



# IDAHO

STATE DEPARTMENT OF EDUCATION

# Science

Approved by the Idaho State Board of Education, April 17, 2009

**IDAHO CONTENT STANDARDS  
GRADE 1  
SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	No objectives at this grade level.						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	1.S.1.2.1 Make observations, collect data, and use data. (543.01.a)						
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	1.S.1.3.1 Measure in both standard and non-standard units. (543.02.b)						
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	1.S.1.4.1 Explain the concepts of past, present, and future. (543.03.a)						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives at this grade level.						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	1.S.1.6.1 Make and record observations. (544.01.a)						
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	1.S.1.7.1 Demonstrate cooperation and interaction skills. (553.01.a)						
<b>Goal 1.8: Understand Technical Communication</b>	1.S.1.8.1 Follow multi-step instructions. (553.02.a)						

**Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	1.S.2.1.1 Describe properties of objects. (545.01.a)						
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	1.S.2.2.1 Describe the position and motion of objects. (ex. revolve, rotate, at rest, float, and fall) (545.02.a)						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
GRADE 1  
SCIENCE**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	1.S.3.1.1 Describe the life cycle of a plant (seed, growth, reproduction, death). (547.01.a)	1.S.3.1.2 Describe the life cycle of an animal (birth, development, reproduction, death). (547.01.a)					
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	1.S.3.2.1 State that living things need food to survive. (548.01.a)						
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	No objectives at this grade level.						

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	1.S.4.1.1 Identify the four seasons and their characteristics for a local region. (549.01.a)						
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	1.S.5.1.1 Identify the characteristics of local natural environments. (playground, backyard). (551.01.a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	No objectives at this grade level.						
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	No objectives at this grade level.						

## IDAHO CONTENT STANDARDS GRADE 2 SCIENCE

### Standard 1: Nature of Science

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	No objectives at this grade level.						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	2.S.1.2.1 Make observations, record and interpret data. (558.01.a)						
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	2.S.1.3.1 Measure in standard and non-standard units. (558.01.b)						
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	2.S.1.4.1 Apply the concepts of past, present, and future. (558.03.a)						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	2.S.1.5.1 Identify shape and use of objects. (558.04.a)						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	2.S.1.6.1 Identify questions to be investigated. (559.01.a)	2.S.1.6.2 Make observations. (559.01.b)	2.S.1.6.3 Analyze information and evidence. (559.01.d)	2.S.1.6.4 Communicate observations. (559.01.f)			
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	2.S.1.7.1 Practice cooperation and interaction skills. (568.01.a)						
<b>Goal 1.8: Understand Technical Communication</b>	2.S.1.8.1 Follow multi-step instructions. (568.02.a)						

### Standard 2: Physical Science

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	2.S.2.1.1 List properties of an object. (560.01.a)						
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	2.S.2.2.1 Explain how force affects the position and motion of objects. (560.01.a)						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
GRADE 2  
SCIENCE**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	No objectives at this grade level.						
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	2.S.3.2.1 Identify four basic needs of all living things (food, shelter, water, space). (563.01.a)	2.S.3.2.2 Discuss how animals are suited to live in different habitats. (547.01.b)					
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	No objectives at this grade level.						

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	2.S.4.1.1 Describe the characteristics of different weather conditions. (564.01.b)						
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	2.S.5.1.1 Compare and contrast man-made and natural environments. (566.01.a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	2.S.5.2.1 Identify tools people have invented for everyday life and for scientific investigations. (565.01.b)						
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	No objectives at this grade level.						

