Visions Unlimited Academy
Curriculum Map Science All Grades

Kindergarten

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Observe, ask questions, and make predictions 1-4	Observations And Predictions	What do you think will happen?	Strand 1 Concept 1 PO1 observe using senses, PO2 ask questions, PO3 predict results of investigation	Classroom performance, observation	Modeling, demonstrations, manipulation of scientific objects	Science materials, paper, writing instruments
Participate in planning and conducting investigations, and recording data 1-4	Science Experiments	What do we need to used find this information out? How do we use the tools? What do we do with this information?	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 guided investigations, PO3 simple measurements	Classroom performance, observation	Modeling, demonstrations, manipulation of scientific objects	Science materials, tools, journals
Organize and analyze data; compare to predictions 1-4	Classifying	What makes these things similar/ different? How do these things go together?	Strand 1 Concept 3 PO1 organize according to characteristics, PO2 compare objects	Classroom performance, observation	Modeling, demonstrations, manipulation of scientific objects	Rocks, shells, specimens
Communicate results of investigations 1-4	Inquiry	What happened when you tried that? What does that mean?	Strand 1 Concept 4 PO1 communicate observations, PO2 communicate with others	Report rubrics, oral & written presentations	Modeling, demonstrations, examples of science reports	Science materials, science tools, paper, writing instruments
Identify individual and cultural contributions to scientific knowledge 1-4	History & Nature of Science	How does a (various professions) use science? Who discovered…? How do we know that…?	Strand 2 Concept 1 PO1 science in daily life, PO2 important contributions to science	Oral discussion, class participation	Discussion, matching games, pretending, teacher presentation	Pictures of scientists, descriptions of scientific jobs, biographies, nonfiction text on inventions

Understand the impact of technology 1-4	Science and Technology in Society	How does technology help us discover?	Strand 3 Concept 2 PO1 describe how tools make things easier	Oral discussion, participation in class discussion	Modeling, discussion, text	Thinkfinity, text, pictures, paper
Understand that basic structures in plants and animals serve a function 1	Life Science Organisms	How do we know if something is living or not? What do living things need to survive?	Strand 4 Concept 1 PO1 living & nonliving things, PO2 human body parts, PO3 5 senses and related body parts,	Class participation, oral discussion, classification activities, science projects	Science project, classification activities, teacher presentation	Pictures / objects that are living or nonliving, seeds, class pets, nonfiction texts
Understand the life cycles of plants and animals 1	Life Science Life Cycles	What will this creature grow to look/ act like?	Strand 4 Concept 2 PO1 offspring resemble parents	Science projects, matching activities, class participation	Matching activities, science projects	Pictures of adult/ baby animals, insects, plants, etc., materials for science explorations
Understand the relationships among various organisms and their environment 1	Life Science Organisms & Environment	How does this help the animal/ plant survive?	Strand 4 Concept 3 PO1 plants & animals in local environment, PO2 needs of plants & animals, PO3 changes in system	Oral participation, matching activities, oral recall	Discussion, teacher presentation, science project	Pictures of animals & plants, science exploration materials & specimens
Classify objects and materials by their observable properties 2	Physical Science: Properties of Objects	How do these objects fit together? What group does that object go in?	Strand 5 Concept 1 PO1 identify observable properties, PO2 compare objects	Oral participation, matching, Recognition	Discussion, modeling,	Rocks, leaves, pictures, shells

Understand spatial relationships and the way objects move 2	Physical Science: Position & Motion	Where is (object) in relation to (other Object)?	Strand 5 Concept 2 PO1 spatial relationships	Classroom performance, observation, oral recall	Discussion, modeling, demonstration, manipulating objects	Internet, paper, rubber bands, magnets
Investigate different forms of energy 2	Physical Science: Energy & Magnetism	How can we make this object move?	Strand 5 Concept 3 PO1 push & pull, PO2 forces can make things move without touching them, PO3 sort by magnetism, PO4 everyday uses for magnets	Classroom performance, observation, oral recall	Discussion, modeling, demonstration, manipulating objects	Magnets, metal & non-metal objects
Identify the basic properties of Earth materials 3	Earth Science: Earth Materials	What is our Earth made of?	Strand 6 Concept 1 PO1 basic Earth materials, PO2 compare physical properties of Earth materials, PO3 classify as natural or man-made, PO4 ways materials can be reused or recycled	Oral presentation, classroom performance, observation	Discussion, interactions with rocks, soil, & water	Texts about Earth and Earth materials
Understand characteristics of weather conditions and climate 3	Earth Science: Changes in Earth & Sky	How is the weather and what do you think it will be like tomorrow? How does the weather affect you?	Strand 6 Concept 3 PO1 temperature, wind, precipitation, storms, PO2 observable changes in weather, PO3 affects of weather	Discussions, charting and writing	Interaction, modeling, reading	Books, thermometer, weather crafts, chart paper

Visions Unlimited Academy
Curriculum Map
Science Grade One

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Observe, ask questions, and make predictions 1-4	Observations and predictions	What are you wondering about…?	Strand 1 Concept 1 PO1 compare using senses, PO2 ask questions, PO3 predict results of investigation	Oral & written questions by students	Modeling, demonstrations, discussion	Science materials & literature
Participate in planning and conducting investigations, and recording data 1-4	Scientific discovery and the tools we use.	How can we discover…? What tools will help us find the information we want?	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 guided investigations, PO3 use tools to measure, PO4 Record data from guided investigations in an organized & appropriate format	Classroom performance, observation, science projects	Modeling, demonstrations, discussion, teacher presentation	Scales, rulers, magnifying glasses, thermometers, balances, chart paper, science journal
Organize and analyze data; compare to predictions 1-4	Science Inquiry	How did the data compare to the predictions?	Strand 1 Concept 3 PO1 organize according to characteristics, PO2 compare results to prediction	Classroom performance, written data and predictions	Modeling, discussions, examples of data collection	Science Journal, graphing paper, charts
Communicate results of investigations 1-4	Scientific presentation	What happened when you tried that? What does that mean?	Strand 1 Concept 4 PO1 communicate results of investigation, PO2 communicate with others	Report rubrics, oral & written presentations	Modeling, demonstrations, examples of science reports	Science materials, science tools, paper, writing instruments

