

Alignment with Idaho'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

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

3.S.1.1.1 Label the parts of a system. (573.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

3.S.1.2.1 Make observations, collect data and evaluate it. (573.02.a)

3.S.1.2.2 Replicate and/or use models. (573.02.b)

Goal 1.3: Understand Constancy, Change, and Measurement

3.S.1.3.1 Measure changes that occur. (573.03.b)

3.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

3.S.1.6.1 Identify questions that can be answered by conducting scientific tests. (574.01.a)

3.S.1.6.2 Conduct scientific tests (574.01.b)

3.S.1.6.4 Use data to construct a reasonable explanation. (574.01.d)

3.S.1.6.5 Make simple predictions based on data. (574.01.e)

3.S.1.6.6 Identify logical alternative explanations. (574.01.f)

3.S.1.6.7 Communicate the results of tests to others. (574.01.g)

Goal 1.8: Understand Technical Communication

3.S.1.8.1 Read and give multi-step instructions. (583.02.a)

Standard 2: Physical Science

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

3.S.2.1.2 Identify the physical properties of solids, liquids, and gases. (575.01.b)

Goal 2.3: Understand the Total Energy in the Universe is Constant

3.S.2.3.1 Identify potential and kinetic energy. (590.03.a)

Standard 3: Biology

Goal 3.1: Understand the Theory of Biological Evolution

3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)

Standard 4: Earth and Space Systems

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

3.S.5.2.1 Describe how technology helps develop tools. (580.01.a)

3.S.5.2.2 Describe the development of tools over time. (580.01.b)

GRADE 4 SCIENCE

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a)

4.S.1.2.3 Make, describe and/or use models. (588.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

4.S.1.3.1 Describe how changes occur and can be measured. (588.03.b)

4.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (588.03.c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

4.S.1.6.1 Write questions that can be answered by conducting scientific tests. (589.01.a)

4.S.1.6.2 Conduct scientific tests. (589.01.b)

4.S.1.6.4 Use data to construct a reasonable explanation. (589.01.d)

4.S.1.6.5 Make predictions based on data. (589.01.e)

4.S.1.6.6 Analyze alternative explanations. (589.01.f)

4.S.1.6.7 Communicate the results of tests to others in multiple formats. (589.01.g)

Goal 1.8: Understand Technical Communication

4.S.1.8.1 Analyze and follow multi-step instructions. (598.02.a)

Standard 2: Physical Science

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b)

Standard 3: Biology

Goal 3.1: Understand the Theory of Biological Evolution

4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. (592.01.a)

Standard 4: Earth and Space Systems

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

4.S.4.1.1 Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors). (594.01.b)

4.S.4.1.2 Explain the effect of gravity on orbits and objects. (594.01.c)

4.S.4.1.3 Explain the effect of moon's gravity on Earth's tides. (594.01.c)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)

**GRADE 5
SCIENCE**

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

5.S.1.1.1 Compare and contrast different systems. (603.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions. (603.02.a)

5.S.1.2.3 Use models to explain or demonstrate a concept. (603.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

5.S.1.3.1 Analyze changes that occur in and among systems. (603.03.b)

5.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (603.03.c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

5.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (604.01.a)

5.S.1.6.4 Use evidence to analyze descriptions, explanations, predictions, and models. (604.01.d)

5.S.1.6.5 State a hypothesis based on observations. (604.01.e)

5.S.1.6.6 Compare alternative explanations and predictions. (604.01.f)

5.S.1.6.7 Communicate scientific procedures and explanations. (604.01.g)

Goal 1.8: Understand Technical Communication

5.S.1.8.1 Read and follow technical instructions. (613.02.a)

Standard 3: Biology

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

5.S.3.2.1 Communicate how plants convert energy from the Sun through photosynthesis. (608.01.a)

Standard 4: Earth and Space Systems

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift). (609.01.a)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

5.S.5.2.1 Describe how science and technology are part of a student's life. (610.01.a)

5.S.5.2.2 List examples of science and technology. (610.01.b)

**GRADE 6
SCIENCE**

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

6.S.1.1.1 Analyze different systems. (618.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

6.S.1.2.1 Explain how observations and data are used as evidence on which to base scientific explanations and predictions. (618.02.a)

6.S.1.2.3 Use models to explain or demonstrate a concept. (618.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

6.S.1.3.1 Analyze changes that occur in and among systems. (618.03.b)

6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (618.03.c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (619.02.a)

6.S.1.6.4 Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models. (619.2.d)

6.S.1.6.5 Test a hypothesis based on observations. (619.02.e)

6.S.1.6.6 Communicate scientific procedures and explanations. (619.02.g)