## IDAHO CONTENT STANDARDS GRADE 3 SCIENCE

### **Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	3.S.1.1.1 Label the parts of a system. (573.01.a)						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	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)					
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	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)					
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	No objectives at this grade level.						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	3.S.1.5.1 Describe the relationship between shape and use. (573.05.a)						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	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.1.6.3 Use appropriate tools and techniques to gather and display data. (574.01.c)	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)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives at this grade level.						
<b>Goal 1.8: Understand Technical Communication</b>	3.S.1.8.1 Read and give multi-step instructions. (583.02.a)						

### **Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	3.S.2.1.1 Use instruments to measure properties. (575.01.a)	3.S.2.1.2 Identify the physical properties of solids, liquids, and gases. (575.01.b)	3.S.2.1.3 Explain that heating and cooling can cause changes of state in common materials. (575.01.c)				
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	No objectives at this grade level.						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	3.S.2.3.1 Identify potential and kinetic energy. (590.03.a)						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
GRADE 3  
SCIENCE**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)						
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)	3.S.3.2.2 Compare and contrast the energy requirements of plants and animals. (593.01.a)	3.S.3.2.3 Label a food chain that shows how organisms cooperate and compete in an ecosystem. (578.01.b)	3.S.3.2.4 Diagram the food web and explain how organisms both cooperate and compete in ecosystems. (593.01.b)			
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	No objectives at this grade level.						

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)						
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	3.S.5.1.1 Identify local environmental issues. (581.01.a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	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)					
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	3.S.5.3.1 Explain the concept of recycling. (581.03.a)						

## IDAHO CONTENT STANDARDS GRADE 4 SCIENCE

### **Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a)	4.S.1.2.2 Define observations and inferences. (588.02.b)	4.S.1.2.3 Make, describe and/or use models. (588.02.c)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	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)					
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	No objectives at this grade level.						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	4.S.1.5.1 Explain the relationship between shape and use. (588.05.a)						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	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.1.6.3 Use appropriate tools and techniques to gather and display data. (589.01.c)	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)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives at this grade level.						
<b>Goal 1.8: Understand Technical Communication</b>	4.S.1.8.1 Analyze and follow multi-step instructions. (598.02.a)						

### **Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	4.S.2.1.1 Use instruments to measure properties (590.01.a)	4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b)	4.S.2.1.3 Explain the changes caused by heating and cooling materials. (590.01.c)				
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	No objectives at this grade level.						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
GRADE 4  
SCIENCE**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. (592.01.a)	4.S.3.1.2 Describe the difference between vertebrate and invertebrate animals. (592.01.c)	4.S.3.1.3 Classify the five groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics. (592.01.c)				
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	No objectives at this grade level.						
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	No objectives at this grade level.						

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	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)				
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	No objectives at this grade level.						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)						
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	No objectives at this grade level.						

# IDAHO CONTENT STANDARDS

## GRADE 5

### SCIENCE

Cognitive level codes:

- B: Memorize
- C: Perform procedures
- D: Demonstrate understanding
- E: Conjecture, generalize, prove
- F: Solve non-routine problems, make connections

Objectives shaded in yellow should be assessed in the classroom, but not included on the ISAT assessment.

#### **Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	5.S.1.1.1 Compare and contrast different systems.  CL: E Content Limit: Compare one item to another; do not make multiple-item comparisons. Systems tested should be familiar to students. Systems that could be used to develop items include classroom systems, school systems (student: teacher; principal), cell systems, plant systems, plate tectonics, and rock cycle.						

<p><b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b></p>	<p>5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions.</p> <p>CL: E Content Limit: Explanations and predictions are limited to directly described or illustrated information in the item.</p>	<p>5.S.1.2.2 Explain the difference between observation and inference.</p> <p>CL: D Content Limit: Observations are made with our senses and tools to collect data, inferences are statements based upon an interpretation of data.</p>	<p>5.S.1.2.3 Use models to explain or demonstrate a concept.</p> <p>CL: D Content Limit: Examples may include: Rock cycle, model of plant cell, and model of animal cell, molecular position and motion of solid, liquids and gases.</p>				
<p><b>Goal 1.3: Understand Constancy, Change, and Measurement</b></p>	<p>5.S.1.3.1 Analyze changes that occur in and among systems.</p> <p>CL: E Content Limit: Analysis is limited to changes directly described or illustrated in the item.</p>	<p>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.</p> <p>CL: C Content Limit: Measurement should be in meter, liter, and grams. Reference Math Content 2.M.1.1</p>					
<p><b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b></p>	<p>No objectives at this grade level.</p>						

