

Content Integration 2014-15



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CONTENT INTEGRATION (SOCIAL STUDIES & SCIENCE) CURRICULUM MAP CANYONS SCHOOL DISTRICT

Curriculum Mapping Purpose

Canyons School District's Content Integration curriculum maps are standards-based maps driven by the Utah Core Standards. Student achievement is increased when both teachers and students know where they are going, why they are going there, and what is required of them to get there.

Curriculum Maps are a tool for:

- **ALIGNMENT:** Provides support and coordination between concepts, skills, standards, curriculum, and assessments
- **COMMUNICATION:** Articulates expectations and learning goals for students
- **PLANNING:** Focuses instruction and targets critical information
- **COLLABORATION:** Promotes professionalism and fosters dialogue between colleagues about best practices pertaining to sequencing, unit emphasis and length, integration, and review strategies
- **SCAFFOLDED INSTRUCTION AND GROUPING STRUCTURES:** The organization of a scaffolded classroom includes whole group, small group (e.g., teacher-led skill-based, cooperative learning), partner, and independent work where students are provided support towards mastery. As students assume more responsibility for the learning, gradual support is decreased in order to shift the responsibility for learning from the teacher to the students.

General Instructions

Pacing

This curriculum map provides guidance for intertwining the Utah Core Standards for Social Studies and Science with the Reading Street content. Following the map will allow students to access all core standards by the end of the year. To support students' mastery of the standards, a scope and sequence was developed to address content areas. Attending to these standards will allow teachers to focus instruction for the given unit and better assess students' understanding of each standard.

Units

The scope and sequence was correlated to the Reading Street Unit Theme and Question where applicable. There are five units that are to be covered over the course of the school year, as students will do a keyboarding unit at the beginning of the year. Each unit represents six weeks of instruction. In most cases, there are science and social studies standards that are taught in each unit.

Content Integration Instruction

During the Science and Social Studies content integration block, students will have the opportunity to learn about and experience science and social studies as directed by the Utah State Core curriculum. "Elementary school students learn science and social studies best when; they are involved in first-hand exploration and investigation and inquiry/process skills are nurtured, instruction builds directly on the student's conceptual framework, and when mathematics and communication skills are an integral part of instruction."

The Content integration time in the ELA Block deals with integration of science and social studies content to understand key concepts, principles, generalizations, and theories through the integration of the English Language Arts Standards. The Utah Core states: "By reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them the background to be better readers in all content areas. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades. Students also acquire the habits of reading independently and closely, which are essential to their future success."

Optimally, this portion of the day involves students reading, writing, listening and speaking about the topics they are learning about in science and social studies instruction time. Teachers can use this time to provide background knowledge and learning activities to prepare their students for their Science/Social Studies instruction. Ideas and resources for integration can be found in your Content Integration Map.

Scheduling Suggestions

Ideally, the Science and Social Studies block will be schedule back-to-back with the Content Integration time in the ELA block for a fluid flow from building background knowledge in the ELA block to the experiential learning in the Science and Social Studies block. If schedule back-to-back, this block of time can be adjusted so that laboratories, modeling, simulations, and other activities that take extended amounts of time can be incorporated in the day.

Example Performance Assessment

Example performance assessments have been included in the map as ideas on different types of assessments to determine mastery. An example has been listed for every objective from the Utah Science and Social Studies core.

Guidance for Integration

Ideas for how to incorporate literacy, math, art, and other standards with the Social Studies and Science standards have been included in this portion of the map. Links on where to find resources and lesson plans have been provided.

4th Grade Content Integration Scope & Sequence

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Unit Theme	Turning Points	Teamwork	Patterns in Nature	Puzzles and Mysteries	Adventure by Land, Air, and Water	Reaching for Goals
Unit Question	What can we discover from new places and people?	What is the value of teamwork?	What are some patterns in nature?	Is there an explanation for everything?	What makes an adventure?	What does it take to achieve our goals and dreams?
Writing Focus	Narrative	Opinion	Informative	Narrative	Opinion	Informative
Science Core		Standard 1: Students will understand that water changes state as it moves through the water cycle.	Standard 2: The students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.	Standard 3: Students will understand the basic properties of rocks, the processes involve in the formation of soils, and the needs of plants provided by soil.	Standard 4: Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.	Standard 5: Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.
Social Studies Core	Keyboarding Practice	Standard 3: Students will understand the roles of civic life, politics, and government in the lives of Utah citizens.	Standard 2: Students will understand how Utah's history has been shaped by many diverse people, events, and ideas. Obj. 1: Describe the historical and current impact of various cultural groups on Utah. Obj. 2: Describe ways that Utah has changed over time.	Standard 2: Students will understand how Utah's history has been shaped by many diverse people, events, and ideas. Obj. 3: Investigate the development of the economy in Utah.	Standard 1: Students will understand the relationship between the physical geography in Utah and human life. Obj. 1: Classify major physical geographic attributes of Utah	Standard 1: Students will understand the relationship between the physical geography in Utah and human life. Obj. 2: Analyze how physical geography affects human life in Utah. Obj. 3: Analyze how human actions modify the physical environment.