Identify individual and cultural contributions to scientific knowledge 1-4	History & Nature of Science	How does a (various professions) use science? Who discovered…? How do we know that…?	Strand 2 Concept 1 PO1 science in daily life, PO2 important contributions to science	Oral discussion, class participation	Discussion, matching games, pretending, teacher presentation	Pictures of scientists, descriptions of scientific jobs, biographies, nonfiction texts on inventions
Understand the impact of technology 1-4	Science and Technology in Society	What forms of technology can be used in Science?	Strand 3 Concept 2 PO1 technologies people use, PO2 tools help make better observations & measurements	Oral discussion, research paper	Oral discussion, research on Thinkfinity.com	Magnifying glasses, thermometers, microscopes
Understand that basic structures in plants and animals serve a function 1	Life Science Organisms	How do animals help our surroundings? (Photosynthesis)	Strand 4 Concept 1 PO1 characteristics of living things, PO2 features of living things, PO3 similarities & differences among groups	Oral discussion, research paper, experiment	Discussion, modeling, perform experiment	Books, Internet, science materials
Understand the life cycles of plants and animals 1	Life Science Life Cycles	What is the process of plant life? How do animals live?	Strand 4 Concept 2 PO1 stages of human life, PO2 similarities & differences between animals & their parents	Discussion, experiment, demonstration	Interaction, modeling, examples of Life Cycle	Internet, science materials, Thinkfinity
Understand the relationships among various organisms and their environment 1	Life Science Organisms & Environment	How does this affect the plant or animal? Does it help or hinder?	Strand 4 Concept 3 PO1 plants & animals in local environment, PO2 compare habitats, PO3 dependent interactions among plants & animals	Written research, presentation of data, discussion	Modeling of research, discussion, text	Text, internet, science materials, graph charts

Classify objects and materials by their observable properties 2	Physical Science: Properties of Objects	How do these objects fit together? What group does that object go in?	Strand 5 Concept 1 PO1 identify observable properties, PO2 classify as solid or liquid	Matching, discussion, charts	Discussion, class interaction, modeling	Solids, liquids, science materials
Understand spatial relationships and the way objects move 2	Physical Science: Position & Motion	Where is (object) in relation to (other Object)?	Strand 5 Concept 2 PO1 demonstrate ways objects move	Discussion, demonstrate,	Modeling, experiments, discussions	Rubber bands, magnets, Internet
Identify the basic properties of Earth materials 3	Earth Science: Earth Materials	What is our Earth made of?	Strand 6 Concept 1 PO1 describe basic Earth materials, PO2 compare physical properties of Earth materials, PO3 describe uses of Earth materials, PO4 identify natural resources, PO5 conserve natural resources	Oral presentation, classroom performance, observation	Discussion, interactions with rocks, soil, & water	Texts about Earth and Earth materials
Identify objects in the sky 3	Earth Science: Objects in the Sky	What do you see in the sky? What can't you see in the sky and why?	Strand 6 Concept 2 PO1 sun is natural source of heat & light, PO2 celestial objects & transient objects, PO3 observable changes in the sky	Observation, oral communication, presentation	Pictures, text, research internet	Thinkfinity, pictures, text

Understand characteristics of weather conditions and climate 3	Earth Science: Changes in Earth & Sky	How does the weather affect you and your surroundings? Predict what tomorrows weather will be like?	Strand 6 Concept 3 PO1 seasonal weather patterns, PO2 affects of weather on daily activities	Presentation, charts, written communication	Discussion, presentation, modeling	Internet, science journal, pictures, Thinkfinity

Visions Unlimited Academy
Curriculum Map
Science Grade Two

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Observe, ask questions, and make predictions 1-4	Inquiry	To understand how this (concept) works what do we need to know? Can you guess the outcome?	Strand 1 Concept 1 PO1 formulate questions, PO2 predict results of investigation	Science fair project with rubric; various experiments	Shared Reading; discussion; science experimentation	Big Books, Information texts
Participate in planning and conducting investigations, and recording data 1-4	Inquiry	What do we need to think about as we conduct this experiment?	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 guided investigations, PO3 use tools to measure, PO4 Record data from guided investigations in an organized & appropriate format	Science fair project with rubric; various experiments	Shared Reading; discussion; science experimentation	Scales, rulers, magnifying glasses, thermometers, balances, chart paper, science journal
Organize and analyze data; compare to predictions 1-4	Inquiry	Based on the data, does this make sense? Could this really happen?	Strand 1 Concept 3 PO1 organize data, PO2 reasonableness of results, PO3 compare results, PO4 generate question for future investigation	Science fair project with rubric; various experiments	Pictographs, tally charts, tables	Examples of graphs

Communicate results of investigations 1-4	Inquiry	What does the audience want to know about the results of our experiment?	Strand 1 Concept 4 PO1 communicate results & conclusions of investigation, PO2 communicate with others	Science fair project with rubric; various experiments	Board Design; Summary writing	Anchor Chart; Scientific Method Checklist
Identify individual and cultural contributions to scientific knowledge 1-4	History & Nature of Science	Can the student explain a system and how study causes our knowledge of it to change?	Strand 2 Concept 1 PO1 important contributions to science, PO2 related career fields	Probe; Science Report	Reading; Writing; research and probe construction	Thinkfinity and other Web sources; biographies
Understand how science is a process for generating knowledge 1-4	History & Nature of Science	What may cause a system to break down?	Strand 2 Concept 2 PO1 components of systems, PO2 characteristics of systems, PO3 small parts of systems	Probe; Science Report	Reading; Writing; research and probe construction	Thinkfinity and other Web sources
Understand the impact of technology 1-4	Science and Technology in Society	How do changes in technology change our knowledge of science--astronomy for example	Strand 3 Concept 2 PO1 impact of technology, PO2 important technology contributions, PO3 problem/ solution	Compositions; general reports; probe checklist	Writer's Workshop	Information Texts, Thinkfinity and other web sources
Understand that basic structures in plants and animals serve a function 1	Life Science Organisms	How does the circulatory (other) system serve the body?	Strand 4 Concept 1 PO1 animal structures, PO2 parts within body systems, PO3 function of body systems	Probe Checklist; dramatic presentation checklist	Shared Reading; Writing; research and probe construction	ThinkFiinity, Information Texts/ Big books
Understand the life cycles of plants and animals 1	Life Science Life Cycles	What is an example of the cycle of life in plants or animals	Strand 4 Concept 2 PO1 insect life cycles, PO2 mammal life cycles, PO3 compare life cycles of different organisms	Science log with checklist	Shared Reading; Experiments	Thinkfinity; information texts/ big books

