IDAHO ACHIEVEMENT STANDARDS
GRADE 8-9
EARTH SCIENCE

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 Earth Science, the student will be able to:

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)

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

Objective(s): By the end of Earth Science, the student will be able to:

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)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Earth Science, the student will be able to:

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)

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 Earth Science.

Goal 1.5: Understand Concepts of Form and Function

No objectives in Earth Science.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Earth Science, the student will:

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)

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

No objectives in Earth Science.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Earth Science, the student will be able to:

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

Students describe the current theory explaining the formation of the solar system. Students explain earth processes, events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and geological time. Students explain Earth's heat sources.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Earth Science, the student will be able to:

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)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

Objective(s): By the end of Earth Science, the student will be able to:

8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)

Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

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

Objective(s): By the end of Earth Science, the student will be able to:

8-9.ES.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Earth Science, the student will be able to:

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)

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

Objective(s): By the end of Earth Science, the student will be able to:

8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)