4th Grade Content Integration

Unit 2: Teamwork		
Reading Street Big Question: What is the value of teamwork?		
Content	Social Studies	Science
Essential Question	How do individuals influence others?	How does heat energy drive the water cycle?
Student Learning Targets	<ul style="list-style-type: none"> • I can understand how the rights and responsibilities of people have changed over time. • I can explain the role of government in the state of Utah. 	<ul style="list-style-type: none"> • I can describe the relationship between heat energy and the water cycle on Earth. • I can diagram and explain the water cycle.
Example Performance Assessment	<ul style="list-style-type: none"> • Opinion Writing: “Was the U.S. justified in using internment camps for Japanese-Americans?” (DOK 4) • Compare and contrast the roles and responsibilities of state, local and county governments using a triple Venn diagram. (DOK 2) 	<ul style="list-style-type: none"> • Create a diagram and a written description that demonstrates and explains how heat, or the lack of heat drives the water cycle (evaporation, precipitation, and condensation). (DOK 2) • Conduct an investigation and record temperature data as water changes state from solid, to liquid, to gas. (DOK 3)
Content Standards	<p>Standard 3: Students will understand the roles of civic life, politics, and government in the lives of Utah citizens.</p> <p>Objective 1: Describe the responsibilities and rights of individuals in a representative government as well as in the school and community.</p> <ol style="list-style-type: none"> a. Identify rights of a citizen (e.g. voting, peaceful assembly, freedom of religion). b. Identify responsibilities of a citizen (e.g. jury duty, obeying the law, paying taxes). c. Determine how and why the rights and responsibilities of various groups have varied over time (e.g. Chinese railroad workers, Greek miners, women, children, Mormons, Japanese-Americans at Topaz, American Indians, African-Americans). d. How the influence and power of individuals is affected when they organize into groups. e. Describe and model ways that citizens can participate in civic responsibilities (e.g. current issue analysis, recycling, volunteering with civic organizations, letter writing). 	<p>Standard 1: Students will understand that water changes state as it moves through the water cycle.</p> <p>Objective 1: Describe the relationship between heat energy, evaporation and condensation of water on Earth.</p> <ol style="list-style-type: none"> a. Identify the relative amount and kind of water found in various locations on Earth (e.g., oceans have most of the water, glaciers and snowfields contain most fresh water). b. Identify the sun as the source of energy that evaporates water from the surface of Earth. c. Compare the processes of evaporation and condensation of water. d. Investigate and record temperature data to show the effects of heat energy on changing the states of water. <p>Objective 2: Describe the water cycle.</p> <ol style="list-style-type: none"> a. Locate examples of evaporation and condensation in the water cycle (e.g., water evaporates when heated and clouds or dew forms when vapor is cooled). b. Describe the processes of evaporation, condensation, and precipitation as they relate to the water cycle. c. Identify locations that hold water as it passes through the water cycle (e.g., oceans, atmosphere, fresh surface

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	<p>f. Contribute to and practice classroom goals, rules and responsibilities.</p> <p>g. Recognize and demonstrate respect for United States and Utah symbols (i.e. Pledge of Allegiance, flag etiquette).</p> <p>Objective 2: Analyze the different ways people have organized governments in Utah to meet community needs.</p> <p>a. Identify the forms of government found in Utah in different eras (i.e. historic and current American Indian government, State of Deseret, Utah Territory, statehood era, present).</p> <p>b. Compare how these governments addressed community needs.</p> <p>c. Compare the roles and responsibilities of state, county, and local officials.</p>	<p>water, snow, ice, and ground water).</p> <p>d. Construct a model or diagram to show how water continuously moves through the water cycle over time.</p> <p>e. Describe how the water cycle relates to the water supply in your community.</p>
Essential Vocabulary	citizen, civic organizations, allegiance, representative, rights, responsibilities, government	vapor, precipitation, evaporation, clouds, dew, condensation, temperature, water cycle
Guidance for Integration	<p>Japanese-American Internment Camps Social Studies: 3.1, ELA: RI.4.1, RI.4.3, RI.4.9, W.4.1 Read students <i>Barbed Wire Baseball</i> by Marissa Moss and information from http://www.topazmuseum.org, http://historymatters.gmu.edu/d/5153/, or http://history.howstuffworks.com/history-vs-myth/japanese-internment-camp.htm and have students use the information selected to write an opinion essay about: "Was the U.S. justified in using internment camps for Japanese-Americans?"</p> <p>State, Local, and County Government SS: 3.2, ELA: RI 4.3, 4.5, 4.7, 4.9, W4.8 Compare and contrast the constitutions of Utah and the United States. (DOK 2) http://www.uen.org/Lessonplan/preview?LPid=25962</p>	<p>Water Cycle Investigation Science: 1.2, ELA: RI 4.7, SL 4.1C & D Conduct an investigation and record temperature data as water changes state from solid, to liquid, to gas. Students discuss what they witnessed in the investigation and draw a diagram to explain the phases and how matter changes from one phase to another. http://www.get2knowh2o.org/instructor/teach1.pdf</p> <p>Water Cycle Song Science: 1.2, Dance 2.3, Music 1.1, 1.2, 3.1 Dance Standard 2.3 (The student will identify and demonstrate movement elements in performing dance) & Music Standard 1.1 & 1.2 (<u>Singing</u>: The student will develop the voice and body as instruments of musical expression.) Music Standard 3.1 (Creating: The student will create music through improvising, arranging, and composing.) Have students compose, sing and create motions to help them learn a Water Cycle Song. An example song can be found at: http://www.youtube.com/watch?v=Yw275056jtA</p>