Classify objects and materials by their observable properties 2	Physical Science: Properties of Objects	Can we put these materials together with other gases, solids or liquids?	Strand 5 Concept 1 PO1 identify measurable properties, PO2 classify as solid, liquid, or gas, PO3 three states of water, PO4 properties of solids, liquids, & gases	Science log with checklist	Shared Reading, Writer's Workshop	Information Texts/ Big books; rulers, meter sticks, scales, balances, thermometers, measuring cups, graduated cylinders, solids, liquids, balloon, steam
Understand characteristics of weather conditions and climate 3	Earth Science: Changes in Earth & Sky	What are some of the observable conditions that help us classify weather?	Strand 6 Concept 3 PO1 measure weather conditions, PO2 record weather conditions, PO3 cloud identification, PO4 relationship between clouds, temperature, & weather patterns	Weather data chart over time (using a criteria checklist)	Reading; Writing; research and weather graph/chart construction	Thermometer, rain gauge; weather web page

Visions Unlimited Academy
Curriculum Map
Science Grade Three

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Observe, ask questions, and make predictions 1-4	Inquiry	Can the student formulate testable questions and make hypotheses	Strand 1 Concept 1 PO1 formulate questions, PO2 predict results of investigation based on pattern	Science Fair project with rubric; various experiments	Shared Reading; discussion; science experimentation	Big Books, Information texts
Participate in planning and conducting investigations, and recording data 1-4	Inquiry	Can the student plan and conduct an experiment in a safe manner	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 plan investigations based on questions, PO3 conduct investigations, PO4 use metric & customary units of measure, PO5 record data in an organized & appropriate format	Science Fair project with rubric; various experiment	Guided Reading; discussion; science experimentation	Scales, rulers, meter stick, magnifying glasses, thermometers, balances, chart paper, science journal
Organize and analyze data; compare to predictions 1-4	Inquiry	Can the student organize and analyze date in order to accept or reject a hypothesis	Strand 1 Concept 3 PO1 organize data using labels, PO2 reasonableness of results, PO3 compare results, PO4 generate question for future investigation, PO5 record questions	Science Fair project with rubric; various experiment	Pictographs, tally charts, bar graphs	Examples of graphs

Communicate results of investigations 1-4	Inquiry	Can the student display and talk about the result of an experiment?	Strand 1 Concept 4 PO1 communicate using evidence & terminology, PO2 describe method of investigation, PO3 communicate with others	Science Fair project with rubric; various experiment	Board Design; Summary Writing	Anchor Chart; Scientific Method check list
Identify individual and cultural contributions to scientific knowledge 1-4	History & Nature of Science	Can the student share insights about the changes in science over time?	Strand 2 Concept 1 PO1 important contributions to science, PO2 describe science careers	Scientist probe; scientific process probe	Reading; Research, writing	Biographies, Web Projects
Understand how science is a process for generating knowledge 1-4	History & Nature of Science	Can the student explain what a system is and what may cause it to break down?	Strand 2 Concept 2 PO1 influence of components within systems, PO2 explain why a system may not work if a component is defective or missing	Probe; Science Report	Reading, writing, research, experimentation	Information Texts
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	Can the students explain how the impact of human behavior has impacted the environment?	Strand 3 Concept 1 PO1 impact of major factors on human populations, PO2 beneficial & harmful impacts of natural events & human activities on the environment	Probe; Science Report	Reading, writing, research, experimentation	Information Texts
Understand the impact of technology 1-4	Science and Technology in Society	Can the student explain the function of plant structures	Strand 3 Concept 2 PO1 use of tools to solve problems, PO2 describe development of technology, PO3 design & construct a technological solution	Comp. Gen reports; Probe	Reading, writing, research, experimentation	Information Texts; Thinkfinity

Understand that basic structures in plants and animals serve a function 1	Life Science Organisms	Can the student explain how science has changed as technologies has become more complex	Strand 4 Concept 1 PO1 function of plant structures	Science probe; dramatic presentation	Reading, research, discussion, writing and experimenting	Plants; Thinkfinity
Understand the life cycles of plants and animals 1	Life Science Life Cycles	Can the student compare and explain different life cycles?	Strand 4 Concept 2 PO1 compare life cycles of different plants, PO2 explain how growth, death, & decay are part of the plant life cycle	Experiments; science log	Anchor charts; reading	Plants; Thinkfinity
Understand the relationships among various organisms and their environment 1	Life Science Organisms & Environments	Can the student discuss the relationship among ecosystem factors	Strand 4 Concept 3 PO1 living & nonliving parts of ecosystems, PO2 microscopic & macroscopic organisms in ecosystems, PO3 interrelationships among pants & animals, PO4 plants & animals cause change, PO5 environmental factors affect survival	Probe; Science Report	Reading, Research, writing, field observation	Information Texts, Big Books Thinkfinity Field Observation Site
Identify plant and animal adaptations 1	Life Science Diversity, Adaptation & Behavior	Can the student discuss the relationship among ecosystem factors	Strand 4 Concept 4 PO1 environmental adaptations of plants & animals, PO2 adaptations in new environments, PO3 inability to adapt leads to extinction	Probe; Science Report	Reading, Research, writing	Thinkfinity Microscope

Investigate different forms of energy 2	Physical Science: Energy & Magnetism	Can the student discuss the basic properties of light	Strand 5 Concept 3 PO1 properties of light, PO2 how light behaves striking an object, PO3 vibration produces sound, PO4 pitch	Experimentation, group presentations	Experiments	Mirrors, prisms, plastic wrap, waxed paper, cardboard
Identify the basic properties of Earth materials 3	Earth Science: Properties of Earth Materials	Can the student desire the different types of Earth materials	Strand 6 Concept 1 PO1 layers of Earth, PO2 types & formation of rock types, PO3 color & texture of rocks, PO4 fossils, PO5 fossil formation, PO6 use of Earth materials	Experiments and investigations	Reading, Research	Metamorphic, igneous, & sedimentary rocks, fossils

