

# Health/Science Student Objectives by Grade and Unit

## Grades Kindergarten, One, Two and Three

### **Kindergarten: Finding the Moon (Earth Science)**

Students will:

- ◆ Compare the elements of the daytime and nighttime skies
- ◆ Infer that the phases of the moon repeat themselves every month
- ◆ Discuss what all living things need to survive
- ◆ Infer that the moon cannot support life
- ◆ Discover that the craters on the moon's surface were caused by the impact of rocks from space
- ◆ Predict the texture of the moon's surface
- ◆ Discuss how the shape of the moon seems to change over time
- ◆ Discover that the moon's phases are caused by changes in the amount of light reflected toward the Earth as the moon orbits earth
- ◆ Review what they have learned about the moon environment
- ◆ Gather and communicate information from careful observation and simple investigations through a variety of methods
- ◆ Identify and control variables
- ◆ Recognize scientific investigations involve asking open-ended questions
- ◆ Predict possible outcomes to a simple science investigation
- ◆ Design and conduct simple investigations to explore a question
- ◆ Collect, record, display, or interpret data
- ◆ Make and use models
- ◆ Compare objects' responses to differing variables
- ◆ Classify objects into categories with common attributes

### **Kindergarten: Guppies and Goldfish (Life Science)**

Students will:

- ◆ Name exterior body parts of fish
- ◆ Compare fish to observe similarities and differences
- ◆ Observe and describe fish behavior
- ◆ Observe how fish grow and move in different ways
- ◆ Compare the behavior of guppies to those of goldfish
- ◆ Identify the guppies by gender
- ◆ Gather and communicate information from careful observation and simple investigations through a variety of methods
- ◆ Identify and control variables
- ◆ Recognize scientific investigations involve asking open-ended questions
- ◆ Predict possible outcomes to a simple science investigation
- ◆ Design and conduct simple investigations to explore a question
- ◆ Collect, record, display, or interpret data
- ◆ Make and use models
- ◆ Compare objects' responses to differing variables
- ◆ Classify objects into categories with common attributes
- ◆ Describe fish interactions with environmental changes; such as, food, fresh water, and plants
- ◆ Recognize basic needs of most living thing
- ◆ Observe and record changes in living things
- ◆ Recognize how living things interact with each other and their environment

### **Kindergarten: Investigating Water (Physical Science)**

Students will:

- ◆ Describe some properties of water
- ◆ Conclude water drops tend to stick together
- ◆ Explain how water is able to travel up and apply this understanding to a new situation
- ◆ Conclude water takes on the shape of its container
- ◆ Predict whether objects float or sink
- ◆ Discover why an object is more likely to float or sink
- ◆ Compare plain and soapy water
- ◆ Examine bubble behaviors
- ◆ Predict whether or not substances will dissolve in water
- ◆ Describe what happens when different substances are mixed with water
- ◆ Predict what will happen to water when it is put in the freezer
- ◆ Observe the water expands when frozen
- ◆ Examine the effect of heat on the melting process
- ◆ Predict what will happen to cups of water when left standing several days
- ◆ Infer the water enters the air when it evaporates
- ◆ Infer that the water that forms outside a container during condensation comes from the air
- ◆ Gather and communicate information from careful observation and simple investigations through a variety of methods
- ◆ Identify and control variables
- ◆ Recognize scientific investigations involve asking open-ended questions
- ◆ Predict possible outcomes to a simple science investigation
- ◆ Design and conduct simple investigations to explore a question
- ◆ Collect, record, display, or interpret data
- ◆ Make and use models
- ◆ Compare objects' responses to differing variables
- ◆ Classify objects into categories with common attributes

### **Kindergarten: From Seed to Plant (Environmental/Life Science)**

Students will:

- ◆ Sort and classify a variety of objects into those they think are seeds and those they think are not
- ◆ Compare and draw conclusions about how much water plants need
- ◆ Identify how the seed coat protects the new plant inside
- ◆ Dissect a softened seed and identify its parts
- ◆ Learn the functions of each seed part
- ◆ Observe how roots and shoots are developing
- ◆ Identify roots and shoots on their sprouted seeds
- ◆ Predict what jobs stems do for plants
- ◆ Learn functions of a leaf
- ◆ Identify and diagram the complete life cycle of a pea plant
- ◆ Recognize what plants need in order to grow
- ◆ Gather and communicate information from careful observation and simple investigations through a variety of methods
- ◆ Identify and control variables
- ◆ Recognize scientific investigations involve asking open-ended questions
- ◆ Predict possible outcomes to a simple science investigation
- ◆ Design and conduct simple investigations to explore a question
- ◆ Collect, record, display, or interpret data
- ◆ Make and use models
- ◆ Compare objects' responses to differing variables
- ◆ Classify objects into categories with common attributes

### **Kindergarten: Five Senses (Health)**

Students will:

- ◆ Gather and communicate information from careful observation and simple investigations through a variety of methods
- ◆ Identify and control variables
- ◆ Recognize scientific investigations involve asking open-ended questions
- ◆ Predict possible outcomes to a simple science investigation
- ◆ Design and conduct simple investigations to explore a question
- ◆ Collect, record, display, or interpret data
- ◆ Make and use models
- ◆ Compare objects' responses to differing variables
- ◆ Classify objects into categories with common attributes
- ◆ Identify the five senses
- ◆ Name a body part used for each sense
- ◆ Compare objects using only one sense
- ◆ Classify objects using only one sense
- ◆ Describe how the five senses work together
- ◆ Describe ways to show proper care of eyes, ears, and nose
- ◆ Describe how each sense works
- ◆ Use one of the five senses to discover properties of objects in the environment

### **Grade One: Insects**

Students will

- ◆ develop a curiosity and interest in insects, and a respect for them as living things
- ◆ experience some of the great diversity of forms in the animal kingdom
- ◆ describe some physical characteristics and habits of insects
- ◆ compare and contrast insects
- ◆ observe the similarities and differences in the larvae, pupae and adult stages of insects that go through the complete metamorphosis
- ◆ provide for the needs of insects (air, water, food and space)
- ◆ acquire the vocabulary associated with insect life
- ◆ distinguish between helpful and harmful insects
- ◆ discriminate between insects and arachnids
- ◆ distinguish between moths and butterflies

### **Grade One: Pebbles, Sand and Silt**

Students will

- ◆ develop a growing curiosity and interest in the physical world around them
- ◆ observe, describe and sort earth materials based on properties
- ◆ separate earth materials by size using different techniques
- ◆ observe the similarities and differences in the materials in a river rock mixture: silt, sand, gravel, and small and large pebbles
- ◆ explore places where earth materials are found and ways that earth materials are used
- ◆ compare the ingredients in different soils
- ◆ acquire the vocabulary associated with earth materials
- ◆ gain early experiences that will contribute to their understanding of several pervasive themes that relate one scientific idea to another: **Structure, Change and Interaction**

### **Grade One: Solids, Liquids and Gases**

Students will

- ◆ examine the physical world around them
- ◆ observe and describe properties of matter
- ◆ see that the world is made of matter
- ◆ find that different forms of matter have different characteristics
- ◆ identify solids
- ◆ identify liquids
- ◆ identify gases
- ◆ observe that matter changes
- ◆ observe that solids float, dissolve or sink when mixed with liquids
- ◆ see that liquids mix, separate or hang in suspension when combined
- ◆ observe that gas is a form of matter that can take up space inside a solid or liquid
- ◆ find that matter retains its essential nature even when it is broken down into sizes too small to see
- ◆ see that matter can change: solid can become liquid and liquid can become solid
- ◆ see that when certain substances combine they can form entirely new substances
- ◆ observe that matter changes under pressure and heat

