Standards for the Arizona Dark Skies & Energy Education Program

Arizona Science Standard articulated for Grade 6

Strand 1: Inquiry Process
- Concept 1: Observatios, Questions and Hypothesis (all 3 POs)
- Concept 2: Scientific Testing (Investigating and Modeling) (all 5 POs)
- Concept 3: Analysis and Conclusions (all 6 POs)
- Concept 4: Communication (all 5 POs)

Strand 2: History and Nature of Science
- Especially Concept 2: Nature of Scientific Knowledge

Strand 3: Science in Personal and Social Perspectives
- Concept 1: Changes in Environment
- Concept 2: Science and Technology in Society (all 4 POs)

Strand 4: Life Science
- Concept 4: Populations of Organisms in an Ecosystem (PO2)

Strand 5: Physical Science
- Concept 3: Transfer of Energy

Arizona Common Core Standards: English Language Arts and Literacy in Science and Technical Subjects for Grades 6-8

I. Reading Standards for Literacy in Science & Technology Subjects (RST)
   a. Standards in Key Ideas and Details
      i. Standards 6-8 RST 1, 2 and 3
   b. Integration of Knowledge and Ideas
      i. Standards 6-8 RST 7, 8 and 9

II. Writing Standards for Literacy in Science & Technology Subjects (WHST)
   a. Text Types and Purposes
      i. Standards 6-8 WHST 1, 2 and 3
   b. Production and Distribution of Writing
      i. Standards 6-8 WHST 4, 5 and 6
   c. Research to Build and Present Knowledge
      i. Standards 6-8 WHST 7, 8 and 9
   d. Range of Writing
      i. Standard 6-8 WHST 10

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The Three Dimensions of the Framework for the New Generation Science Standards

Scientific and Engineering Practices

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Crosscutting Concepts

1. Patterns
2. Cause and effect: Mechanism and explanation
3. Scale, proportion, and quantity
4. Systems and system models
5. Energy and matter: Flows, cycles, and conservation
6. Structure and function
7. Stability and change

Disciplinary Core Ideas

Physical Sciences

PS3: Energy

Life Sciences

LS2: Ecosystems: Interactions, energy, and dynamics

Earth and Space Sciences

ESS3: Earth and human activity

Engineering, Technology, and Applications of Science

ETS2: Links among engineering, technology, science, & society

The Next Generation Science Standards for Engineering, Technology, and the Applications of Science

ETS-ETSS: Engineering, Technology, Science and Society:

1. The interdependence of science, engineering and technology
   MAIN QUESTION (Grades 6-8): How do science and engineering build on and stimulate each other?
2. Influence of engineering, technology, and science, on society and the natural world
   MAIN QUESTION (Grades 6-8): What are the factors that drive technological change, and how do the technologies that are created affect society and the natural world?