

Idaho Extended Content Standards Draft
Extended Content Indicators
Grade 8-9
Earth Science

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.

Extended Standard 1: Students follow the basic tenets of scientific investigation by making accurate observations, applying proper scientific instruments and measurement tools, and communicating results. Students record accurate information by utilizing the tools of a simple investigation. Students participate in creating lab reports using graphs, charts, or diagrams to communicate results.

Topic	GR	Goals	Objectives	Essence	Extended Content Indicators
Interrelated Nature of Science	8-9.S.1.1	Understand Systems, Order, and Organization	8-9.ES.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)		8-9.ES.1.1.1.A Demonstrate understanding of a system..
			8-9.ES.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)		8-9.ES.1.1.2.A Use a model to display order & organization to a given system.

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Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
Interrelated nature of science	8-9.S.1.2	Understand Concepts and Processes of Evidence, Models, and Explanation	8-9.ES.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)		8-9.ES.1.2.1.A Compare and contrast relative data.
			8-9.ES.1.2.2 Develop models to explain concepts or systems. (648.02b)		8-9.ES.1.2.2.A Use models to explain concepts or systems.
			8-9.ES.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)		8-9.ES.1.2.3.A Develop a scientific explanation based on known data.

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Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
Interrelated Nature of Science	8-9.S.1.3	Understand Constancy, Change, and Measurement	8-9.ES.1.3.1 Measure changes that can occur in and among systems. (648.03b)		8-9.ES.1.3.1.A Measure changes that can occur in systems.
			8-9.ES.1.3.2 Analyze changes that can occur in and among systems. (648.03b)		8-9.ES.1.3.2.A Respond to changes that can occur in systems.
			8-9.ES.1.3.3 Measure and calculate using the metric system. (648.03c)		8-9.ES.1.3.3.A Measure using the metric system or U.S. Customary System of Measurement.

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Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	8-9.S.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 at this grade level.		No objectives in Physical Science.

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Interrelated Nature of Science	8-9.S.1.5	Understand Concepts of Form and Function	No objectives in Physical Science.		No objectives in Physical Science.

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	8-9.S.1.6	Understand Scientific Inquiry and Develop Critical Thinking Skills	8-9.ES.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)		8-9.ES.1.6.1.A. Identify questions that can guide scientific investigations.
			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.1.6.2.A Communicate results of investigations.
			8-9.ES.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)		8-9.ES.1.6.3.A Select and use appropriate technology to make investigations.
			8-9.ES.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)		8-9.ES.1.6.4.A Construct explanations and/or models using evidence.
			8-9.ES.1.6.5 Analyze alternative explanations and models. (649.01e)		8-9.ES.1.6.5.A Select alternative explanations and models.
			8-9.ES.1.6.6 Communicate and defend a scientific argument. (649.01f)		8-9.ES.1.6.6.A Communicate scientific procedures and explanations.
			8-9.ES.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)		8-9.ES.1.6.7.A Compare the differences among observations.

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Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
Interrelated Nature of Science	8-9.S.1.7	Understand That Interpersonal Relationships Are Important in Scientific Endeavors	No objectives in Earth Science.		No objectives in Earth Science.

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	8-9.S.1.8	Understand Technical Communication	8-9. ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)		8-9.ES.1.8.1.A Use graphs, charts, and diagrams.

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.

Extended Standard 4: Students describe the basic formation of the solar system, including Earth, sun, moon, planets, and stars. Students explore earth processes and events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and identify vocabulary used for geological time. Students describe the Earth’s heat sources.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
Earth Science	8-9.S.4.1	Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems	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.4.1.1.A Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors).
			8-9.ES.4.1.2 Identify methods used to estimate geologic time. (654.01b)		8-9.ES.4.1.2.A Identify terms used in geological time.
			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)		8-9.ES.4.1.3.A Show interactions among the solid earth, oceans, atmosphere, and organisms have changed.

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.

Extended Standard 4:

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
Earth Science	8-9.S.4.2	Understand Geo-chemical Cycles and Energy in the Earth System	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.4.2.1.A Identify internal & external energy sources of the earth.

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.

Extended Standard 5: Students explore how science and technology interact and impact both society and the environment. Students identify environmental issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
Environmental Science	8-9.S.5.1	Understand Common Environmental Quality Issues, Both Natural and Human Induced	8-9.ES.5.1.1Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)		8-9.ES.5.1.1.A Identify environmental issues, issues such as water and air quality, hazardous waste, depletion of natural resources.

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.

Extended Standard 5: Students explore how science and technology interact and impact both society and the environment. Students identify environmental issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
Technology	8-9.S.5.2	Understand the Relationship between Science and Technology	8-9.ES.5.2.1 Explain how science advances technology. (655.01a)		8-9.ES.5.2.1.A Show how science and technology are interrelated.
			8-9.ES.5.2.2 Explain how technology advances science. (655.01a)		8-9.ES.5.2.2.A Show how science advances technology.
			8-9.ES.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)		8-9.ES.5.2.3.A Identify different purposes for science research and technology.

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.

Extended Standard 5: Students explore how science and technology interact and impact both society and the environment. Students identify environmental issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
Natural Resources	8-9.S.5.3	Understand the Importance of Natural Resources and the Need to Manage and Conserve Them	8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)		8-9.ES.5.3.1 A Identifies between renewable and nonrenewable resources.