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Suggested Unit Resources	<p><i>Utah, Our Home</i> – Chapters 7, 11</p> <p>Standard 3: Objective 1 Voting (3.1a) http://www.congressforkids.net/Elections_voting.htm Being a Responsible Citizen (3.1b) http://www.eia.gov/kids/energy.cfm?page=environment_recycling-basics Japanese-Americans at Topaz (3.1c) www.topazmuseum.org http://www.ilovehistory.utah.gov/time/stories/topaz.html Chinese Railroad (3.1c) http://cpr.org/Museum/Chinese.html</p> <p>Standard 3: Objective 2 US and Utah Constitution Comparisons (3.2c) http://www.uen.org/Lessonplan/preview?LPid=25962 Structures of Utah Government (http://www.ilovehistory.utah.gov/topics/government/index.html Utah History to Go http://historytogo.utah.gov State Symbols http://www.utah.gov/about/symbols.html</p>		<p>State Science OER Textbook: http://www.schools.utah.gov/CURR/science/OER.aspx UEN Teacher Resource Book: http://www.uen.org/core/science/sciber/TRB4/index.shtml USOE Supports: http://schools.utah.gov/CURR/science/Elementary/Fourth-Grade.aspx The Incredible Journey http://www.uen.org/Lessonplan/preview?LPid=31637 Discover Water http://www.discoverwater.org/resources/Water_Cycle_Educator_Resources.pdf</p>	
Explicit Ties to Reading Street	Reading Street Connection	Content Integration	Reading Street Connection	Content Integration
	Week 5: <u>So You Want to be President?</u> Main Selection	<p>Week’s Main Selection: While reading (p.301), have students take notes on the roles and responsibilities of the president. Compare and Contrast the roles and responsibilities of the president, state, county, and local officials. Have students write a paragraph on the similarities and differences amongst the government officials.</p>	N/A	N/A
Reading Street Online Readers	Voting Day (L490) Home of the Brave (G2) The United States Government (L810) The President’s Promise	Mayor Mom (L410) Abby Takes a Stand (G4) Equality in American Schools (L1010) Amazing Female Athletes	Earth’s Hydrosphere (L870) Earth’s Water (L750) Follow a Raindrop (L860) How Clouds Are Made (L580) Water (L440)	

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	<p>(L390) A Nation of Many Colors (L1000) Operation Inspiration (L810) The Fourth Grade Election (G4) Mom the Mayor (L410) Changing Times: Women in the 20th Century (L710) Living in A Democracy (L650) It's Our Right (L920) Cesar Chavez: Friend of Farm Workers (L670) This is the Way We Go to School (L810) The Most Dangerous Woman in America (L870) The Woman's Movement (L860) We Shall Overcome (L900) The Power of the People (L810) The Power of Our People (L810)</p>	<p>(L880) From Territory to Statehood (L770) All About Schools (L1000) From a Small Town to a Big City (G3) Journey to Statehood (L770) A Citizen of the United States (L700) Make a Difference (G6) We Are Part of This Place (L460) What it Means to be a Citizen (L560) Strength of Spirit (G5) Law Making in the United States (L810) A Citizen of the United States (L700) Its the Law (L610) We Are Part of This Place (L460) What it Means to be a Citizen (L560)</p>	<p>Water Cycle and Weather (L710) Water On Earth (L670) The Water Cycle of Africa (L960)</p>
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4th Grade Content Integration

