

Alignment with Florida'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

Benchmark Number	Descriptor	Grade Level
SC.3.E.5.1	Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.	3
SC.3.E.5.2	Identify the Sun as a star that emits energy; some of it in the form of light.	3
SC.3.E.5.3	Recognize that the Sun appears large and bright because it is the closest star to Earth.	3
SC.3.E.5.4	Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome.	3
SC.3.E.5.5	Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.	3
SC.3.E.6.1	Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost.	3
SC.3.L.17.2	Recognize that plants use energy from the Sun, air, and water to make their own food.	3
SC.3.N.1.1	Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.	3
SC.3.N.1.2	Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.	3
SC.3.N.1.4	Recognize the importance of communication among scientists.	3
SC.3.N.1.5	Recognize that scientists question, discuss, and check each others' evidence and explanations.	3
SC.3.N.1.7	Explain that empirical evidence is information, such as observations or measurements, that is used to help validate explanations of natural phenomena.	3
SC.3.N.3.2	Recognize that scientists use models to help understand and explain how things work.	3
SC.3.P.10.2	Recognize that energy has the ability to cause motion or create change.	3

SC.3.P.10.3	Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another.	3
SC.3.P.10.4	Demonstrate that light can be reflected, refracted, and absorbed.	3
SC.4.E.5.1	Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly, and different stars can be seen in different seasons.	4
SC.4.N.1.3	Explain that science does not always follow a rigidly defined method ("the scientific method") but that science does involve the use of observations and empirical evidence.	4
SC.4.N.1.4	Attempt reasonable answers to scientific questions and cite evidence in support.	4
SC.4.N.1.7	Recognize and explain that scientists base their explanations on evidence.	4
SC.4.P.8.3	Explore the Law of Conservation of Mass by demonstrating that the mass of a whole object is always the same as the sum of the masses of its parts.	4
SC.4.P.10.1	Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion.	4
SC.4.P.10.2	Investigate and describe that energy has the ability to cause motion or create change.	4
SC.4.P.10.3	Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates.	4
SC.4.P.12.1	Recognize that an object in motion always changes its position and may change its direction.	4
SC.4.P.12.2	Investigate and describe that the speed of an object is determined by the distance it travels in a unit of time and that objects can move at different speeds.	4
SC.5.E.5.1	Recognize that a galaxy consists of gas, dust, and many stars, including any objects orbiting the stars. Identify our home galaxy as the Milky Way.	5
SC.5.E.5.2	Recognize the major common characteristics of all planets and compare/contrast the properties of inner and outer planets.	5
SC.5.E.5.3	Distinguish among the following objects of the Solar System -- Sun, planets, moons, asteroids, comets -- and identify Earth's position in it.	5
SC.5.L.17.1	Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.	5
SC.5.N.1.3	Recognize and explain the need for repeated experimental trials.	5
SC.5.N.1.5	Recognize and explain that authentic scientific investigation frequently does not parallel the steps of "the scientific method."	5
SC.5.N.1.6	Recognize and explain the difference between personal opinion/interpretation and verified observation.	5
SC.5.N.2.1	Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence.	5
SC.5.N.2.2	Recognize and explain that when scientific investigations are carried out, the evidence produced by those investigations should be replicable by others.	5
SC.5.P.8.4	Explore the scientific theory of atoms (also called atomic theory) by recognizing that all matter is composed of parts that are too small to be seen without magnification.	5
SC.5.P.10.1	Investigate and describe some basic forms of energy, including light,	5

