret a geologic time scale.		
6.3.PO 5	Distinguish between relative and absolute geologic dating techniques.		
6.3.PO 6	Investigate scientific theories of how life originated on Earth (high temperature, low oxygen, clay catalyst model).		
6.3.PO 7	Describe how life on Earth has influenced the evolution of the Earth's systems.		
6.3.PO 8	Sequence major events in the Earth's evolution (e.g., mass extinctions, glacial episodes) using relative and absolute dating data.		
6.3.PO 9	Analyze patterns in the fossil record related to the theory of organic evolution.		

Physical Science

6.4	Analyze the factors used to explain the origin and evolution of the universe.		
6.4.PO 1	Describe the Big Bang Theory as an explanation for the origin of the universe.	The Universe	Section A The Origin of the Universe
6.4.PO 2	Describe the fusion process that takes place in stars.	The Universe	Section B A Star is Born
6.4.PO 3	Analyze the evolution of various types of stars using the Hertzsprung-Russell (HR) diagram.	The Universe	Section B Reading HR Diagrams
6.4.PO 4	Compare the evolution (life cycles) of stars of different masses (low and high mass).	The Universe	Section B Death of Low Mass Stars Death of High Mass Stars
6.4.PO 5	Explain the formation of the light elements in stars and the heavier elements (what astronomers call "metals") in supernova explosions.	The Universe	Section B Star Maturity
6.4.PO 6	Explain the evolution and life cycles of galaxies.		