Unit 3: Patterns in Nature Reading Street Big Question: What are some patterns in nature?		
Content	Social Studies	Science
Essential Question	How do the beliefs and values of a diverse culture affect individuals and society?	How do scientists gather, classify, sequence, and interpret information and visual data?
Student Learning Targets	<ul style="list-style-type: none"> • I can compare the cultural influences from various groups in Utah's past and today. • I can describe how beliefs and values of diverse cultures affect society. 	<ul style="list-style-type: none"> • I can observe, measure, and record the basic elements of weather. • I can interpret recorded weather data for simple patterns. • I can evaluate weather predictions based upon observational data.
Example Performance Assessment	<ul style="list-style-type: none"> • Students compare the cultural influences of two or more Utah native tribes, past and present. (DOK 4) • Students read an informational text and take notes on an article on immigrants of Utah, and create a timeline representing the various immigrants and groups when they arrived in Utah. (DOK 3) 	<ul style="list-style-type: none"> • Students maintain a weather journal in which they record observations and measurements of the element of weather. (DOK 2) • Students interpret data and make weather predictions from a provided data set. (DOK 4)
Content Standards	<p>Standard 2: Students will understand how Utah's history has been shaped by many diverse people, events, and ideas.</p> <p>Objective 1: Describe the historical and current impact of various cultural groups on Utah.</p> <ol style="list-style-type: none"> a. Chart the routes that diverse cultural groups took from their places of origin to Utah, using maps and other resources. b. Explore points of view about life in Utah from a variety of cultural groups using primary source documents. c. Explore cultural influences from various groups found in Utah today (e.g. food, music, religion, dress, festivals). d. Identify and describe leaders from various cultures who exemplify outstanding character and life skills. e. Explain the importance of preserving cultural prehistory and history, including archaeological sites and other historic sites and artifacts. <p>Objective 2: Describe ways that Utah has changed over time.</p>	<p>Standard 2: The students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.</p> <p>Objective 1: Observe, measure, and record the basic elements of weather.</p> <ol style="list-style-type: none"> a. Identify basic cloud types (i.e., cumulus, cirrus, stratus clouds). b. Observe, measure, and record data on the basic elements of weather over a period of time (i.e., precipitation, air temperature, wind speed and direction, and air pressure). c. Investigate evidence that air is a substance (e.g., takes up space, moves as wind, temperature can be measured). d. Compare the components of severe weather phenomena to normal weather conditions (e.g., thunderstorm with lightning and high winds compared to rainstorm with rain showers and breezes).

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	<ul style="list-style-type: none"> a. Identify key events and trends in Utah history and their significance (e.g. American Indian settlement, European exploration, Mormon settlement, westward expansion, American Indian relocation, statehood, development of industry, World War I and II). b. Compare the experiences faced by today's immigrants with those faced by immigrants in Utah's history. 	<p>Objective 2: Interpret recorded weather data for simple patterns.</p> <ul style="list-style-type: none"> a. Observe and record effects of air temperature on precipitation (e.g., below freezing results in snow, above freezing results in rain). b. Graph recorded data to show daily and seasonal patterns in weather. c. Infer relationships between wind and weather change (e.g., windy days often precede changes in the weather; south winds in Utah often precede a cold front coming from the north). <p>Objective 3: Evaluate weather predictions based upon observational data.</p> <ul style="list-style-type: none"> a. Identify and use the tools of a meteorologist (e.g., measure rainfall using rain gauge, measure air pressure using barometer, measure temperature using a thermometer). b. Describe how weather and forecasts affect people's lives. c. Predict weather and justify prediction with observable evidence. d. Evaluate the accuracy of student and professional weather forecasts. e. Relate weather forecast accuracy to evidence or tools used to make the forecast (e.g., feels like rain vs. barometer is dropping).
Essential Vocabulary	immigrant, culture, history, archaeological sites	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 Integration	<p>Cultural Influence of Utah Native Tribes SS: 2.1, ELA: RI4.3, RI4.5, RI4.9, SL4.1D, SL4.2 Have students compare the cultural influences of two or more Utah native tribes, past and present. http://uintahbasintah.org/utahnatives.htm</p> <p>Immigrants of Utah SS: 2.2, ELA: RI4.3, RI4.5, RI4.7, W4.8, SL4.1A</p>	<p>Weather Journal Science: 2.1, 2.2, ELA: RI4.7, Math: 4.MD.4 Students maintain a weather journal for a minimum of 2 weeks, where they record observational data, and measure the elements of weather. Using the benchmark fractions ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$) as your line plot, estimate the data to the closest fractional part of the month (i.e. if 6 of the 10 days were cloudy, the data would be rounded to $\frac{1}{2}$). Sample student weather journal:</p>



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	<p>Have students read an informational text and take notes on an article on immigrants of Utah, like http://www.uen.org/utah_history_encyclopedia/i/IMMIGRATION.html, and create a timeline representing the various immigrant groups and when they arrived in Utah.</p> <p>Music and Culture SS: 2.1, Music Standard 4.2, 1.3: (Listening: The student will listen to, analyze, and describe music.) Students will study the music of other cultures and how it has affected that society. Resources can be found at: http://www.sbgmusic.com/html/teacher/reference/cultures.html. Discover how songs, singing games, and dances relate to various cultures in the history of Utah.</p>	<p>http://srufaculty.sru.edu/michael.stapleton/Class/Meteorology/WeatherJournal/Weather%20Journal.htm</p> <p>Weather Predictions Science 2.2, 2.3, ELA: RI4.7, Provide students with a collection of weather data, for example their own weather journal or http://pals.sri.com/tasks/k-4/Globe_IT_ATM1/directs.html and have them interpret the data and make weather predictions.</p> <p>Art & Weather Visual Art Standard 1.1 & 1.2 (Students will explore and refine the application of media, techniques, and artistic processes.) Students identify elements of art, how it's depicted in weather, and create original artwork about the types of weather or seasons. http://artsedge.kennedy-center.org/educators/lessons/grade-3-4/Exploring_Weather</p>
<p>Suggested Unit Resources</p>	<p><i>Utah, Our Home</i> – Chapters 4 – 6, 9</p> <p>Standard 2, Objective 1: Who are the people of Utah http://www.teacherlink.usu.edu/tresources/units/Gallagher2004Fall/PeopleOfUtah.pdf Tribal Cultures http://www.visitutah.com/history-culture/tribal-cultures/ Polynesians in Utah http://www.sltrib.com/sltrib/tribpreps/55702182-190/pacific-utah-family-islander.html.csp People of Utah http://www.sltrib.com/sltrib/tribpreps/55702182-190/pacific-utah-family-islander.html.csp Utah's early cultural Diversity http://www.sltrib.com/sltrib/news/55420418-78/bit-com-csp.html.html.csp Standard 2, Objective 2: Utah Division of State History http://heritage.utah.gov/history Trappers, Traders, and Explorers</p>	<p>State Science OER Textbook: http://www.schools.utah.gov/CURR/science/OER.aspx UEN Teacher Resource Book: http://www.uen.org/core/science/sciber/TRB4/index.shtml USOE Supports: http://schools.utah.gov/CURR/science/Elementary/Fourth-Grade.aspx</p>