	heat, sound, electrical, chemical, and mechanical.	
SC.5.P.10.2	Investigate and explain that energy has the ability to cause motion or create change.	5
SC.5.P.13.1	Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects.	5
SC.5.P.13.2	Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object.	5
SC.5.P.13.3	Investigate and describe that the more mass an object has, the less effect a given force will have on the object's motion.	5
SC.5.P.13.4	Investigate and explain that when a force is applied to an object but it does not move, it is because another opposing force is being applied by something in the environment so that the forces are balanced.	5
SC.6.E.7.5	Explain how energy provided by the sun influences global patterns of atmospheric movement and the temperature differences between air, water, and land.	6
SC.6.E.7.9	Describe how the composition and structure of the atmosphere protects life and insulates the planet.	6
SC.6.N.1.2	Explain why scientific investigations should be replicable.	6
SC.6.N.1.3	Explain the difference between an experiment and other types of scientific investigation, and explain the relative benefits and limitations of each.	6
SC.6.N.2.1	Distinguish science from other activities involving thought.	6
SC.6.N.2.2	Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.	6
SC.6.N.3.1	Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life.	6
SC.6.N.3.2	Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws.	6
SC.6.N.3.3	Give several examples of scientific laws.	6
SC.6.P.11.1	Explore the Law of Conservation of Energy by differentiating between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa.	6
SC.6.P.13.2	Explore the Law of Gravity by recognizing that every object exerts gravitational force on every other object and that the force depends on how much mass the objects have and how far apart they are.	6
SC.6.P.13.3	Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both.	6
SC.7.E.6.1	Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.	7
SC.7.L.15.2	Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.	7
SC.7.L.16.1	Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another.	7
SC.7.N.1.5	Describe the methods used in the pursuit of a scientific explanation	7

	as seen in different fields of science such as biology, geology, and physics.	
SC.7.N.1.6	Explain that empirical evidence is the cumulative body of observations of a natural phenomenon on which scientific explanations are based.	7
SC.7.N.1.7	Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community.	7
SC.7.N.3.1	Recognize and explain the difference between theories and laws and give several examples of scientific theories and the evidence that supports them.	7
SC.7.P.10.1	Illustrate that the sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors.	7
SC.7.P.10.2	Observe and explain that light can be reflected, refracted, and/or absorbed.	7
SC.7.P.10.3	Recognize that light waves, sound waves, and other waves move at different speeds in different materials.	7
SC.7.P.11.3	Cite evidence to explain that energy cannot be created nor destroyed, only changed from one form to another.	7
SC.8.E.5.1	Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance.	8
SC.8.E.5.2	Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars.	8
SC.8.E.5.3	Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition.	8
SC.8.E.5.4	Explore the Law of Universal Gravitation by explaining the role that gravity plays in the formation of planets, stars, and solar systems and in determining their motions.	8
SC.8.E.5.5	Describe and classify specific physical properties of stars: apparent magnitude (brightness), temperature (color), size, and luminosity (absolute brightness).	8
SC.8.E.5.7	Compare and contrast the properties of objects in the Solar System including the Sun, planets, and moons to those of Earth, such as gravitational force, distance from the Sun, speed, movement, temperature, and atmospheric conditions.	8
SC.8.E.5.9	Explain the impact of objects in space on each other including: the Sun on the Earth including seasons and gravitational attraction the Moon on the Earth, including phases, tides, and eclipses, and the relative position of each body.	8
SC.8.L.18.1	Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.	8
SC.8.L.18.4	Cite evidence that living systems follow the Laws of Conservation of Mass and Energy.	8
SC.8.N.1.6	Understand that scientific investigations involve the collection of relevant empirical evidence, the use of logical reasoning, and the application of imagination in devising hypotheses, predictions, explanations and models to make sense of the collected evidence.	8
SC.8.N.2.1	Distinguish between scientific and pseudoscientific ideas.	8
SC.8.N.2.2	Discuss what characterizes science and its methods.	8
SC.8.N.3.2	Explain why theories may be modified but are rarely discarded.	8

SC.8.N.4.2	Explain how political, social, and economic concerns can affect science, and vice versa.	8
SC.8.P.8.2	Differentiate between weight and mass recognizing that weight is the amount of gravitational pull on an object and is distinct from, though proportional to, mass.	8
SC.8.P.8.7	Explore the scientific theory of atoms (also known as atomic theory) by recognizing that atoms are the smallest unit of an element and are composed of sub-atomic particles (electrons surrounding a nucleus containing protons and neutrons).	8
SC.8.P.9.1	Explore the Law of Conservation of Mass by demonstrating and concluding that mass is conserved when substances undergo physical and chemical changes.	8

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