<p><b>Goal 1.5: Understand Concepts of Form and Function</b></p>	<p>5.S.1.5.1 Explain how the shape or form of an object or system is frequently related to its use or function.</p> <p>CL: E Content Limit: Items are limited to very visual content, including the streamlining of a fish's body and the webbing on a duck's foot.</p>						
<p><b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b></p>	<p>5.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments.</p> <p>CL: C Content Limit: Given the description of a simple experiment the student will be able to identify the question being asked.</p>	<p>5.S.1.6.2 Conduct scientific investigations using a control and a variable.</p> <p>CL: C Content Limit: Assessed in the classroom, not on the ISAT.</p>	<p>5.S.1.6.3 Select and use appropriate tools and techniques to gather and display data.</p> <p>CL: C Content Limit: Content should be limited to metric rulers, bar graphs, and basic tables.</p>	<p>5.S.1.6.4 Use evidence to analyze descriptions, explanations, predictions, and models.</p> <p>CL: E Content Limit: Students will be presented a set of evidence or series of observations and be asked to derive information or make predictions based on this evidence.</p>	<p>5.S.1.6.5 State a hypothesis based on observations.</p> <p>CL: E Content Limit: When provided sequential graphics, students will be able to select the most logical hypothesis of what is being tested from a list of possible options.</p>	<p>5.S.1.6.6 Compare alternative explanations and predictions.</p> <p>CL: E Content Limit: When provided sequential graphics and a set of possible explanations, students will be able to select the most logical explanation from a list of possible options.</p>	<p>5.S.1.6.7 Communicate scientific procedures and explanations.</p> <p>CL: Content Limit: Assessed in the classroom, not on the ISAT.</p>
<p><b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b></p>	<p>No objectives at this grade level.</p>						
<p><b>Goal 1.8: Understand Technical Communication</b></p>	<p>5.S.1.8.1 Read and follow technical instructions.</p> <p>CL: C Content Limit: Assessed in the classroom, not on the ISAT.</p>						

## Standard 2: Physical Science

Goals:	Objective 1	Objective 2	Objective 3
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	5.S.2.1.1 Describe the differences among elements, compounds, and mixtures.  CL: D Content Limit: Students will be able to define an element, compound, and mixture.	5.S.2.1.2 Compare the physical differences among solids, liquids and gases.  CL: D Content Limit: Students will be able to recognize the differences in molecular distance between a solid, a liquid, and a gas, as well as differences in basic molecular motion.	5.S.2.1.3 Explain the nature of physical change and how it relates to physical properties.  CL: D Content Limit: Students will be able to recognize the change(s) in physical properties that take place when physical changes occur including ice melting into water and water being heated into steam and the reverse processes.
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	No objectives at this grade level.		
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.		
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.		
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.		

## Standard 3: Biology

Goals:	Objective 1	Objective 2
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	No objectives at this grade level.	
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	5.S.3.2.1 Communicate how plants convert energy from the Sun through photosynthesis.  CL: D Content Limit: Students will know that chlorophyll, carbon dioxide, and water are necessary for photosynthesis to occur. Additionally, students will know that the energy necessary to “power” the photosynthetic reaction is provided by the Sun.	
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	5.S.3.3.1 Compare and contrast the structural differences between plant and animal cells.  CL: E Content Limit: Address only the readily observable organelles: cell wall, cell membrane, and chloroplast, mitochondria, vacuoles, nucleus	5.S.3.3.2 Explain the concept that traits are passed from parents to offspring.  CL: D Content Limit: Traits should be limited to clearly observable physical characteristics including eye color, hair color and texture, and widow’s peak.

## Standard 4: Earth and Space Systems

Goals:	Objective 1
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (weathering, erosion, tectonics and continental drift).  CL: D Content Limit: The role wind and water play in erosion, and the formation of earthquakes and volcanoes can all be addressed.
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	5.S.4.2.1 Explain the rock cycle and identify the three classifications of rocks.  CL: D Content Limit: How sedimentary, igneous, and metamorphic rocks are formed.

