

Grade 7

Science Standards Correlations

For the

SRP Power In-Service Workshops and Tour

Please note: Science standards correlations are based upon the Arizona Department of Education's Science Standard Crosswalk

www.ade.state.az.us/standards/science/articulated.asp

Concept 1: Observations, Questions, and Hypotheses

Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.

- PO 1. Formulate questions based on observations that lead to the development of a hypothesis. (See M07-S2C1-01)
- PO 2. Select appropriate resources for background information related to a question, for use in the design of a controlled investigation. (See W07-S3C6-01, R07-S3C1-06, and R07-S3C2-03)
- PO 3. Explain the role of a hypothesis in a scientific inquiry.

Concept 2: Scientific Testing (Investigating and Modeling)

Design and conduct controlled investigations.

- PO 2. Design an investigation to test individual variables using scientific processes.
- PO 4. Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers).
- PO 5. Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs. (See W07-S3C2-01 and W07-S3C3-01)

Concept 3: Analysis and Conclusions

Analyze and interpret data to explain correlations and results; formulate new questions.

- PO 1. Analyze data obtained in a scientific investigation to identify trends. (See M07-S2C1-07 and M07-S2C1-08)
- PO 3. Analyze results of data collection in order to accept or reject the hypothesis.
- PO 5. Formulate a conclusion based on data analysis.
- PO 6. Refine hypotheses based on results from investigations.
- PO 7. Formulate new questions based on the results of a previous investigation.

Concept 4: Communication

Communicate results of investigations.

- PO 2. Display data collected from a controlled investigation. (See M07-S2C1-03)
- PO 3. Communicate the results of an investigation with appropriate use of qualitative and quantitative information. (See W07-S3C2-01)

Strand 2: History and Nature of Science

Concept 1: History of Science as a Human Endeavor

Identify individual, cultural, and technological contributions to scientific knowledge.

- PO 1. Identify how diverse people and/or cultures, past and present, have made important contributions to scientific innovations (e.g., Rachel Carson [scientist], supports Strand 4; Luis Alvarez [scientist] and Walter Alvarez [scientist], support Strand 6; Percival Lowell [scientist], supports Strand 6; Copernicus [scientist], supports Strand 6).
- PO 2. Describe how a major milestone in science or technology has revolutionized the thinking of the time (e.g., global positioning system, telescopes, seismographs, photography).
- PO 3. Analyze the impact of a major scientific development occurring within the past decade.
- PO 4. Analyze the use of technology in science-related careers.

Concept 2: Nature of Scientific Knowledge

Understand how science is a process for generating knowledge.

PO 1. Describe how science is an ongoing process that changes in response to new information and discoveries.

PO 2. Describe how scientific knowledge is subject to change as new information and/or technology challenges prevailing theories.

PO 3. Apply the following scientific processes to other problem solving or decision making situations:

- observing
- questioning
- communicating
- comparing
- measuring
- classifying
- predicting
- organizing data
- inferring
- generating hypotheses
- identifying variables

Strand 3: Science in Personal and Social Perspectives**Concept 1: Changes in Environments**

Describe the interactions between human populations, natural hazards, and the environment.

PO 1. Analyze environmental risks (e.g., pollution, destruction of habitat) caused by human interaction with biological or geological systems.

PO 2. Analyze environmental benefits of the following human interactions with biological or geological systems:

- reforestation
- habitat restoration
- construction of dams

PO 3. Propose possible solutions to address the environmental risks in biological or geological systems.

Concept 2: Science and Technology in Society

Develop viable solutions to a need or problem.

PO 1. Propose viable methods of responding to an identified need or problem.

PO 4. Describe a scientific discovery that influences technology.

Strand 4: Life Science**Concept 3: Populations of Organisms in an Ecosystem**

Analyze the relationships among various organisms and their environment.

PO 4. Evaluate data related to problems associated with population growth (e.g., overgrazing, forest management, invasion of non-native species) and the possible solutions.

PO 5. Predict how environmental factors (e.g., floods, droughts, temperature changes) affect survival rates in living organisms.

Strand 6: Earth and Space Science**Concept 1: Structure of the Earth**

Describe the composition and interactions between the structure of the Earth and its atmosphere.

PO 4. Describe how the rock and fossil record show that environmental conditions have changed over geologic and recent time.