Visions Unlimited Academy
Curriculum Map
Science Grade Four

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Observe, ask questions, and make predictions 1-4	Inquiry	What is the difference between an inference & observation? If you control _____ what could happen? What was the cause? What is the effect? What are your predictions?	Strand 1 Concept 1 PO1 differentiate inferences from observations, PO2 formulate questions, PO3 formulate predictions, PO4 locate information	Rubrics, checklists; science Fair Project with rubric	Shared Reading; discussion; science experimentation	Big Books; information texts; science journals

Participate in planning and conducting investigations, and recording data 1-4	Inquiry	What material will you need? What is the procedure?	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 plan investigations which control variables, PO3 conduct investigations, PO4 measure using appropriate tool and unit, PO5 record data in an organized & appropriate format	Rubrics, checklists; science Fair Project with rubric	Shared Reading; discussion; science experimentation	Scales, rulers, meter stick, magnifying glasses, thermometers, balances, chart paper, science journal,
Organize and analyze data; compare to predictions 1-4	Inquiry	What was the actual outcome? What factors may have influenced the outcome? Was the out come what you predicted?	Strand 1 Concept 3 PO1 analyze data to find trends, PO2 formulate conclusions, PO3 data consistency, PO4 prediction is supported by data, PO5 develop new questions & predictions based on results	Rubrics, checklists; science Fair Project with rubric	Cooperative Groups, experiments, Math Workshop	Science journals
Communicate results of investigations 1-4	Inquiry	How can you show your results?	Strand 1 Concept 4 PO1 communicate results, PO2 choose appropriate graphic to represent data, PO3 communicate with others to compare results	Student Presentations Checklist	Bar graph, line graph, Venn diagram, models, Math Workshop, Shared Reading	Shard Reading Books, Thinkfinity Charts and Graphs, graphic organizers
Identify individual and cultural contributions to scientific knowledge 1-4	History & Nature of Science	What contribution did (scientist) make?	Strand 2 Concept 1 PO1 important contributions to science, PO2 describe science careers	Report rubric	Research project on scientists	Biographies, nonfiction text, guest speakers from science fields

Understand how science is a process for generating knowledge 1-4	History & Nature of Science	Pretend you are a new scientist: What have you discovered? Why is your discovery important? What will you do with your discovery?	Strand 2 Concept 2 PO1 explain role of experimentation, PO2 explain interaction of components in a system, PO3 ways scientists generate ideas	Role Play checklist (to determine ideas, role of experimentation, interaction)	Direct instruction, role play	Reading matter (content), Thinkfinity
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	Explain how fire, flood, pollution, dams, etc. have a positive or negative impact on the environment. How do floods, fire, tornadoes, affect the environment? How does the green house effect, erosion, drought, melting ice caps affect the environment?	Strand 3 Concept 1 PO1 impact of natural events & human activities, PO2 consequences of rapid and long term natural occurrences	Report rubric	Cooperative Groups; Report out of groups using rubric	Nonfiction texts, science journals
Understand the impact of technology 1-4	Science and Technology in Society	How has life changed as technology changed?	Strand 3 Concept 2 PO1 improvements of science & technology to life, PO2 benefits & risks to technology, PO3 design & construct a technological solution	Graphic Organizers, Comparison Maps, Venn diagram	Direct instruction, Comparison Graphic Organizers	Biographies, nonfiction text, guest speakers from science fields, Chart Paper, Graphic organizers

Understand that basic structures in plants and animals serve a function 1	Life Science Organisms	How are plant stems like the body's bones? How are nerves in the body like the roots of a plant? What are the characteristics of vertebrates? Invertebrates?	Strand 4 Concept 1 PO1 compare structures in plants & animals, PO2 classify vertebrates & invertebrates	Rubrics, unit tests	Plant growth investigation	Plants, nonfiction texts, science journals, internet, body model (skeleton)
Understand the relationships among various organisms and their environment 1	Life Science Organisms & Environments	What is the importance of recycling? Describe how plants & animals live together. Describe what humans need to do to help the environment.	Strand 4 Concept 3 PO1 utilization of resources, PO2 renewable & nonrenewable resources, PO3 effects of limited resources, PO4 conservation of resources	Cooperative Checklists, Recycling Checklist, Poster construction rubric	Whole Group Instruction, Demonstrations and Posters, Recycling Activities	Graphic Organizers, Thinkfinity Unit on Environmental Challenge
Identify plant and animal adaptations 1	Life Science Diversity, Adaptation & Behavior	How do animals adapt to their environment?	Strand 4 Concept 4 PO1 recognize that successful characteristics of populations are inherited traits that are favorable in a particular environment, PO2 types of adaptation,	Cooperative Checklists, Adaptation Graphic Organizer, Poster construction rubric	Diorama construction, science report	Diorama materials, Graphic Organizers, Thinkfinity Unit on Environmental Adaptation

Investigate different forms of energy 2	Physical Science: Energy & Magnetism	How does an electrical circuit work? What is a conductor? How do insulators affect currents? What is electrical magnetic power?	Strand 5 Concept 3 PO1 circuits, PO2 construct series & parallel circuits, PO3 conductors & insulators, PO4 magnets, PO5 relationship between magnets & circuitry	Unit tests, checklists	Building circuits, electricity & magnet investigations	Graphic Organizers, Thinkfinity Unit on Energy
Understand the processes acting on the Earth and their interaction with the Earth systems 3	Earth Science: Earth's Processes & Systems	What is erosion? What causes erosion? What are examples of erosion in Arizona? Use a Venn diagram to compare rapid & slow changes. What are some Earth events that cause atmospheric conditions?	Strand 6 Concept 2 PO1 erosion, PO2 currents & wind cause change, PO3 water alters Earth's features, PO4 rapid & slow changes to Earth's surface, PO5 Earth events & atmospheric changes, PO6 evidence of changes over time	Unit tests, checklists	Student Investigations; cooperative learning groups	Graphic Organizers, Thinkfinity Unit on Global Change
Understand characteristics of weather conditions and climate 3	Earth Science: Changes in Earth & Sky	Where is water found naturally? How do you go about reading a weather map? What does a weather station tell us? What are precipitation, wind speed & barometric pressure?	Strand 6 Concept 3 PO1 sources of water, PO2 distribution of water, PO3 differentiate between weather & climate pertaining to southwest, PO 4 measure weather changes, PO5 interpret symbols on weather maps, PO6 compare weather across regions	Checklists, Rubric	Build a weather station	Science journals, weather maps, meteorologist, Internet