## **Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	5.S.5.1.1 Identify issues for environmental studies.  CL: E Content Limit: Content should be limited to events in the local school or community environment. For example: Food waste from the hot lunch program, storm runoff entering a local stream, and the impact of wild fires.	
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	5.S.5.2.1 Describe how science and technology are part of a student's life.  CL:D Content Limit: Technology may include that which is available within a school.	5.S.5.2.2 List examples of science and technology. CL: B Content Limit: Science is the process that increases and informs our knowledge of the natural world. Technology is the tool we use to advance our scientific knowledge.
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	5.S.5.3.1 Identify the differences between renewable and nonrenewable resources.  CL: D Content Limit: Student will distinguish between renewable and non renewable resources. Renewable resources to include wind, solar and trees. Nonrenewable resources to include fossil fuels and minerals. Define recycling and identify common materials that can be recycled. List renewable and nonrenewable resources that can be recycled.	

**IDAHO CONTENT STANDARDS  
GRADE 6  
SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	6.S.1.1.1 Analyze different systems. (618.01.a)						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	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.1.2.2 Use observations to make inferences. (618.02.b)	6.S.1.2.3 Use models to explain or demonstrate a concept. (618.02.c)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	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)					
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	No objectives at this grade level.						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function. (618.05.a)						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (619.02.a)	6.S.1.6.2 Conduct scientific investigations using a control and variables. Repeat same experiment using alternate variables. (619.02.b)	6.S.1.6.3 Select and use appropriate tools and techniques to gather and display data. (619.02.c)	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)	
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives at this grade level.						
<b>Goal 1.8: Understand Technical Communication</b>	6.S.1.8.1 Read, give, and execute technical instructions. (628.01a)						

**IDAHO CONTENT STANDARDS  
GRADE 6  
SCIENCE**

**Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	6.S.2.1.1 Compare and contrast the differences among elements, compounds and mixtures. (620.01.a)	6.S.2.1.2 Define the properties of matter. (620.01.b)	6.S.2.1.3 Compare densities of equal volumes of a solid, a liquid, or a gas. (619.01.c)	6.S.2.1.4 Describe the effect of temperature on density. (620.01.c)	6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor). (620.01.d)		
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	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)						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	No objectives at this grade level.						
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	No objectives at this grade level.						
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	6.S.3.3.1 Identify the different structural levels of which an organism is comprised (cells, tissues, organs, organ systems, and organisms). (621.01.a)	6.S.3.3.2 Analyze the structural differences between plant and animal cells. (621.01.b)	6.S.3.3.3 Describe how traits are passed from parents to offspring. (621.01.c)				

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms. (624.01.a)	6.S.4.1.2 Explain the water cycle and its relationship to weather and climate. (624.01.b)	6.S.4.1.3 Identify cumulus, cirrus, and stratus clouds and how they relate to weather changes. (624.01.c)				
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
GRADE 6  
SCIENCE**

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	6.S.5.1.1 Identify issues for environmental studies. <a href="#">(626.01.a)</a>						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	6.S.5.2.1 Describe how science and technology are part of our society. <a href="#">(625.01.a)</a>	6.S.5.2.2 Describe how science and technology are interrelated. <a href="#">(625.01.b)</a>					
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	6.S.5.3.1 Explain the difference between renewable and nonrenewable resources. <a href="#">(626.03.a)</a>						

**IDAHO CONTENT STANDARDS  
GRADE 7  
Life SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	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)	7.S.1.1.3 Identify the different structural levels of an organism (cells, tissues, organs, and organ systems). (633.01.b)			
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	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.1.2.2 Use observations to make defensible inferences. (633.02.b)	7.S.1.2.3 Use models to explain or demonstrate a concept. (633.02.c)			
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	7.S.1.3.1 Identify concepts of science that have been stable over time. (633.03.a)	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)			
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	Reference to objective 7.S.3.2.1					
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives at this grade level.					