Goal 1.8: Understand Technical Communication

6.S.1.8.1 Read, give, and execute technical instructions. (628.01a)

Standard 2: Physical Science

Goal 2.2: Understand Concepts of Motion and Forces

6.S.2.2.1 Describe the effects of different forces (gravity and friction) on the movement, speed, and direction of an object. (620.03.d)

Standard 4: Earth and Space Systems

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms. (624.01.a)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

6.S.5.2.1 Describe how science and technology are part of our society. (625.01.a)

6.S.5.2.2 Describe how science and technology are interrelated. (625.01.b)

GRADE 7 Life SCIENCE

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

7.S.1.1.1 Define small systems as a part of a whole system. (633.01.a)

7.S.1.1.2 Determine how small systems contribute to the function of the whole. (633.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

7.S.1.2.1 Describe how observations and data are evidence on which to base scientific explanations and predictions. (633.02.a)

7.S.1.2.3 Use models to explain or demonstrate a concept. (633.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

7.S.1.3.1 Identify concepts of science that have been stable over time. (633.03.a)

7.S.1.3.2 Use observations to make defensible inferences. (633.02.b)

7.S.1.3.2 Recognize changes that occur within systems. (633.03.b)

7.S.1.3.3 Make metric measurements using appropriate tools. (633.03.c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

7.S.1.6.3 Evaluate data in order to form conclusions. (634.01.d)

7.S.1.6.4 Use evidence and critical thinking to accept or reject a hypothesis. (634.01.e)

7.S.1.6.5 Evaluate alternative explanations or predictions. (634.01.f)

7.S.1.6.6 Communicate and defend scientific procedures and explanations. (634.01.g)

Goal 1.8: Understand Technical Communication

7.S.1.8.1 Read and evaluate technical instructions. (643.02.a)

Standard 3: Biology

Goal 3.1: Understand the Theory of Biological Evolution

7.S.3.1.1 Describe how natural selection explains species change over time. (637.01.a)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

7.S.5.2.1 Explain how science and technology are interrelated. (640.01.a)

7.S.5.2.2 Explain how science advances technology. (640.01.b)

GRADE 8-9 PHYSICAL SCIENCE

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)

8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

8-9.PS.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)

8-9.PS.1.2.2 Develop models to explain concepts or systems. (648.02b)

8-9.PS.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

Goal 1.3: Understand Constancy, Change, and Measurement

8-9.PS.1.3.2 Analyze changes that can occur in and among systems. (648.03b)

8-9.PS.1.3.3 Measure and calculate using the metric system. (648.03c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)

8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)

Standard 2: Physical Science

Goal 2.2: Understand Concepts of Motion and Forces

8-9.PS.2.2.1 Explain motion using Newton's Laws of Motion. (650.04b)

Goal 2.3: Understand the Total Energy in the Universe is Constant

8-9.PS.2.3.1 Explain that energy can be transformed but cannot be created nor destroyed. (650.05a)

8-9.PS.2.3.2 Classify energy as potential and/or kinetic and as energy contained in a field. (650.05b)

Standard 5: Personal and Social Perspectives; Technology

Goal 5.2: Understand the Relationship between Science and Technology

8-9.PS.5.2.1 Explain how science advances technology. (655.01a)

8-9.PS.5.2.2 Explain how technology advances science. (655.01a)

8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)

GRADE 8-9 EARTH SCIENCE

Standard 1: Nature of Science

Goal 1.1: Understand Systems, Order, and Organization

8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)

8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

8-9.PS.1.2.1 Use observations and data as evidence on which to base scientific explanations.

(648.02a)

8-9.PS.1.2.2 Develop models to explain concepts or systems. (648.02b)

8-9.PS.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

Goal 1.3: Understand Constancy, Change, and Measurement

8-9.PS.1.3.2 Analyze changes that can occur in and among systems. (648.03b)

8-9.PS.1.3.3 Measure and calculate using the metric system. (648.03c)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)

8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)

Standard 4: Earth and Space Systems**Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems**

8-9.ES.4.1.1 Explain the current scientific theory that suggests that the solar system formed from a nebular cloud of dust and gas. (654.01a)

8-9.ES.4.1.2 Identify methods used to estimate geologic time. (654.01b)

8-9.ES.4.1.3 Show how interactions among the solid earth, oceans, atmosphere, and organisms have changed the earth system over time. (654.01c)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)

Standard 5: Personal and Social Perspectives; Technology**Goal 5.2: Understand the Relationship between Science and Technology**

8-9.ES.5.2.1 Explain how science advances technology. (655.01a)

8-9.ES.5.2.2 Explain how technology advances science. (655.01a)

8-9.ES.5.2.3 Explain how science and technology are pursued for different purposes. (655.01b)

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