Visions Unlimited Academy
Curriculum Map
Science Grade Five

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources 1-4	Inquiry	What is the scientific process?	Strand 1 Concept 1 PO1 formulate questions, PO2 formulate predictions, PO3 locate predictions	Rubrics, checklists, experiments	Direct instruction (Scientific Process) experiments, independent practice	AIMS series investigations, science journals
Design and conduct controlled investigations 1-4	Inquiry	Explain the process of scientific testing. What is the procedure? Controls? Variables?	Strand 1 Concept 2 PO1 safe behavior and appropriate procedures, PO2 plan investigations which control variables, PO3 conduct investigations, PO4 measure using appropriate tool and unit, PO5 record data in an organized & appropriate format	Rubrics, checklists, experiments	Science Fair Projects/ experiments	AIMS series investigations, scales, rulers, meter stick, magnifying glasses, thermometers, balances, chart paper, science journal,

Analyze and interpret data to explain correlations and results; formulate new questions 1-4	Inquiry	What was the actual outcome? What factors may have influenced the outcome? Was the out come what you predicted?	Strand 1 Concept 3 PO1 analyze data to find trends & form conclusions, PO2 data consistency, PO3 reasonableness, PO4 develop new investigations & predictions based on results, PO 5 relationships between variables	Rubrics, checklists, experiments	Science Fair Projects/ experiments	Science journals
Communicate results of investigations 1-4	Inquiry	How will you communicate the results? Who will benefit?	Strand 1 Concept 4 PO1 communicate results, PO2 choose appropriate graphic to represent data, PO3 communicate with others to compare results	Rubrics, checklists, experiments	Bar graph, line graph, Venn diagram, models	
Identify individual, cultural, and technological contributions to scientific knowledge 1-4	History & Nature of Science	What contribution did (scientist) make?	Strand 2 Concept 1 PO1 important contributions to science	Report rubric, checklists	Research project on scientists	Biographies, nonfiction text, guest speakers from science fields

Understand how science is a process for generating knowledge 1-4	History & Nature of Science	Choose something you use and explain: how it helps you, how the object works, & how the inventor went about the discovery.	Strand 2 Concept 2 PO1 support the premise that science is an ongoing process that changes in response to new information and discoveries, PO2 knowledge generates inquiry, PO3 scientific knowledge is subject to modification and/or change as new information/ technology challenges prevailing theories, PO4 compare collaborative approaches that scientists use for investigations, PO5 qualities of the scientists' habits of mind	Rubrics, checklists, experiments	Student Research Projects; Presentation with rubric	Thinkfinity and other Internet sources
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	What impacts have natural hazards had on the environment? Pick a specific human, animal, or habitat need: how would you solve this need.	Strand 3 Concept 1 PO1 impact of natural hazards on habitats, PO2 propose a solution, resource, or product that addresses a specific human, animal, or habitat need, PO3 evaluate the possible strengths and weaknesses of a proposed solution	Rubrics, checklists, experiments	Student Research Projects on environmental hazards; Presentation with rubric	Nonfiction texts, science journals

Develop viable solutions to a need or problem 1-4	Science and Technology in Society	What is the relationship between science & technology? How can technology help solve a common problem?	Strand 3 Concept 2 PO1 relationship between science & technology, PO2 scientific knowledge, skills, & technological capabilities are integral to a variety of careers, PO3 design & construct a technological solution	Rubrics, checklists, experiments	Student Research Projects; Presentation with rubric	Biographies, nonfiction text, guest speakers from science fields
Understand the relationships between structures and functions of organisms 1	Life Science Organisms	Where are the following located & what are their functions: rib cage, cranium, vertebrate, pelvis, femur, & hip? What type of muscle are the heart, stomach, & biceps? What are the functions of the brain, spinal cord, & nerves? What is a voluntary response? What is an involuntary response?	Strand 4 Concept 1 PO1 skeletal system, PO2 muscular system, PO3 nervous system, PO4 distinguish between voluntary & involuntary responses	Rubrics, unit tests	Direct instruction, models, demonstration	*From Head to Toe: Respiratory, Circulatory, and Skeletal Systems*, AIMS Foundation

Understand physical and chemical properties of matter 2	Physical Science: Properties & Changes of Properties in Matter	What are molecules? What are atoms? What is the difference between a mixture & a compound? What are some examples of physical changes in matter? Chemical changes?	Strand 5 Concept 1 PO1 molecules & atoms make up matter, PO2 mixtures & compounds, PO3 physical & chemical changes	Unit tests, checklists	Models, demonstration	*Popping with Power* AIMS Foundation
Understand the relationship between force and motion 2	Physical Science: Motion & Forces	What is gravity? What is friction? What causes motion, change of direction, deformation? Explain motion using a wedge, plane, pulley, wheel & axle, lever. Explain the effects of friction; incline angles, & applied forces on an object's motion.	Strand 5 Concept 2 PO1 gravity & friction, PO2 effects of force on objects, PO3 simple machines, PO4 effects of variables on an object's motion	Unit tests, checklists	Simple machine investigations; experiments and models	Simple machines kit, *Popping with Power* AIMS Foundation