<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	7.S.1.6.1 Identify controls and variables used in scientific investigations. (634.01.b)	7.S.1.6.2 Use appropriate tools and techniques to gather and display data. (634.01.c)	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)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives at this grade level.					
<b>Goal 1.8: Understand Technical Communication</b>	7.S.1.8.1 Read and evaluate technical instructions. (643.02.a)					

**Standard 2: Physical Science** No Objectives at this grade level

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	7.S.3.1.1 Describe how natural selection explains species change over time. (637.01.a)				
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	7.S.3.2.1 Describe how energy stored in food is primarily derived from the Sun through photosynthesis. (638.01.a)	7.S.3.2.2 Describe how the availability of resources (matter and energy) limits the distribution and abundance of organisms. (638.01.b)	7.S.3.2.3 Illustrate how atoms and molecules cycle among the living and nonliving components of the biosphere. (638.01.c)	7.S.3.2.4 Identify how energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores, carnivores, and decomposers. (638.01.d)	
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	7.S.3.3.1 Explain the relationships among specialized cells, tissues, organs, organ systems, and organisms. (636.01.a)	7.S.3.3.2 Identify the parts of specialized plant and animal cells. (636.01.b)	7.S.3.3.3 Identify the functions of cell structures. (636.01.b)	7.S.3.3.4 Describe cell functions that involve chemical reactions. (630.01.c)	7.S.3.3.5 Describe how dominant and recessive traits are inherited. (636.01.e)

**Standard 4: Earth and Space Systems** No objective at this grade level

## **Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	No objectives at this grade level.	
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	7.S.5.2.1 Explain how science and technology are interrelated. <a href="#">(640.01.a)</a>	7.S.5.2.2 Explain how science advances technology. <a href="#">(640.01.b)</a>
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	7.S.5.3.1 Identify alternative sources of energy. <a href="#">(641.03.a)</a>	

**IDAHO CONTENT STANDARDS  
GRADE 8-9  
EARTH SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	8-9.ES.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)	8-9.ES.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)					
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	8-9.ES.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)	8-9.ES.1.2.2 Develop models to explain concepts or systems. (648.02b)	8-9.ES.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	8-9.ES.1.3.1 Measure changes that can occur in and among systems. (648.03b)	8-9.ES.1.3.2 Analyze changes that can occur in and among systems. (648.03b)	8-9.ES.1.3.3 Measure and calculate using the metric system. (648.03c)				
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	No objectives in Earth Science.						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives in Earth Science.						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	8-9.ES.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)	8-9.ES.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)	8-9.ES.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)	8-9.ES.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)	8-9.ES.1.6.5 Analyze alternative explanations and models. (649.01e)	8-9.ES.1.6.6 Communicate and defend a scientific argument. (649.01f)	8-9.ES.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives in Earth Science.						
<b>Goal 1.8: Understand Technical Communication</b>	8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)						

**Standard 2: Physical Science** No goals or objectives in Earth Science.

**Standard 3: Biology** No goals or objectives in Earth Science.

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	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)				
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)						

**IDAHO CONTENT STANDARDS  
GRADE 8-9  
EARTH SCIENCE**

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	8-9.ES.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	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)				
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)						

**IDAHO CONTENT STANDARDS  
GRADE 8-9  
PHYSICAL SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	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)					
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	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)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	8-9.PS.1.3.1 Measure changes that can occur in and among systems. (648.03b)	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)				
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	No objectives in Physical Science.						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives in Physical Science.						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	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.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)	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)	8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives in Physical Science.						
<b>Goal 1.8: Understand Technical Communication</b>	8-9.PS.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)						

**Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	No objectives in Physical Science.						
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	8-9.PS.2.2.1 Explain motion using Newton’s Laws of Motion. (650.04b)						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	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)					
<b>Goal 2.4: Understand the Structure of Atoms</b>	8-9.PS.2.4.1 Describe the properties, function, and location of protons, neutrons, and electrons. (650.01a)	8-9.PS.2.4.2 Explain the processes of fission and fusion. (650.01b)	8-9.PS.2.4.3 Describe the characteristics of isotopes. (650.01c)	8-9.PS.2.4.4 State the basic electrical properties of matter. (650.01d)	8-9.PS.2.4.5 Describe the relationships between magnetism and electricity.		