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	http://historytogo.utah.gov/lessons/trapperstradersandexplorers.html Utah State Facts and History http://www.infoplease.com/us-states/utah.html			
Explicit Ties to Reading Street	Reading Street Connection	Content Integration	Reading Street Connection	Content Integration
	N/A	N/A	Week 1: <u>The Man Who Named the Clouds & My Weather Journal</u> Concept Talk Main Selection Let's Think About Genre	Have students create a weather journal and record their observations about the weather (temperature, precipitation, wind speed, etc.) and types of clouds that they observe. They can use the diagram in the main selection to help determine the cloud types and the example weather journal to create their own.
			Week 4: <u>Eye of the Storm & Severe Weather Safety</u> Concept Talk Main Selection	Watch a short video (like http://video.nationalgeographic.com/video/101-videos/hurricanes-101) While viewing the video, have them record facts about hurricanes that they learn and share in small groups their ideas to expand their notes. Then, as they read the main selection, have them identify additional facts that they learn. They can then write a short, one paragraph summary about some of the interesting facts they learned.
Reading Street Online Readers	The Long Journey West (L680) Wagon Train (G2) East Meets West: Japan and America (L640) Laura Ingalls Wilder Pioneer Girl (L220) The Dog That Discovered the West (L280) Greetings from the Four Corners! (G6)	A Nation of Many Colors (L1000) The Golden Spike (L800) Spreading Across the Continent (L1040) Heading West (L910) Crossing the Nation by Rail (L870) What is My Economy Like (L780)	How Clouds are Made (L580) Weather Patterns (L780) What is Weather (L250) Climate and Weather (L780) Earth's Climate and Weather (L860) Earth's Weather (L590) Water Cycle and Weather (L710) Weather and Storms (L 690)	Hurricanes (L910) Severe Storms (L770) All Kinds of Weather (L130) Changing Weather (L860) How to Measure the Weather (L480) Forecasting the Weather (L990) Measuring the Weather (L480) Weather Forecasting (L990) Weather or Not (L540)

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	Go West (L480) A Very Special Gift (L750) Restless Humanity (L1000) Community Friends (G4)	The Economy and How it Works (L850) It Started with Nails (G3) Following the Golden Dream (L1060) Westward Expansion (G5)	Weather (L580) Water and Weather on Earth (L810) Weather and Currents (L960) Drought (L990)	Hurricane! (L500, L720) Surviving Hurricane Andrew (L650) Severe Weather: Storms (L950)
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4th Grade Content Integration

Unit 4: Puzzles and Mysteries		
Reading Street Big Question: Is there an explanation for everything?		
Content	Social Studies	Science
Essential Question	How have various cultural groups had an impact on the development of Utah?	How does the Earth's structure change over time?
Student Learning Target	<ul style="list-style-type: none"> I can describe how economic development affects communities. 	<ul style="list-style-type: none"> I can identify basic properties of minerals and rocks. I can explain how the process of weather and erosion change and move materials that become soil. I can identify the components of soil and relate them to plant growth.
Example Performance Assessments	<ul style="list-style-type: none"> Students will write 2-3 paragraphs about several businesses and services that they feel are absolutely necessary for a community. (DOK 3) 	<ul style="list-style-type: none"> Sort and classify a variety of rocks by their appearance and types. Provide students with a diagram of the weathering process and have them label and write a summary of what is occurring. Conduct a soil erosion lab, and have students write a conclusion about their findings about the experiment.
Content Standards	<p>Standard 2 Students will understand how Utah's history has been shaped by many diverse people, events, and ideas</p> <p>Objective 3: Investigate the development of the economy in Utah.</p> <ol style="list-style-type: none"> Explain the relationship between supply and demand. Describe the role of producers and consumers. Identify examples of producers and consumers in the local community. Research the development of Utah's economy over time. Identify the factors which bring about economic changes (e.g. natural resource development, new technologies, new market development, globalization, global conflicts, education). Examine how economic development affects communities (e.g. dams, sports, tourism, power plants, mining, etc.). 	<p>Standard 3: Students will understand the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.</p> <p>Objective 1: Identify basic properties of minerals and rocks.</p> <ol style="list-style-type: none"> Describe the differences between minerals and rocks. Observe rocks using a magnifying glass and draw shapes and colors of the minerals. Sort rocks by appearance according to the three basic types: sedimentary, igneous and metamorphic (e.g., sedimentary–rounded-appearing mineral and rock particles that are cemented together, often in layers; igneous–with or without observable crystals that are not in layers or with or without air holes or glasslike; metamorphic –crystals/minerals, often in layers). Classify common rocks found in Utah as sedimentary (i.e., sandstone, conglomerate, shale), igneous (i.e., basalt, granite, obsidian, pumice) and metamorphic (i.e., marble, gneiss, schist).

