

SCIENCE

GRADE TWO

STANDARDS

Nevada Grades K-12 Content Standards

NATURE OF SCIENCE

Scientific Inquiry

- N2A Students understand that science is an active process of systematically examining the natural world.
- N5A Students understand that science involves asking and answering questions and comparing the answers to what scientists know about the world.
- N8A Students understand that scientific knowledge requires critical consideration of verifiable evidence obtained from inquiry and appropriate investigations.
- N12A Students understand that a variety of communication methods can be used to share scientific information.

Science, Technology, and Society

- N2B Students understand that many people contribute to the field of science.
- N5B Students understand that many people, from all cultures and levels of ability, contribute to the fields of science and technology.
- N8B Students understand the interactions of science and society in an ever-changing world.
- N12B Students understand the impacts of science and technology in terms of costs and benefits to society.

PHYSICAL SCIENCE

Matter

- P2A Students understand that matter has observable properties.
- P5A Students understand properties of objects and materials.
- P8A Students understand the properties and changes of properties in matter.
- P12A Students understand that atomic structure explains the properties and behavior of matter.

Forces and Motion

- P2B Students understand that position and motion of objects can be described.
- P5A Students understand that forces can change the position and motion of an object.
- P8A Students understand that position and motion of an object result from the net effect of the different forces acting on it.
- P12A Students understand the interactions between force and motion.

SCIENCE GRADE TWO (continued)

Energy

- P2C Students know heat, light, and sound can be produced.
- P5C Students understand that energy exists in different forms.
- P8C Students understand transfer of energy.
- P12C Students understand that there are some interactions between matter and energy.

EARTH AND SPACE SCIENCE

Atmospheric Processes and the Water Cycle

- E2A Students understand that changes in weather often involve water changing from one state to another.
- E5A Students understand the water cycle's relationship to weather.
- E8A Students understand the relationship between the Earth's atmosphere, topography, weather, and climate.
- E12A Students understand heat and energy transfer in and out of the atmosphere and influence weather and climate.

Solar System and Universe

- E2B Students understand there are objects in the sky which display patterns.
- E5B Students understand that there are many components in the Solar System including Earth.
- E8B Students understand characteristics of our Solar System that are part of the Milky Way galaxy.
- E12B Students know scientific theories of origins and evolution of the universe.

Earth's Composition and Structure

- E2C Students understand that Earth materials include rocks, soils, and water.
- E5C Students understand that features on the Earth's surface are constantly changed by a combination of slow and rapid processes.
- E8C Students understand that landforms result from a combination of constructive and destructive processes.
- E12C Students understand evidence for processes that take place on a geologic time scale.

LIFE SCIENCE

Heredity

- L2A Students understand that offspring resemble their parents.
- L5A Students understand that some characteristics are inherited some are not.
- L8A Students understand the role of genetic information in the continuation of a species.
- L12A Students understand how genetic information is passed from one generation to another.

Structure of Life

- L2B Students understand that living things have identifiable characteristics.
- L5B Students understand that living things have specialized structures that perform a variety of life functions.

SCIENCE GRADE TWO (continued)

- L8B Students understand that living things are composed of cells, which are specialized in multi-cellular organisms to perform a variety of life functions.
- L12B Students understand that all life forms, at all levels of organization, use specialized structure and similar processes to meet life's needs.

Organisms and Their Environment

- L2C Students understand that living things live in different places.
- L5C Students understand that there are a variety of ecosystems on Earth and organisms interact within their ecosystems.
- L8C Students understand how living and non-living components of ecosystems interact.
- L12C Students understand that ecosystems display patterns of organization, change, and stability as a result of the interactions and interdependencies between the living and non-living components of the Earth.

Diversity of Life

- L2D Students understand that there are many kinds of living things on Earth
- L5D Students understand that living things can be classified according to physical characteristics, behaviors, and habitats.
- L8D Students understand that life forms change over time, contributing to the variety of organisms found on the Earth.
- L12D Students understand biological evolution and diversity of life.

ESSENTIAL CONCEPTS, SKILLS, AND EXPERIENCES _____

NATURE OF SCIENCE

(Nature and History of Science objectives should be embedded throughout the year in the contexts of life, earth, and physical science.)

It is expected that students will:

- (2)1.1 record observations and explanations using words, numbers, charts, and pictures [N2A1]
- (2)1.2 keep a record in a science notebook of observations and measurements taken over time (weather, moon cycle, life cycle) [N2A1]
- (2)1.3 use equipment (pan balance, thermometer, funnel, ruler) to gather information [N2A2]
- (2)1.4 make and justify predictions based on observations [N2A3]
- (2)1.5 ask questions about the natural world [N2B2]
- (2)1.6 cooperate and contribute ideas within a group [N2B2]
- (2)1.7 explain that there are many kinds of scientists in the world [N2B1]
- (2)1.8 explain that many kinds of people do science [N2B1]
- (2)1.9 explain that we can do science in a classroom like scientists [N2B1]

SCIENCE GRADE TWO (continued)

PHYSICAL SCIENCE

It is expected that students will:

- (2)2.1 sort solids and liquids according to similarities and differences [P2A1; P2A3]
- (2)2.2 observe and describe solids and liquids [P2A1; P2A3]
- (2)2.3 investigate and describe how water changes back and forth from solid to liquid [P2A2]
- (2)2.4 describe and sort materials in terms of their observable properties (shape, weight, color, texture) [P2A3; P2A4]
- (2)2.5 investigate and describe how properties of materials can be changed by heating, freezing, mixing, cutting, and bending [P2A2]
- (2)2.6 differentiate between hot and cold [P2C2]
- (2)2.7 investigate and describe that sound is produced by vibrating objects [P2C1]

EARTH AND SPACE SCIENCE

It is expected that students will:

- (2)3.1 investigate and describe how the sun warms the land, air, and water [E2A1]
- (2)3.2 observe that water on Earth can be a liquid (rain) or a solid (snow and ice) and can go back and forth from one form to another [E2A2]
- (2)3.3 investigate, observe, describe and record how weather changes from day to day and seasonally throughout the year using measurable quantities (temperature, rainfall, wind speed and direction) [E2A3; E2A4]
- (2)3.4 observe, record over time, and describe patterns associated with the Sun and Moon [E2B1; E2B2; E2B3; E2B4]

LIFE SCIENCE

It is expected that students will:

- (2)4.1 explain that many different kinds of living things exist on Earth [L2C3]
- (2)4.2 investigate and describe how animals have offspring that are the same kind of animal, and that differences exist among individuals of the same kinds of animals [L2A1] [L2A2]
- (2)4.3 investigate, observe, and describe how animals grow and change through their life cycles [L2A2]
- (2)4.4 investigate, observe, and describe how animals use their senses [L2B1]
- (2)4.5 investigate and describe how animals use plants and other animals for food [L2C1]
- (2)4.6 explain that habitats include food, water, shelter, and space [L2C2]
- (2)4.7 explain how particular features of plants and animals help them live in different kinds of habitats, and that some plants and animals are extinct [L2C3; L2D2]
- (2)4.8 identify and sort animals by observable characteristics and/or behaviors [L2D1]