

Alignment with Wyoming's Science Standards

This document evaluates the state's Education Standards for Science to determine alignment with content found in Cogno board games. Grades 3-8 were analyzed.



Highlighting Key

Indicates a significant amount of material addresses the standard

Indicates a moderate amount of material is present to develop student understanding of the standard

Grades K-4

CONTENT STANDARD 1. CONCEPTS AND PROCESSES

In the context of unifying concepts and processes, students develop an understanding of scientific content through inquiry. Science is a dynamic process; concepts and content are best learned through inquiry and investigation.

Grade 4 Benchmarks

Life Systems

1. Characteristics of Organisms: Students describe observable characteristics of living things, including structures that serve specific functions and everyday behaviors.

3. Organisms and Their Environments: Students show connections between living things, their basic needs, and the environments.

Earth and Space Systems

5. Objects in the Sky: Students describe observable objects in the sky and their patterns of movement.

Physical Systems

7. Properties of Objects: Students classify objects by properties that can be observed, measured, and recorded, including color, shape, size, weight, volume, texture, and temperature.

9. Physical Phenomena: Students investigate physical phenomena commonly encountered in daily life, including light, heat, electricity, sound, and magnetism.

Physical Systems

10. Position and Motion of Objects: Students demonstrate that pushing and pulling can change the position and motion of objects.

Grade 4 Academic Benchmarks

Physical Systems

4.A.S.1.7 Students demonstrate that pushing or pulling can change the position of objects.

CONTENT STANDARD 2: SCIENCE AS INQUIRY

Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment.

Grade 4 Benchmarks

1. Students research answers to science questions and present findings through appropriate means.

2. Students use the inquiry process to conduct simple scientific investigations.

C. Draw conclusions and accurately communicate results, making connections to daily life.

D. Pose or identify questions and make predictions

E. Conduct investigations to answer questions and check predictions.

Grade 4 Academic Benchmarks

4.A.S.2.1 Students use science reference materials to answer science questions and present findings.

4.A.S.2.2.a Students ask questions about objects, organisms or events in the environment.

4.A.S.2.2.d Students communicate results of an investigation.

CONTENT STANDARD 3. HISTORY AND NATURE OF SCIENCE IN PERSONAL AND SOCIAL DECISIONS

Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage.

Grade 4 Benchmark

1. Students recognize the nature and history of science.

A. Discuss how scientific ideas change over time

B. Describe contributions of scientists

Grade 4 Academic Benchmark

4.A.S.3.1 Students demonstrate the sequence of events which link a technological advance to their environment.

GRADES 5-8

CONTENT STANDARD 1. CONCEPTS AND PROCESSES

In the context of unifying concepts and processes, students develop an understanding of scientific content through inquiry. Science is a dynamic process; concepts and content are best learned through inquiry and investigation.

Grade 8 Benchmark

3. Evolution as a Theory: Students explain evolution as a theory and apply the theory to the diversity of species, which results from natural selection and the acquisition of unique characteristics through biological adaptation.

5. Behavior and Adaptation: Students recognize behavior as a response of an organism to an internal or environmental stimulus and connect the characteristics and behaviors of an organism to biological adaptation.

Earth and Space Systems

7. The Earth in the Solar System: Students describe Earth as the third planet in the Solar System and understand the effects of the sun as a major source of energy, gravitational forces, and motions of objects in the Solar System.

9. The Earth's History: Students systematize the Earth's history in terms of geologic evidence, comparing past and present Earth processes and identifying catastrophic events and fossil evidence.

Physical Systems

13. The Conservation of Matter and Energy: Students identify supporting evidence to explain conservation of matter and energy, indicating that matter or energy cannot be created or destroyed but is transferred from one object to another.

14. Effects of Motions and Forces: Students describe motion of an object by position, direction, and speed, and identify the effects of force and inertia on an object.

Grade 8 Academic Benchmark

8.A.S.1.4 Students describe Earth's features in relation to other objects in the Solar System.

8.A.S.1.7 Students demonstrate that pushing and pulling can change the position, direction, and motion of objects.

CONTENT STANDARD 2. SCIENCE AS INQUIRY

Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment.

Grade 8 Benchmark

1. Students research scientific information and present findings through appropriate means.

2. Students use inquiry to conduct scientific investigations.

Ask questions that lead to conducting an investigation

Draw conclusions based on evidence and make connections to applied scientific

concepts.

Clearly and accurately communicate the result of the investigation.

3. Students clearly and accurately communicate the result of their own work, as well as information obtained from other sources.

4. Students recognize the relationship between science and technology in meeting human needs

Grade 8 Academic Benchmark

8.A.S.2.1 Students use science reference materials to answer science questions and present findings.

8.A.S.2.2.a Students ask questions about objects, organisms, or events in the environment.

8.A.S.2.2.c Students communicate results of an investigation and match connections to daily life.

CONTENT STANDARD 3. HISTORY AND NATURE OF SCIENCE IN PERSONAL AND SOCIAL DECISIONS

Students recognize the nature of science, its history, and its connections to personal, social, economic, and political decisions. Historically, scientific events have had significant impacts on our cultural heritage.

Grade 8 Benchmark

1. Students explore the nature and history of science.

A. Students explore how scientific knowledge changes and grows over time, and impacts personal and social decisions.

B. Students explore the historical use of scientific information to make personal and social decisions.

2. Students explore how scientific information is used to make decisions.

A. The role of science in solving personal, local, and national problems.

B. Interdisciplinary connections of the sciences and connections to other subject areas and careers in science or technical fields.

Grade 8 Academic Benchmark

8.A.S.3.2.b Students group science topics with careers in science.

Please note that use of these standards does not imply this state's endorsement of Cogno.