Understand the processes acting on the Earth and their interaction with the Earth systems 3	Earth Science: Earth's Processes & Systems	What causes day & night? What does the word rotation mean? How does the moon look when it's full? Do you always see the moon? Why is the moon out during the day sometimes? What causes the changing moon phases? What changes does the moon go through each month? What does the word revolution mean?	Strand 6 Concept 2 PO1 lunar cycle, PO2 rotation of Earth, PO3 distinguish between revolution & rotation, PO4 gravity in space	Unit tests, checklists	Moon observations, direct instruction, model construction	*Out of This World,* AIMS Foundation, Discovery channel, NASA website
Understand the relationships of the Earth and other objects in the solar system 3	Earth Science: Changes in Earth & Sky	How can you classify the 8 planets? What can we learn about planets by displaying the information in Venn diagrams? Why is space exploration important?	Strand 6 Concept 3 PO1 identify planets, PO2 distinguishing characteristics of planets, PO3 describe other objects in the sky, PO 4 change in position over time of celestial objects, PO5 motion of sun & stars, PO6 efforts to explore space	Unit tests, checklists	Student Projects, solar system web quest investigation	*Out of This World,* AIMS Foundation, Discovery channel, NASA website

Visions Unlimited Academy
Curriculum Map
Science Grade Six

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources 1-4	Inquiry	Based on observations, what is your hypothesis? What do you think will happen? Where can you find more information to guide you?	Strand 1 Concept 1 PO1 differentiate between question, hypothesis, prediction, PO2 formulate questions that lead to a hypothesis, PO3 locate research information	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts
Design and conduct controlled investigations 1-4	Inquiry	What safety measures do you need to take in this investigation? How does the variable change the investigation?	Strand 1 Concept 2 PO1 safe behavior & appropriate procedures, PO2 design investigations to test variables, PO3 conduct investigations using scientific processes, PO4 measure using appropriate tool, PO5 keep a record of observations	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works

Analyze and interpret data to explain correlations and results; formulate new questions 1-4	Inquiry	What does the data tell you about the variable(s)? How does this experiment compare to the previous one?	Strand 1 Concept 3 PO1 analyze data to find trends, PO2 correlation between variables or sequence of events, PO3 evaluate work of others, PO4 interpret graphic representations of others, PO 5 analyze previous work to verify results, PO6 formulate new questions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Communicate results of investigations 1-4	Inquiry	Which graphic representation would be best to communicate this data? What conclusions can you draw from your investigation?	Strand 1 Concept 4 PO1 appropriate graphic representation, PO2 display data, PO3 communicate in qualitative & quantitative terms, PO4 create list of procedural instructions, PO5 communicate results & conclusions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Identify individual, cultural, and technological contributions to scientific knowledge 1-4	History & Nature of Science	How do people contribute to science? How do major scientific milestones affect or change the future? How does technology influence science?	Strand 2 Concept 1 PO1 important contributions to science, PO2 major scientific milestones, PO3 impact of major developments, PO4 use of technology in science fields	Discussions, science journal responses, biography rubric	Shared reading, research methods	Internet, nonfiction texts, biographies, graphic organizers

Understand how science is a process for generating knowledge 1-4	History & Nature of Science	How is science a life long learning process?	Strand 2 Concept 2 PO1 science is ongoing & changes with new information, PO2 knowledge changes, PO3 scientific processes are used to solve problems	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	Nonfiction texts, science journals
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	What are the effects of sandstorms, hurricanes, tornadoes, ultraviolet light, & lightning caused fires? How can people plan for & respond to drought, flooding, & tornadoes?	Strand 3 Concept 1 PO1 effects of natural hazards, PO2 planning & responding to natural disasters	Discussions, science journal responses	Inquiry lessons, shared reading, Hurricane Katrina case study	Nonfiction texts, science journals, state disaster plan
Develop viable solutions to a need or problem 1-4	Science and Technology in Society	What are possible responses to this problem? What are the pros & cons of each response? Which is the best response? How does technology influence science?	Strand 3 Concept 2 PO1 methods of responding to needs or problems, PO2 compare possible solutions, PO3 design & construct a solution, PO4 describe a technological discovery that influences science	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading, T-charts	Nonfiction texts, science journals

Understand the relationships between structures and functions of organisms 1	Life Science Living Systems	What are the parts of different cells? How are plant & animal cells the same? Different? How do cells help an organism survive? List functions of plant & animal systems & their coexistence of function. Why is water important to living things?	Strand 4 Concept 1 PO1 importance of water, PO2 cell structure, PO3 function of cell parts, PO4 differentiate between plant & animal cells, PO5 hierarchy of cells, tissue, organs, system, PO6 relate structures & function in plants & animals, PO7 systems work together	Teacher observation, science journal responses, quizzes, cell poster	Teacher demonstration, lab experiments, shared reading	Microscopes, big books, *The Budding Botanist*, AIMS Foundation, KIDS Discover "Cells" Magazine
Analyze the relationships among various organisms and their environment 1	Life Science Populations	What is the major source of energy for most ecosystems? How do water quality, climate, population density, & smog affect quality of life?	Strand 4 Concept 3 PO1 sun is major source of energy, PO2 describe how environmental conditions affect quality of life	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*Field Detectives*, AIMS Foundation, "I Need My Space" & "It's Bean a Great Place to Live"
Understand that energy can be stored and transferred 2	Physical Science: Transfer of Energy	How can electricity be generated using renewable & nonrenewable resources? How can energy be stored, transformed or transferred?	Strand 5 Concept 3 PO1 renewable & nonrenewable sources of energy, PO2 ways energy can be stored, PO3 ways energy can be transformed, PO4 conduction, convection, radiation	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*Popping with Power* AIMS Foundation, KIDS Discover "Energy" Magazine, *Physics Experiments for Children* by Muriel Mandell

