

Alignment with Alabama'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

Science, Grade 3, 2005

- 3.) Describe ways energy from the sun is used.
- 4.) Define force and motion.
- 6.) Identify structures and functions of the muscular and skeletal systems of the human body.
- 10.) Determine habitat conditions that support plant growth and survival.
- 11.) Describe Earth's layers, including inner and outer cores, mantle, and crust.
- 12.) Identify conditions that result in specific weather phenomena, including thunderstorms, tornadoes, and hurricanes.
- 14.) Describe the position of Earth, the moon, and the sun during the course of a day or month.

Science, Grade 4, 2005

- 2.) Compare different pitches of sound produced by changing the size, tension, amount, or type of vibrating material.
- 4.) Describe effects of friction on moving objects.
- 5.) Describe the interdependence of plants and animals.
- 7.) Describe geological features of Earth, including bodies of water, beaches, ocean ridges, continental shelves, plateaus, faults, canyons, sand dunes, and ice caps.
- 8.) Identify technological advances and other benefits of space exploration.
- 9.) Describe the appearance and movement of Earth and its moon.
- 10.) Describe components of our solar system.

Science, Grade 5, 2005

- 2.) Define mass, volume, and density.
- 4.) Describe forms of energy, including chemical, heat, light, and mechanical.
- 5.) Contrast ways in which light rays are bent by concave and convex lenses.
- 6.) Compare effects of gravitational force on Earth, on the moon, and within space.
- 9.) Describe the relationship of populations within a habitat to various communities and ecosystems.
- 10.) Identify spheres of Earth, including the geosphere, atmosphere, and hydrosphere.
- 11.) Compare distances from the sun to planets in our solar system.

Science, Grade 6, 2005

- 2.) Describe factors that cause changes to Earth's surface over time.
- 4.) Explain the plate tectonic theory.
- 8.) Describe how Earth's rotation, Earth's axial tilt, and distance from the equator cause variations in the heating and cooling of various locations on Earth.
- 9.) Identify the moon's phases.
- 10.) Describe components of the universe and their relationships to each other, including stars, planets and their moons, solar systems, and galaxies.
- 11.) Describe units used to measure distance in space, including astronomical units and light years.

Science, Grade 7, 2005

- 1.) Describe characteristics common to living things, including growth and development, reproduction, cellular organization, use of energy, exchange of gases, and response to the environment.
- 6.) Describe evidence of species variation due to climate, changing landforms, interspecies interaction, and genetic mutation.

Science, Grade 8, 2005

- 1.) Identify steps within the scientific process.
- 2.) Describe the structure of atoms, including the location of protons, neutrons, and electrons.
- 4.) State the law of conservation of matter.

8.) Identify Newton's three laws of motion.

10.) Differentiate between potential and kinetic energy.

11.) Explain the law of conservation of energy and its relationship to energy transformation, including chemical to electrical, chemical to heat, electrical to light, electrical to mechanical, and electrical to sound.

12.) Classify waves as mechanical or electromagnetic.

Science, Grade 9 - 12, Earth and Space Elective, 2005

1.) Describe sources of energy, including solar, gravitational, geothermal, and nuclear.

4.) Describe the production and transfer of stellar energies.

5.) Discuss various theories for the origin, formation, and changing nature of the universe and our solar system.

6.) Explain the length of a day and of a year in terms of the motion of Earth.

7.) Explain techniques for determining the age and composition of Earth and the universe.

8.) Explain the terms astronomical unit and light year.

9.) Relate the life cycle of stars to the H-R diagram.

10.) Identify scientists and their findings relative to Earth and space, including Copernicus, Galileo, Kepler, Newton, and Einstein.

11.) Describe pulsars, quasars, black holes, and galaxies.

12.) Describe challenges and required technologies for space exploration.

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