

Subject	Grade	Standard	Objective
Science	Fourth	III: Students will understand the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.	See Content Objectives below
Content Big Ideas		ILO Big Ideas	Science, Technology, & Society Big Ideas
(E) The basic properties of rock. (E) The processes involved in the formation of soils. (E) The basic components of soil.	(PoS) When science investigation is done the way it was done before, we expect to get a very similar result. (NoS) Sometimes people: <ul style="list-style-type: none"> aren't sure what will happen because they don't know everything that might have an effect. (CoS) When doing science activities: <ul style="list-style-type: none"> It is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions about what the findings mean. Use scientific language. 	(T) People use appropriate tools and models to investigate the world. (A) People working alone or in groups often invent new ways to solve problems and get work done. (S) Students understand that the tools and ways of doing things that people have invented affect all aspects of life.	
Content Objectives Framed by ILO Big Ideas			
Objective 1. Identify basic properties of minerals and rocks. Objective 2. Classify common rocks found in Utah as sedimentary, igneous, and metamorphic. Objective 3. Explain how the processes of weathering and erosion change and move materials that become soil. Objective 4. Observe the basic components of soil and relate the components to plant growth.			
Science language students should be able to use correctly: mineral, weathering, erosion, sedimentary, igneous, metamorphic, topsoil, subsoil, bedrock, organism, freeze, thaw, profile, nonliving, structural support, nutrients			
Guidance for Combining Content and Process			Guidance for Combining Science, Technology & Society
Suggested Strategies Students can conduct a simple experiment to determine how rocks are made up of different materials, including minerals and other rocks. Students can share their findings in the form of posters, reports, journals, graphs, etc. (See Teacher Resource Book , “ Mock Rocks ” p. 10.2.1) (PoS) (NoS) (CoS) Working in teams, students can sort rock samples based on their appearance according to their descriptions they have read, in available reference sources (rock posters, field guides, background information, books, etc.), and report their findings. (See TRB, “ Classifying Rocks ” p. 10.2.7) (PoS) (NoS) (CoS) Working in small groups, students will observe and record agents of weathering, including; wind, water, plants, and freezing. Students will report on their findings using appropriate form and format (e.g., table, graph, chart). (See TRB, “ Weathering ” p. 10.2.13) (PoS) (NoS) (CoS) Working in small groups, students will perform a short readers theater, “Old MacDonald’s Soil” found in the Elementary CORE Academy 2007 handbook (this is a .pdf document). (See USOE website on the Elementary Science curriculum page.) (PoS) (NoS) (CoS) Create a soil profile showing the different layers of soil. (See TRB, “ Soil Profile ” p. 10.2.32). (PoS) (NoS) (CoS)			(A) Students can observe and record examples and evidences of erosion at their home and in their community using digital photography and other technological means.
Earth and Space Science (E) Earth science (SS) Space science	Physical Science (A) Atomic/molecular (F) Force and motion	Life Science (CT) Changes over time (C) Cell theory	Processes, Communication and Nature of Science (PoS) Processes of science (CoS) Communication of science (NoS) Nature of science
Applications: Science, Technology, and Society (T) Tools of science (A) Applications of science (S) Implications of science for people			

Subject	Grade	Standard	Objective
Science	Fourth	II: Students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.	See Content Objectives Below
Content Big Ideas		ILO Big Ideas	Science, Technology, & Society Big Ideas
(E) Students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.		(PoS) When science investigation is done the way it was done before, we expect to get a very similar result. (NoS) Sometimes people: <ul style="list-style-type: none"> • Aren't sure what will happen because they don't know everything that might have an effect. (CoS) When doing science activities: <ul style="list-style-type: none"> • It is often helpful to work with a team and to share findings with others. • All team members should reach their own individual conclusions about what the findings mean. • Use scientific language. 	(T) People use appropriate tools and models to investigate the world. (A) People working alone or in groups often invent new ways to solve problems and get work done. (S) Students understand that the tools and ways of doing things that people have invented affect all aspects of life.
Content Objectives Framed by ILO Big Ideas			
Objective 1. Observe, measure, and record the basic elements of weather. Objective 2. Interpret recorded weather data for simple patterns. Objective 3. Evaluate weather predictions based upon observational data.			