Describe the composition and interactions between the structure of the Earth and its atmosphere 3	Earth Science: Structure of Earth	Describe the water cycle. What are the properties, composition, & structures of the atmosphere & bodies of water? How do scientists explore the atmosphere & bodies of water?	Strand 6 Concept 1 PO1 properties & composition of layer of atmosphere, PO2 composition, properties, & structure of lakes & rivers, PO3 composition, properties, & structures of the oceans' zones & layers, PO4 water cycle, PO5 ways scientists explore the atmosphere & bodies of water	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*Water Precious Water,* AIMS Foundation, *The Earth Science Book* by Dinah Zike, *The Amazing Earth Model Book,* Scholastic
Understand the processes acting on the Earth and their interaction with the Earth systems 3	Earth Science: Earth's Processes & Systems	How is water cycled in nature? What is the distribution of water in different parts of the atmosphere? How do bodies of water affect climate? How do ocean currents, elevation, & location affect climate? How do large-scale weather systems affect local weather?	Strand 6 Concept 2 PO1 water cycle in nature, PO2 distribution of water in space, PO3 effects of bodies of water on climate, PO4 factors affecting climate, PO5 impact of large scale weather systems on local weather, PO6 weather system model	Teacher observation, science journal responses, quizzes, weather system model	Teacher demonstration, lab experiments, shared reading	*The Earth Science Book* by Dinah Zike

Visions Unlimited Academy
Curriculum Map
Science Grade Seven

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources 1-4	Inquiry	Based on observations, what is your hypothesis? What do you think will happen? Where can you find more information to guide you? Why do scientists make hypotheses?	Strand 1 Concept 1 PO1 formulate questions that lead to a hypothesis, PO2 locate research information, PO3 role of hypothesis in inquiry	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts
Design and conduct controlled investigations 1-4	Inquiry	What safety measures do you need to take in this investigation? How does the variable change the investigation? What are the benefits of multiple trials?	Strand 1 Concept 2 PO1 safe behavior & appropriate procedures, PO2 design investigations to test variables, PO3 conduct investigations with multiple trials, PO4 measure using appropriate tool, PO5 keep a record of observations	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works

Analyze and interpret data to explain correlations and results; formulate new questions 1-4	Inquiry	What does the data tell you about the variable(s)? Was your hypothesis correct? Can you refine your hypothesis?	Strand 1 Concept 3 PO1 analyze data to find trends, PO2 correlation between variables or sequence of events, PO3 analyze results to accept or reject hypothesis, PO4 validity & reliability of results, PO 5 formulate conclusion, PO6 refine hypothesis, PO7 formulate new questions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Communicate results of investigations 1-4	Inquiry	Which graphic representation would be best to communicate this data? What conclusions can you draw from your investigation?	Strand 1 Concept 4 PO1 appropriate graphic representation, PO2 display data, PO3 communicate in qualitative & quantitative terms, PO4 write step-by-step directions for procedure, PO5 communicate results & conclusions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Identify individual, cultural, and technological contributions to scientific knowledge 1-4	History & Nature of Science	How do people contribute to science? How do major scientific milestones affect or change the future? How does technology influence science?	Strand 2 Concept 1 PO1 important contributions to science, PO2 major scientific milestones, PO3 impact of major developments, PO4 use of technology in science fields	Discussions, science journal responses, biography rubric	Shared reading, research methods	Internet, nonfiction texts, biographies, graphic organizers

Understand how science is a process for generating knowledge 1-4	History & Nature of Science	How is science a life long learning process?	Strand 2 Concept 2 PO1 science is ongoing & changes with new information, PO2 knowledge changes, PO3 scientific processes are used to solve problems	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	Nonfiction texts, science journals
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	How do humans cause environmental concerns? How can humans benefit the environment?	Strand 3 Concept 1 PO1 environmental risks caused by humans, PO2 environmental benefits from humans, PO3 possible solutions to address risks	Discussions, science journal responses	Inquiry lessons, shared reading	Nonfiction texts, science journals
Develop viable solutions to a need or problem 1-4	Science and Technology in Society	What are possible responses to this problem? What are the pros & cons of each response? Which is the best response? How does science influence technology?	Strand 3 Concept 2 PO1 methods of responding to needs or problems, PO2 compare possible solutions, PO3 design & construct a solution, PO4 describe a scientific discovery that influences technology	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading, T-charts	Nonfiction texts, science journals

Analyze the relationships among various organisms and their environment 1	Life Science Populations	How do food chains & food webs differ? How do organism use resources to survive? How do living things interact for survival? What problems are associated with population growth? How do environmental factors influence survival?	Strand 4 Concept 3 PO1 food chains & food webs, PO2 niches, predator/ prey relationships, PO3 interactions within ecosystems, PO4 problems & solutions of population growth, PO5 environmental factors & survival rate, PO6 create a model of the interactions of living organisms within an ecosystem	Teacher observation, science journal responses, quizzes, student created food chains & webs, interaction model (PO6)	Teacher demonstration, lab experiments, shared reading	*Field Detectives*, AIMS Foundation, "Comfort Clues", & "Life in a Food Chain", nonfiction texts
Describe the composition and interactions between the structure of the Earth and its atmosphere 3	Earth Science: Structure of Earth	What characteristics are used to classify rocks & minerals? Describe the properties & composition of Earth's layers. What processes have contributed to the formation of surface features? How does the rock & fossil record show environmental change?	Strand 6 Concept 1 PO1 classify rocks & minerals, PO2 composition & properties of layer of Earth, PO3 erosion, deposition, plate tectonics, & volcanism, PO4 describe how the rock & fossil record show that environmental conditions have changed over geologic & recent time	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*The Earth Science Book* by Dinah Zike, *Geology,* Milliken Publishing Company, CCPS rock unit, *The Amazing Earth Model Book,* Scholastic

Understand the processes acting on the Earth and their interaction with the Earth systems 3	Earth Science: Earth's Processes & Systems	How does the rock cycle work? What evidence is there that plate tectonics theory exists? How does plate movement cause surface changes? How are earthquakes measured?	Strand 6 Concept 2 PO1 rock cycle, PO2 components & characteristics of types of rock , PO3 analyze the evidence that lithospheric plate movements occur, PO4 explain lithospheric plate movement as a result of convection, PO5 relate plate movements to resulting, PO6 measuring earthquakes	Teacher observation, science journal responses, quizzes, weather system model	Teacher demonstration, lab experiments, shared reading	*The Earth Science Book* by Dinah Zike, *Geology*, Milliken Publishing Company
Understand the relationships of the Earth and other objects in the solar system 3	Earth Science: Solar System	How do the Earth, Sun, and our moon interact within the Solar System? What causes tides & seasons? What is the relationship between the solar system, galaxy, and universe?	Strand 6 Concept 3 PO1 phases of the Moon in terms of relative positions of the Earth, Sun, & Moon, PO2 construct a model showing position of celestial objects during eclipses, PO3 interrelationship between tides and Moon, PO4 explains seasons in terms of tilt & revolution, PO5 major constellations, PO6 relationship among common objects in the solar system, galaxy, & the universe	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*The Earth Science Book* by Dinah Zike, telescope