[Page hyperlinked from text “8th & 9<sup>th</sup> Physical Science” under Specific Courses on Science standards & assessments page]

<b>Goal 2.5: Understand Chemical Reactions</b>	8-9.PS.2.5.1 Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. <a href="#">(650.03a)</a>						
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**IDAHO CONTENT STANDARDS  
GRADE 8-9  
PHYSICAL SCIENCE**

**Standard 3: Biology** No goals or objectives in Physical Science.

**Standard 4: Earth and Space Systems** No goals or objectives in Physical Science.

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	No objectives in Physical Science.						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	8-9.PS.5.2.1 Explain how science advances technology. <a href="#">(655.01a)</a>	8-9.PS.5.2.2 Explain how technology advances science. <a href="#">(655.01a)</a>	8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes. <a href="#">(656.01b)</a>				
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	No objectives in Physical Science.						

**IDAHO CONTENT STANDARDS  
GRADE 9-10  
BIOLOGY**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	9-10.B.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)	9-10.B.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)					
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	9-10.B.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)	9-10.B.1.2.2 Develop models to explain concepts or systems. (648.02b)	9-10.B.1.2.3 Develop scientific explanations based on knowledge, logic and analysis. (648.02c)				
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	9-10.B.1.3.1 Measure changes that can occur in and among systems. (648.03b)	9-10.B.1.3.2 Analyze changes that can occur in and among systems. (648.03b)	9-10.B.1.3.3 Measure and calculate using the metric system. (648.03c)				
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	Reference to 7.S.3.2.1						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives in Biology.						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	9-10.B.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)	9-10.B.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)	9-10.B.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)	9-10.B.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)	9-10.B.1.6.5 Analyze alternative explanations and models. (649.01e)	9-10.B.1.6.6 Communicate and defend a scientific argument. (649.01f)	9-10.B.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	No objectives in Biology.						
<b>Goal 1.8: Understand Technical Communication</b>	9-10.B.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)						

**Standard 2: Physical Science** No goals or objectives in Biology.

**IDAHO CONTENT STANDARDS  
GRADE 9-10  
BIOLOGY**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	9-10.B.3.1.1 Use the theory of evolution to explain how species change over time. (652.01a)	9-10.B.3.1.2 Explain how evolution is the consequence of interactions among the potential of a species to increase its numbers, genetic variability, a finite supply of resources, and the selection by the environment of those offspring better able to survive and reproduce. (652.01a)					
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	9-10.B.3.2.1 Explain how matter tends toward more disorganized states (entropy). (653.01a)	9-10.B.3.2.2 Explain how organisms use the continuous input of energy and matter to maintain their chemical and physical organization. (653.01b)	9-10.B.3.2.3 Show how the energy for life is primarily derived from the sun through photosynthesis. (653.01c)	9-10.B.3.2.4 Describe cellular respiration and the synthesis of macromolecules. (653.01d)	9-10.B.3.2.5 Show how matter cycles and energy flows through the different levels of organization of living systems (cells, organs, organisms, communities) and their environment. (653.01h)		
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	9-10.B.3.3.1 Identify the particular structures that underlie the cellular functions. (651.01a)	9-10.B.3.3.2 Explain cell functions involving chemical reactions. (651.01b)	9-10.B.3.3.3 Explain how cells use DNA to store and use information for cell functions. (651.01c)	9-10.B.3.3.4 Explain how selective expression of genes can produce specialized cells from a single cell. (651.01e)			

**Standard 4: Earth and Space Systems** No goals or objectives in Biology.

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	9-10.B.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, forest health, and agricultural production. (656.01a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	9-10.B.5.2.1 Explain how science advances technology. (655.01a)	9-10.B.5.2.2 Explain how technology advances science. (655.01a)	9-10.B.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)				
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	9-10.B.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)						

**IDAHO CONTENT STANDARDS  
GRADE 11-12  
CHEMISTRY**

**Students are expected to know content and apply skills from previous grades.**

**Standard 1: Nature of Science**

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

**Goal 1.1: Understand Systems, Order, and Organization**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.1.1 Use the periodic table to predict physical and chemical properties.

**Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.2.1 Describe the historical development of the periodic table.
- 11-12.C.1.2.2 Create and interpret graphs of data.
- 11-12.C.1.2.3 Explain and interpret the key concepts of the kinetic molecular theory.
- 11-12.C.1.2.4 Distinguish the common theories defining acids and bases.

**Goal 1.3: Understand Constancy, Change, and Measurement**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.3.1 Identify, compare and contrast physical and chemical properties and changes and appropriate computations.
- 11-12.C.1.3.2 Perform computations using scientific notation, the metric system and dimensional analysis.
- 11-12.C.1.3.3 Compute measurement uncertainty to include precision, accuracy and the rules for significant digits.
- 11-12.C.1.3.4 Perform calculations related to the conversion of grams to moles to particles, atoms, molecules and volume.
- 11-12.C.1.3.5 Analyze and solve reaction stoichiometry problems.
- 11-12.C.1.3.6 Express concentrations of solutions in various ways including molarity.
- 11-12.C.1.3.7 Interpret how the presence of solute particles affect the properties of a solution and be able to do calculations involving colligative properties.
- 11-12.C.1.3.8 Analyze quantitative relationships involved in acid/base chemistry including pH.

**Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State**

No objectives in Chemistry.

### **Goal 1.5: Understand Concepts of Form and Function**

No objectives in Chemistry.

### **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.6.1 Demonstrate an understanding of the scientific method.
- 11-12.C.1.6.2 Select and use appropriate scientific equipment, materials and techniques.

### **Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.7.1 Explain how a series of historically related and documented experiments led to the current model and structure of the atom.

### **Goal 1.8: Understand Technical Communication**

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.1.8.1 Correctly write symbols, formulas and names for common elements, ions and compounds.
- 11-12.C.1.8.2 Communicate scientific investigations and information clearly.

## **Standard 2: Physical Science**

Students explain the structure and properties of atoms, including isotopes. Students explain how chemical reactions, while requiring or releasing energy, can neither destroy nor create energy or matter. Students explain the differences between fission and fusion. Students explain the interactions of force and mass in describing motion using Newton's Laws. Students explain how energy can be transformed from one form to another while the total amount of energy remains constant. Students classify energy as potential and/or kinetic, and as energy contained in a field.

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

**Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.2.1.1 Explain and understand how electrons are involved in the formation of chemical bonds using the octet rule and Lewis dot diagrams.
- 11-12.C.2.1.2 Predict the polarity of chemical bonds using electronegativity.
- 11-12.C.2.1.3 Predict physical properties of compounds based upon the attractive forces between atoms and molecules.
- 11-12.C.2.1.4 Distinguish and classify all matter into appropriate categories.
- 11-12.C.2.1.5 Explain the relationship and reactions of acids, bases, and salts.
- 11-12.C.2.1.6 Explain the role of dissociation and ionization in producing strong, weak, and nonelectrolytes.

## **Goal 2.2: Understand Concepts of Motion and Forces**

### **Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.2.2.1 Describe the Kinetic Molecular Theory as it applies to phases of matter.

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

### **Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.2.3.1 Explain and calculate the changes in heat energy that occur during chemical reactions and phase changes.
- 11-12.C.2.3.2 Demonstrate the conservation of matter by balancing chemical equations.
- 11-12.C.2.3.3 Differentiate between exothermic and endothermic chemical reactions during chemical or physical changes.

## **Goal 2.4: Understand the Structure of Atoms**

### **Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.2.4.1 Interpret the classic historical experiments that were used to identify the components of an atom and its structure.
- 11-12.C.2.4.2 Deduce the number of protons, neutrons and electrons for an atom or ion.
- 11-12.C.2.4.3 Describe the relationship between the structure of atoms and light absorption and emission.
- 11-12.C.2.4.4 Determine and illustrate electron arrangements of elements using electron configurations and orbital energy diagrams.