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		<p>Objective 2: Explain how the processes of weathering and erosion change and move materials that become soil.</p> <ol style="list-style-type: none"> a. Identify the processes of physical weathering that break down rocks at Earth's surface (i.e., water movement, freezing, plant growth, wind). b. Distinguish between weathering (i.e., wearing down and breaking of rock surfaces) and erosion (i.e., the movement of materials). c. Model erosion of Earth materials and collection of these materials as part of the process that leads to soil (e.g., water moving sand in a playground area and depositing this sand in another area). d. Investigate layers of soil in the local area and predict the sources of the sand and rocks in the soil. <p>Objective 3: Observe the basic components of soil and relate the components to plant growth.</p> <ol style="list-style-type: none"> a. Observe and list the components of soil (i.e., minerals, rocks, air, water, living and dead organisms) and distinguish between the living, nonliving, and once living components of soil. b. Diagram or model a soil profile showing topsoil, subsoil, and bedrock, and how the layers differ in composition. c. Relate the components of soils to the growth of plants in soil (e.g., mineral nutrients, water). d. Explain how plants may help control the erosion of soil. e. Research and investigate ways to provide mineral nutrients for plants to grow without soil (e.g., grow plants in wet towels, grow plants in wet gravel, grow plants in water).
Essential Vocabulary	immigrants, supply, demand, producer, economy, consumer, technology, globalization	mineral, weathering, erosion, sedimentary, igneous, metamorphic, topsoil, subsoil, bedrock, organism, freeze, thaw, profile, nonliving, structural support, nutrients
Guidance for Integration	<p>Ghost Town Awakening Social Studies: 2.3, ELA: W4.2, W 4.7, W4.8 Students find and research a ghost town of Utah, and select the necessary things that it would need in order for it to function and grow.</p>	<p>Classifying Rocks Science 3.1, ELA: W4.1b, RI 4.6 Students complete the classifying rocks lab found at http://www.uen.org/Lessonplan/preview?LPid=9852 Students need to justify their decisions about placement through</p>



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	http://www.uen.org/Lessonplan/preview?LPid=23831 or http://www.econedlink.org/lessons/index.php?lid=665&type=educator		writing. Soil Erosion Lab Science: 3.2, ELA: RI.4.2 & 4.3, W4.2e Conduct a soil erosion lab, similar to http://www.lapappadolce.net/science-experiment-on-soil-erosion-2/?lang=en , and have students write a conclusion about their findings in the experiment. Layers of Soil Science: 3.3, ELA: RI 4.7, Math 4.NF.3A & Practice Standard: 4 Students will create a model of a soil profile using various food items, such as the model at: http://ell.tamucc.edu/files/module_8_activity.pdf (Google Soil Investigation Grade 3, if the link doesn't work). Students will record and label their model in their science notebook representing the various layers and components.	
Suggested Unit Resources	Utah, Our Home – Chapter 10 UEN Teacher Resources: http://www.uen.org/core/core.do?courseNum=6040 http://www.uen.org/Lessonplan/LPview.cgi?core=4		State Science OER Textbook: http://www.schools.utah.gov/CURR/science/OER.aspx UEN Teacher Resource Book: http://www.uen.org/core/science/sciber/TRB4/index.shtml USOE Supports: http://schools.utah.gov/CURR/science/Elementary/Fourth-Grade.aspx	
	Reading Street Connections	Content Integration	Reading Street Connections	Content Integrations
Explicit Ties to Reading Street	Week 3: Navajo Code Talkers Concept Talk Main Selection	After reading the main selection, have students read a text about the Utah Navajo Code Talkers, such as http://www.ksl.com/?sid=14317635 or http://www.navajonnsn.gov/history.htm . Have a class discussion about the contributions this culture has made to our nation and then have students write a short information piece about their	N/A	N/A