### **Grade One: Deserts**

Students will

- ◆ list characteristics of a desert environment

- ◆ locate desert regions of N. America and Africa
- ◆ name some common plants and animals indigenous to deserts
- ◆ identify some of the ways plants and animals have adapted to their desert habitat
- ◆ demonstrate a food chain common to the desert
- ◆ describe how human use can impact desert regions
- ◆ construct a graph

### **Grade One: Keeping Fit and Healthy**

Students will

- ◆ categorize foods according to the food groups in which they belong
- ◆ compare the numbers of servings per group that are necessary for maintaining good health
- ◆ describe the importance of eating three balanced meals each day
- ◆ select foods that make up a balanced meal
- ◆ analyze snack foods to determine their fat content
- ◆ identify foods that make nutritious snacks
- ◆ analyze which muscles are being used while performing various exercises
- ◆ conclude that exercise works the muscles
- ◆ identify muscles in upper arms
- ◆ observe muscles as they contract
- ◆ describe habits of rest and sleep that help people stay healthy
- ◆ compare the amounts of rest and sleep that different people get
- ◆ demonstrate the importance of washing the hands
- ◆ identify everyday good health and hygiene habits
- ◆ observe the benefits of using toothpaste to remove stains
- ◆ infer the importance of brushing and flossing teeth daily
- ◆ identify activities that promote good oral hygiene

### **Grade Two: Air and Weather**

Students will

- ◆ develop an interest in air and weather

- ◆ observe and describe the changes that occur in weather over time
- ◆ become familiar with instruments used to monitor weather conditions
- ◆ compare weather conditions using a bar graph
- ◆ experience air as a fluid that takes up space and can be compressed into a smaller space
- ◆ observe the force of air pressure pushing on objects
- ◆ observe and compare how moving air interacts with objects
- ◆ organize and communicate observations through drawing and writing
- ◆ acquire the vocabulary associated with properties of air and weather conditions
- ◆ gain early experiences that will contribute to the understanding of several pervasive themes that relate one scientific idea to another: **Pattern, Interaction** and **Change**

### **Grade Two: Balance and Motion**

Students will

- ◆ develop a growing curiosity and interest in the motion of objects
- ◆ investigate materials constructively during free exploration and in a guided discovery mode
- ◆ solve problems through trial and error
- ◆ develop persistence in tackling a problem
- ◆ explore concepts of balance, counterweight and stability
- ◆ observe systems that are unstable and modify them to reach equilibrium
- ◆ discover different ways to produce rotational motion
- ◆ construct and observe toys that spin
- ◆ explore and describe some of the variables that influence the spinning of objects
- ◆ observe and compare rolling systems with different-sized wheels
- ◆ explore and describe the motion of rolling spheres
- ◆ acquire the vocabulary associated with balance and motion
- ◆ gain early experiences that will contribute to the understanding of several pervasive themes that relate one scientific idea to another: **Change** and **Interaction**

### **Grade Two: New Plants**

Students will

- ◆ develop a curiosity and interest in plants as living things
- ◆ investigate the diversity of forms in the plant kingdom
- ◆ observe and describe the changes that occur as plants grow and develop
- ◆ become familiar with the structures of flowering plants (root, stem, leaf, bud, flower, seed)
- ◆ discover various ways that new plants can develop from mature plants
- ◆ compare change over time in different kinds of plants
- ◆ organize and communicate observations through drawing and writing
- ◆ acquire the vocabulary associated with the structures of plants
- ◆ gain early experiences that will contribute to the understanding of several pervasive themes that relate one scientific idea to another: **Structure** and **Change**

### **Grade Two: Under the Sea - Our Oceans**

Students will

- ◆ develop an interest and curiosity about the ocean
- ◆ collect and organize data regarding the ocean