## **Goal 2.5: Understand Chemical Reactions**

### **Objective(s): By the end of Chemistry, the student will be able to:**

- 11-12.C.2.5.1 Illustrate the Law of Conservation of Mass and the Law of Definite Proportions.
- 11-12.C.2.5.2 Classify, write and balance chemical equations for common types of chemical reactions and predict the products.
- 11-12.C.2.5.3 Describe the factors that influence the rates of chemical reactions.

## **Standard 3: Biology**

No goals or objectives in Chemistry.

## **Standard 4: Earth and Space Systems**

No goals or objectives in Chemistry.

## **Standard 5: Personal and Social Perspectives; Technology**

Students understand that science and technology interact and impact both society and the environment.

*As approved by the State Board of Education 8/21/08 incorporated by reference in temporary rule*

**Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced**

**Objective(s): By the end of Chemistry, the student will be able to:**

11-12.C.5.1.1 Demonstrate the ability to work safely and effectively in a chemistry laboratory.

**Goal 5.2: Understand the Relationship between Science and Technology**

**Objective(s): By the end of Chemistry, the student will be able to:**

11-12.C.5.2.1 Assess the role of chemistry in enabling technological advances.

**Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them**

**Objective(s): By the end of Chemistry, the student will be able to:**

11-12.C.5.3.1 Evaluate the role of chemistry in energy and environmental issues.

**IDAHO CONTENT STANDARDS  
KINDERGARTEN  
SCIENCE**

**Standard 1: Nature of Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 1.1: Understand Systems, Order, and Organization</b>	No objectives at this grade level.						
<b>Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations</b>	K.S.1.2.1 Make observations and collect data. (528.01.a)						
<b>Goal 1.3: Understand Constancy, Change, and Measurement</b>	K.S.1.3.1 Measure in non-standard units. (528.02.b)						
<b>Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State</b>	K.S.1.4.1 Apply the concepts of yesterday, today, and tomorrow. (528.03.a)						
<b>Goal 1.5: Understand Concepts of Form and Function</b>	No objectives at this grade level.						
<b>Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills</b>	K.S.1.6.1 Make observations. (529.01.a)						
<b>Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors</b>	K.S.1.7.1 Use cooperation and interaction skills. (538.01.a)						
<b>Goal 1.8: Understand Technical Communication</b>	K.S.1.8.1 Follow instructions. (538.02.a)						

**Standard 2: Physical Science**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions</b>	K.S.2.1.1 Use senses to describe matter. (530.01.a)						
<b>Goal 2.2: Understand Concepts of Motion and Forces</b>	No objectives at this grade level.						
<b>Goal 2.3: Understand the Total Energy in the Universe is Constant</b>	No objectives at this grade level.						
<b>Goal 2.4: Understand the Structure of Atoms</b>	No objectives at this grade level.						
<b>Goal 2.5: Understand Chemical Reactions</b>	No objectives at this grade level.						

**IDAHO CONTENT STANDARDS  
KINDERGARTEN  
SCIENCE**

**Standard 3: Biology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 3.1: Understand the Theory of Biological Evolution</b>	K.S.3.1.1 Observe and describe the characteristics of plants and animals. (532.01.a)						
<b>Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems</b>	K.S.3.2.1 Describe the difference between living and non-living things. (533.01.a)						
<b>Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things</b>	No objectives at this grade level.						

**Standard 4: Earth and Space Systems**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems</b>	K.S.4.1.1 Name the four seasons. (534.01.a)	K.S.4.1.2 Place the four seasons in order. (534.01.a)					
<b>Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System</b>	No objectives at this grade level.						

**Standard 5: Personal and Social Perspectives; Technology**

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
<b>Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced</b>	K.S.5.1.1 Describe characteristics of a man-made environment (home, school...). (536.01.a)						
<b>Goal 5.2: Understand the Relationship between Science and Technology</b>	No objectives at this grade level.						
<b>Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them</b>	No objectives at this grade level.						