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	contributions.		
Reading Street Online Readers	From Spain to America (L790) The Dine (L850) Navajo Code Talkers (L1100) Ranches in the Southwest (L820) Ranching in the Great American Desert (L1000) The Long Journey West (L680) What do Archaeologists Do? (L1120) Pompeii, The Lost City (L910) Rails Across America (L830) The Transcontinental Railroad (L1010) Westward Expansion (L1140) Archaeologists Explore Early America (L1020)	Grandpa’s Rock Kit (L390) Riches from the Earth (L880) Riches from Our Earth (L880) The Rock Kit (L390) Gemstones Around the World (L830) Rocks, Wind, and Water (L470) Changes to the Earth’s Surface (L720) Changes on Earth (L590) Changing Surface of the Earth (L850) Crystals and Gems (L590) The Earth (L470) Minerals and Rocks (L740) Minerals and Rocks (L960) Rocks and Minerals (L750) Rocks and Minerals (L800)	Rocks and Soil (L590) Rocks and Soil Beneath Us (L740) Down to Earth (L1000) Earth’s Changing Surface (L790) Mountains of the World (L1020) Our Changing Earth (L870) The Earth (L470) Caves (L950) Ice (L840) Fertile Floods (L800) Rocks and Soil (L590) Rocks and Soil Around Us (G2) World of Rocks and Minerals (G4)

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Unit 5: Adventures by Land, Air, and Water

Reading Street Big Question: What makes an adventure?

Content	Social Studies	Science
Essential Question	What are the physical geographic attributes of Utah, and how they impact human life in Utah?	How can fossil evidence be used to make inferences about Utah's past (life, climate, geology, and environments)?
Student Learning Targets	<ul style="list-style-type: none"> • I can list several major physical geographic attributes in Utah, and describe the forces that may have created them. • I can describe how physical geography affects human life in Utah. 	<ul style="list-style-type: none"> • I can describe Utah fossils and explain how they were formed. • I can explain how fossils can be used to make inferences about the past.
Example Performance Assessment	<ul style="list-style-type: none"> • Students research the physical features, population distribution, etc. of Utah and compare features with another state. 	<ul style="list-style-type: none"> • Research locations where fossils are found in Utah and plot them on a map of Utah. • Use the information from the fossil map to hypothesize what Utah may have looked like in the past.
Content Standards	<p>Standard 1: Students will understand the relationship between the physical geography in Utah and human life.</p> <p>Objective 1: Classify major physical geographic attributes of Utah.</p> <ol style="list-style-type: none"> a. Identify Utah's latitude, longitude, hemisphere, climate, natural resources, landforms, and regions using a variety of geographic tools. b. Examine the forces at work in creating the physical geography of Utah (e.g. erosion, seismic activity, climate change). <p>Objective 2: Analyze how physical geography affects human life in Utah.</p> <ol style="list-style-type: none"> a. Identify population concentrations in the state and infer causal relationships between population and physical geography. b. Classify the distribution and use of natural resources. c. Compare the development of industry and business in Utah as it relates to its physical geography (e.g. mining, oil, agriculture, tourism). d. Make inferences about the relationships between the physical geography of Utah and the state's communication and transportation systems (e.g. trails, 	<p>Standard 4: Students will understand how fossils are formed, where they may be found in Utah, and how they can be used to make inferences.</p> <p>Objective 1: Describe Utah fossils and explain how they were formed.</p> <ol style="list-style-type: none"> a. Identify features of fossils that can be used to compare them to living organisms that are familiar (e.g., shape, size and structure of skeleton, patterns of leaves). b. Describe three ways fossils are formed in sedimentary rock (i.e., preserved organisms, mineral replacement of organisms, impressions or tracks). c. Research locations where fossils are found in Utah and construct a simple fossil map. <p>Objective 2: Explain how fossils can be used to make inferences about past life, climate, geology, and environments.</p> <ol style="list-style-type: none"> a. Explain why fossils are usually found in sedimentary rock. b. Based on the fossils found in various locations, infer how Utah environments have changed over time (e.g., trilobite fossils indicate that Millard County was once covered by a large shallow ocean; dinosaur fossils and coal indicate that Emery and Uintah County were once

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	<p>roads, telegraph, rail lines).</p> <p>e. Examine the interactions between physical geography and public health and safety (e.g. inversions, earthquakes, flooding, fire).</p> <p>f. Explain how archaeology informs about the past (e.g. artifacts, ruins, and excavations).</p>	<p>tropical and swampy).</p> <p>c. Research information on two scientific explanations for the extinction of dinosaurs and other prehistoric organisms.</p> <p>d. Formulate questions that can be answered using information gathered on the extinction of dinosaurs.</p>
<p>Essential Vocabulary</p>	<p>natural resources, landforms, regions, erosion, seismic activity, tourism, communication, transportation, archaeology, artifacts, excavations</p>	<p>infer, environments, climate, dinosaur, preserved, extinct, extinction, impression, fossil, prehistoric, mineral, organism, replacement, trilobite, sedimentary, tropical</p>
<p>Guidance for Integration</p>	<p>Comparing Utah’s Geography Social Studies 1.1 & 1.2, ELA: RI.4.7, SL.4.4, W.4.7 Choose a state to compare with Utah. Research physical features, population, population centers, industries, water, and the 3 ways geography affects the safety of people. Use a t-chart to collect data. Have student present their findings to the class. <i>Utah, Our Home Pg. 70</i></p>	<p>Dino Detectives Science 4.1 & 4.2, ELA: RI.4.3, SL.4.2 Students will research locations where fossils are found in Utah and plot them on a map of Utah, then use the information from the to hypothesize what Utah may have looked like in the past. http://www.uen.org/Lessonplan/preview?LPid=15084</p> <p>The Paleontologists Path Science 4.1 & 4.2, Math: 4.MD.1, Students use paper fossils to make measurements, and classify fossil plants. http://www.nps.gov/flfo/forteachers/paleontologists_path_1_3.htm</p> <p>How Big is a Dinosaur Math 4.MD.1 & Visual Art Standard 1.1 (making) the student will explore and refine the application of media, techniques, and artistic processes. Students work as a class to make a full scale drawing of a stegosaurus to hang in the classroom. http://www.uen.org/Lessonplan/preview?LPid=11146</p>