Visions Unlimited Academy
Science Curriculum Map
Grade 8

Arizona Standard	Unit Name	Essential Questions	Content/ Skills	Assessment	Instructional Strategies	Resources
Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources 1-4	Inquiry	Where can you find more information to guide you? What is your hypothesis?	Strand 1 Concept 1 PO1 formulate questions that lead to a hypothesis, PO2 locate research information, PO3 generate a hypothesis	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts
Design and conduct controlled investigations 1-4	Inquiry	What safety measures do you need to take in this investigation? What investigational steps can you perform to support or reject your hypothesis?	Strand 1 Concept 2 PO1 safe behavior & appropriate procedures, PO2 design investigations to support or reject hypothesis, PO3 conduct controlled investigations, PO4 measure using appropriate tool, PO5 keep a record of observations	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works

Analyze and interpret data to explain correlations and results; formulate new questions 1-4	Inquiry	What does the data tell you about the relationship between the variables? Is your conclusion valid and reliable? What errors could occur? How do scientists control errors?	Strand 1 Concept 3 PO1 analyze data to find trends, PO2 correlation between variables or sequence of events, PO3 relationships between two variables, PO4 formulate a future investigation, PO 5 evidence supports the validity & reliability, PO6 potential errors in investigations, PO7 critique reports found in media sources, PO8 formulate new questions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Communicate results of investigations 1-4	Inquiry	Which graphic representation would be best to communicate this data? What conclusions can you draw from your investigation?	Strand 1 Concept 4 PO1 appropriate graphic representation, PO2 display data, PO3 communicate in qualitative & quantitative terms, PO4 write step-by-step directions for procedure, PO5 communicate results & conclusions	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	AIMS Foundation resources, reference materials, nonfiction texts, *Science Fair Projects and Activities*, The Learning Works
Identify individual, cultural, and technological contributions to scientific knowledge 1-4	History & Nature of Science	How do people contribute to science? How have Medelian Genetics and Newton's Laws affected society?	Strand 2 Concept 1 PO1 important contributions to science, PO2 major scientific milestones, PO3 impact of major developments, PO4 career opportunities in life & physical science	Discussions, science journal responses, biography rubric	Shared reading, research methods	Internet, nonfiction texts, biographies, graphic organizers, *Newton Take 3,* by B.K. Hixson

Understand how science is a process for generating knowledge 1-4	History & Nature of Science	How is science a life long learning process? What can an investigator do to maintain credibility among other scientists & society?	Strand 2 Concept 2 PO1 scientific processes are used to solve problems, PO2 knowledge changes, PO3 defend the principle that accurate record keeping, openness, & replication are essential for maintaining an investigator's credibility with other scientists & society, PO4 explain why scientific claims may be questionable if based on very small samples of data, biased samples, or samples for which there was no control	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading	Nonfiction texts, science journals
Describe the interactions between human populations, natural hazards, and the environment 1-4	Changes in Environments	What are the environmental risks associated with chemical & biological systems? How can we prevent the risks or eliminate them?	Strand 3 Concept 1 PO1 risk factors associated with natural, human induced, and/or biological hazards, PO2 possible solutions to address risks	Discussions, science journal responses	Inquiry lessons, shared reading	Nonfiction texts, science journals

Develop viable solutions to a need or problem 1-4	Science and Technology in Society	What are possible responses to this problem? What are the pros & cons of each response? Which is the best response? What are the risks & benefits of radiation, genetic engineering, & airbags?	Strand 3 Concept 2 PO1 methods of responding to needs or problems, PO2 compare possible solutions, PO3 design & construct a solution, PO4 risks & benefits of radiation, genetic engineering, airbags	Teacher observation, science journal responses, lab reports	Inquiry lessons, shared reading, T-charts	Nonfiction texts, science journals
Understand the basic principles of heredity 1	Life Science Reproduction & Heredity	What is the purpose of cell division? How do we get traits like eye color? What is the difference between dominant & recessive traits?	Strand 4 Concept 1 PO1 cell division, PO2 basic principles of heredity, PO3 distinguish between the nature of dominant & recessive traits in humans	Teacher observation, science journal responses, family heredity chart	Teacher demonstration, lab experiments, shared reading	
Identify structural and behavioral adaptations 1	Life Science Diversity, Adaptation, & Behavior	How does behavior affect survival? Compare symbiotic & competitive relationships. How do structural differences help in survival?	Strand 4 Concept 4 PO1 explain how behavior affect survival, PO2 organism survival in constant change, PO3 generational changes in organisms, PO4 symbiotic & competitive relationships, PO5 behavioral cycles, PO6 • protective coloration, beak design, seed dispersal, pollination	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	

Understand physical and chemical properties of matter 2,3	Physical Science: Properties & Changes of Properties in Matter	What physical & chemical properties exist within states of matter? How do you know a chemical reaction has occurred? How is the periodic table organized? What is a mixture?	Strand 5 Concept 1 PO1 identify matter based on physical properties, PO2 identify matter based on chemical properties, PO3 evidence of chemical reactions, PO4 classify matter in terms of elements, compounds, or mixtures, PO5 classify mixtures, PO6 organization of periodic table, PO7 transfer of energy can affect the physical & chemical properties of matter	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*Chemistry Matters* & *Spills and Ripples,* AIMS Foundation
Understand the relationship between force and motion 2	Physical Science: Motion & Forces	How do Newton's Laws of Motion apply to force and motion?	Strand 5 Concept 2 PO1 velocity, PO2 Newton's 1st Law of Motion, PO3 Newton's 2nd Law of Motion, PO4 Newton's 3rd Law of Motion, PO5 • position-time graphs & velocity-time graphs	Teacher observation, science journal responses, quizzes	Teacher demonstration, lab experiments, shared reading	*Newton Take 3*, by B.K. Hixson