Science language students should be able to use correctly: atmosphere, meteorologist, freezing, cumulus, stratus, cirrus, air pressure, thermometer, air temperature, wind speed, forecast, severe, phenomena, precipitation, seasonal, accuracy, barometer, rain gauge, components			
Guidance for Combining Content and Process			Guidance for Combining Science, Technology & Society
Observe, measure, and record the different types of clouds using scientific language. (See Teacher Resource Book (TRB) " Clouds " p. 9.2.1) (PoS) (NoS) (CoS) (L) Students can measure and record weather data using weather instruments such as thermometer, barometer, rain gauge, and weather vane. (See TRB " Air Pressure & Barometers " p. 9.2.19, "Thermometers" p. 9.2.8, " Collecting Weather Data " 9.2.29, and " Interpreting Weather Data " 9.2.34) (PoS) (NoS) (CoS) (M) <ul style="list-style-type: none"> • Which day had the highest temperature? Lowest? • Which day(s) had the biggest change in the weather? • Which day(s) had the highest cloud cover percentage? Students will predict and record the weather for a 5-7 day forecast and then watch local weather forecasts to compare their predictions. Then they will compare, analyze, and evaluate the accuracy of both predictions. (See TRB " Weather Forecasts " p. 9.2.37) (PoS) (NoS) (CoS) (L)			(T) Students will research weather information, including severe weather, here in Utah using the internet, informational text, newspapers, etc. (See TRB " Severe Weather " p. 9.2.23)
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Subject	Grade	Standard	Objective	
Science	Fourth	IV: Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.	See Content Objectives Below	
Content Big Ideas		ILO Big Ideas	Science, Technology, & Society Big Ideas	
(E) Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.		(PoS) When science investigation is done the way it was done before, we expect to get a very similar result. (NoS) Sometimes people: <ul style="list-style-type: none"> Aren't sure what will happen because they don't know everything that might have an effect. (CoS) When doing science activities: <ul style="list-style-type: none"> It is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions about what the findings mean. Use scientific language. 	(T) People use appropriate tools and models to investigate the world. (A) People working alone or in groups often invent new ways to solve problems and get work done. (S) Students understand that the tools and ways of doing things that people have invented affect all aspects of life.	
Content Objectives Framed by ILO Big Ideas				
Objective 1. Describe Utah fossils and explain how they were formed Objective 2. Explain how fossils can be used to make inferences about past life, climate, geology, and environments.				
Science language students should be able to use correctly: infer, environments, climate, dinosaur, preserved, extinct, extinction, impression, fossil, prehistoric, mineral, organism, replacement, trilobite, sedimentary, tropical				
Guidance for Combining Content and Process		Guidance for Combining Science, Technology & Society		
Students will observe different objects and classify them as either "Fossil" or "Not Fossil." (See Teacher Resource Book (TRB) " Identifying & Comparing Fossils " p. 11.2.1) (PoS) (NoS) (CoS) Students can make and classify fossil simulations of impressions, trace, preserved, and mineral replacements. (See TRB " Simulating Fossils " p. 11.2.4 and " Examining Your Fossils " p. 11.2.11) (PoS) (NoS) (CoS) Students will study dinosaur track and infer what they think happened when the tracks were made. (See TRB " Dinosaur Tracks " p. 11.2.15) (PoS) (NoS) (CoS) Students will research different scientific explanations of the extinction of organisms, more specifically, dinosaurs using the internet, informational texts and other sources. (See TRB " Dinosaur Extinction " p. 11.2.23, www.ZoomDinosaurs.com) (PoS) (NoS) (CoS) Students will use interactive maps of Utah to discover the location and types of the different fossils found in Utah. (See TRB "Fossil Maps" p. 11.2.18, http://t4.jordandistrict.org/grade_level/fourth/science/s4_4.html) (PoS) (NoS) (CoS)		Students will use interactive maps of Utah to discover the location and types of the different fossils found in Utah. (See TRB "Fossil Maps" p. 11.2.18, http://t4.jordandistrict.org/grade_level/fourth/science/s4_4.html)		
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Subject	Grade	Standard	Objective	
Science	Fourth	V: Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.	See Content Objectives Below	
Content Big Ideas		ILO Big Ideas	Science, Technology, & Society Big Ideas	
(C) Classify and give examples of common animals found in Utah. (C) Classify and give examples of common plants found in Utah. (C) Compare the three major environments of Utah.		(PoS) When science investigation is done the way it was done before, we expect to get a very similar result. (NoS) Sometimes people: <ul style="list-style-type: none"> Aren't sure what will happen because they don't know everything that might have an effect. (CoS) When doing science activities: <ul style="list-style-type: none"> It is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions about what the findings mean. Use scientific language. 	(T) People use appropriate tools and models to investigate the world. (A) People working alone or in groups often invent new ways to solve problems and get work done. (S) Students understand that the tools and ways of doing things that people have invented affect all aspects of life.	