- ◆ acquire the vocabulary used in connection with the ocean
- ◆ investigate the physical characteristics of the ocean
- ◆ investigate the zones of the ocean
- ◆ observe, describe and record properties of the ocean
- ◆ utilize language and math skills in the context of the ocean
- ◆ collect and organize data about ocean life forms
- ◆ collect and organize data about ocean survival techniques
- ◆ compare the zones of the ocean
- ◆ investigate the ocean food chain
- ◆ explore ocean issues and the human impact on the ocean
- ◆ explore the Iowa connections with the ocean
- ◆ investigate personal actions which can be pursued regarding the ocean

### **Grade Two: What Makes Me Sick?**

Students will

- ◆ examine drawings or pictures of how bacteria and viruses look under a microscope
- ◆ understand that each type of bacteria or virus causes a different sickness
- ◆ observe how water droplets travel in a simulated sneeze
- ◆ conclude that covering your mouth and nose will help prevent germs from spreading
- ◆ understand that germs exist almost everywhere, including your hands
- ◆ demonstrate how germs on your hands can be spread
- ◆ demonstrate how mucous membranes help prevent germs, dust and other objects from entering the human body
- ◆ conclude that mucous membranes help protect the human body from germs
- ◆ observe ways in which germs can be spread
- ◆ develop a plan to help prevent germs from spreading
- ◆ conclude that certain conditions contribute the spread of germs
- ◆ show examples of how a sickness or injury might have been prevented
- ◆ understand that some advertisements promote products that can be harmful to you
- ◆ design an advertisement that promotes healthful activities
- ◆ distinguish healthful activities from harmful ones

### **Grade Three: A System in the Sky**

Students will

- ◆ predict how sun, Earth and moon move together
- ◆ develop an awareness of what makes day and night
- ◆ develop a working knowledge of the difference between rotating and revolving
- ◆ investigate and compare the relationship between the relative size and distance of the sun, Earth and moon
- ◆ investigate and manipulate a model to explain solar and lunar eclipses and their differences
- ◆ investigate the movements of the moon that result in its phases
- ◆ identify and compare properties of the surface of the moon and Earth
- ◆ explain how the tilt of the Earth on its axis creates the seasons

### **Grade Three: Ideas & Inventions**

Students will

- ◆ use techniques to see details about the world that would otherwise be difficult to observe
- ◆ explore the techniques of chromatography, rubbing, carbon printing and mirror imagery
- ◆ record and compare patterns observed in leaf veins, fingerprints, and ink pigments
- ◆ gain experience with texture and pattern in a variety of materials
- ◆ express individual and group creativity through open-ended discoveries and inventions
- ◆ invent applications to extend the use of specific techniques
- ◆ acquire the vocabulary associated with texture and patterns of materials and exercise language in the context of science
- ◆ gain early experiences that will contribute to the understanding of several pervasive themes that relate one scientific idea to another: **Pattern, Structure, Interaction, Change and System**

### **Grade Three: Rainforest**

Students will

- ◆ learn characteristics of rainforest
- ◆ discover rainforest locations in the world
- ◆ identify vegetation and animals in four layers of rainforest
- ◆ discover people of the rainforests
- ◆ compare and contrast rainforests to other forests
- ◆ learn household products that come from rainforests
- ◆ learn about problems facing rainforests today
- ◆ research an endangered species from the rainforest
- ◆ discuss problems facing rainforests and write a letter of persuasion to stop destruction
- ◆ evaluation

### **Grade Three: What's For Lunch?**

Students will

- ◆ develop an awareness of nutrients and how they are utilized by the body
- ◆ analyze their diet based on suggestions by the USDA Food Guide Pyramid
- ◆ utilize food labels to identify the nutritional value of various foods
- ◆ explain and describe safe food preparation
- ◆ investigate the beginning of the digestive process

- ◆ identify the different kinds of teeth and their uses and the best way to keep them clean
- ◆ investigate how foods are processed after they are swallowed and what causes body noises