Content Objectives Framed by ILO Big Idea				
Objective 1. Describe the physical characteristics of Utah's wetlands, forests, and deserts. Objective 2. Describe the common plants and animals found in Utah environments and how these organisms have adapted to the environment in which they live. Objective 3. Use a simple scheme to classify Utah plants and animals. Objective 4. Observe and record the behavior of Utah animals.				
Science language students should be able to use correctly: wetland, forest, desert, adaptation, deciduous, coniferous, invertebrate, vertebrate, bird, amphibian, reptile, fish, mammal, insect, hibernation, migration Common Plants: sagebrush, pinyon pine, Utah juniper, spruce, fir, oak brush, quaking aspen, cottonwood, cattail, bulrush, prickly pear cactus Common Animals: jackrabbit, cottontail rabbit, red fox, coyote, mule deer, elk, moose, cougar, bobcat, deer mouse, kangaroo rat, muskrat, beaver, gopher snake, rattlesnake, lizard, tortoise, frog, salamander, red-tailed hawk, barn owl, lark, robin, pinyon jay, magpie, crow, trout, catfish, carp, grasshopper, ant, moth, butterfly, housefly, bee, wasp, pill bug, millipede				
Guidance for Combining Content and Process			Guidance for Combining Science, Technology & Society	
Students will create a map of the various environments of Utah. (See Teacher Resource Book (TRB) " Finding Wetlands, Forests, and Deserts " p. 12.2.1) (PoS) (NoS) (CoS) Students will explore the relationship between elevation and plants and animals. (See TRB " Elevation, Plants and Animals " p. 12.2.5) (PoS) (NoS) (CoS) Through the use of a classification scheme, students will work to classify the various common plants and animals of Utah. (See TRB " Classification Schemes " p. 12.2.39 and " Classify UT Plants and Animals " p.12.2.43) (PoS) (NoS) (CoS) Students will investigate the different adaptations of Utah animals for survival in their environments. (See TRB " Bird Study " p. 12.2.56) (PoS) (NoS) (CoS)				
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Subject	Grade	Standard	Objective	
Science	Fourth	I: Students will understand that water changes state as it moves through the water cycle.	See Content Objectives Below	
Content Big Ideas		ILO Big Ideas	Science, Technology, & Society Big Ideas	
Students will understand that water changes state as it moves through the water cycle. Describe the water cycle.		(PoS) When science investigation is done the way it was done before, we expect to get a very similar result. (NoS) Sometimes people: <ul style="list-style-type: none"> Aren't sure what will happen because they don't know everything that might have an effect. (CoS) When doing science activities: <ul style="list-style-type: none"> It is often helpful to work with a team and to share findings with others. All team members should reach their own individual conclusions about what the findings mean. Use scientific language. 	(T) People use appropriate tools and models to investigate the world. (A) People working alone or in groups often invent new ways to solve problems and get work done. (S) Students understand that the tools and ways of doing things that people have invented affect all aspects of life.	
Content Objectives Framed by ILO Big Ideas				
Objective 1. Describe the relationship between heat energy, evaporation, and condensation of water on Earth.				
Objective 2. Describe the water cycle.				
Science language students should be able to use correctly: vapor, precipitation, evaporation, clouds, dew, condensation, temperature, water cycle				
Guidance for Combining Content and Process			Guidance for Combining Science, Technology & Society	
Students will understand about the distribution of water on Earth. (See Teacher Resource Book (TRB) " Where is Water Found? " p. 8.2.1) (PoS) (NoS) (CoS) Students will compare evaporation rates of different simulated climates and graph their results. (See TRB " Why Does a Puddle Shrink? " p. 8.2.4)) (PoS) (NoS) (CoS) Students will experience condensation with various examples throughout the year, i.e., frozen water bottles, melting snow, morning dew on the grass, windows, etc.) (PoS) (NoS) (CoS) Working in small groups, students will create a model of the water cycle. (See CORE Academy 2008 manual, TRB, and other assorted models.)) (PoS) (NoS) (CoS) There is a game called " Water on the Move " found in the TRB p. 8.2.18 that could be fun.) (PoS) (NoS) (CoS)				
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