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Suggested Unit Resources	<p><i>Utah, Our Home</i> – Chapter 2 – 4</p> <p>UEN Teacher Resources: http://www.uen.org/core/core.do?courseNum=6040 http://www.uen.org/Lessonplan/LPview.cgi?core=4</p> <p>Physical Maps of Utah http://geology.com/state-map/utah.shtml</p> <p>Great Salt Lake Bathymetry Map http://pubs.usgs.gov/sim/2005/2894/PDF/SIM2894.pdf</p> <p>Utah Physiographic Provinces http://geology.utah.gov/surveynotes/gladasked/gladtopoform.htm</p> <p>Utah GIS Portal www.agrc.its.state.ut.us</p>		<p>State Science OER Textbook: http://www.schools.utah.gov/CURR/science/OER.aspx</p> <p>UEN Teacher Resource Book: http://www.uen.org/core/science/sciber/TRB4/index.shtml</p> <p>USOE Supports: http://schools.utah.gov/CURR/science/Elementary/Fourth-Grade.aspx</p>	
Explicit Ties to Reading Street	Reading Street Connection	Content Integration	Reading Street Connection	Content Integration
	<p>Week 1: <u>Smokejumpers, Camp with Care</u></p>	<p>Have students read p. 69 in <u>Utah: Our Home</u>. Next, have them read <u>Smokejumpers</u> and <u>Camp with Care</u> and discuss and generate a concepts map about what makes Utah a prime fire zone while identifying the characteristics of Utah’s climate and geography that contribute to fire danger, using the two texts for evidence. Also, have them consider the solutions for fire prevention and safety.</p>	N/A	N/A
	<p>Week 2: <u>Archaeology: Dig It; Looking for the Past; Lost City; Riding the Rails to Machu Picchu</u></p>	<p>Have students use information from the four texts in this week’s readings to explain how archaeology informs about the past and writing a summary with evidence from the text set.</p>		
Reading Street Online Readers	<p>From Spain to America (L790) The Dine (L850) Navajo Code Talkers (L1100) Ranches in the Southwest</p>	<p>Pompeii, The Lost City (L910) Rails Across America (L830) The Transcontinental Railroad (L1010)</p>	<p>Bone Detectives (L880) Cold Case: Dinosaurs (L1010) Dinosaur Bones Don’t Rot</p>	<p>Paleontology: Digging for Dinosaurs and More (L870) Formation of the Continents (L910)</p>



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	(L820) Ranching in the Great American Desert (L1000) The Long Journey West (L680) What do Archaeologists Do? (L1120)	Westward Expansion (L1140) Archaeologists Explore Early America (L1020)	(L280) Dinosaur Detectives (L540) The Dinosaur Detectives (L540) Finding a Dinosaur Named Sue (L740) I Collect Rocks (L290) Look at Dinosaurs (L50)	Searching for Dinosaurs (L950) Picturing the Past (L520) The Journey Through the Earth (L850) Going on a Dinosaur Dig (L460) What's New With Dinosaur Fossils (L1320)
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Unit 6: Reaching for Goals		
Reading Street Big Question: What does it take to achieve our goals and dreams?		
Content	Social Studies	Science
Essential Questions	How have humans altered Utah’s physical environment to meet their needs, and what might the impact of this have on Utah’s environment?	How does Utah’s physical geography determine the wildlife found in these environments?
Student Learning Targets	<ul style="list-style-type: none"> • I can analyze how human actions modify the physical environment. • I can describe how and why humans have changed the physical environment of Utah to meet their needs (e.g. reservoirs, irrigation, climate, transportation systems and cities). • I can make data-supported predictions about the future needs of Utahns and the natural resources that will be necessary to meet those needs. 	<ul style="list-style-type: none"> • I can describe the physical characteristics of Utah’s environment. • I can describe the common plants and animals found in Utah environments. • I can use a simple classification key (Dichotomous Key) to identify Utah plants and animals.
Example Performance Assessment	<ul style="list-style-type: none"> • Students analyze population and water usage data set to make predictions about population growth and water usage in the future. • Students describe geological formations that both deterred settlement and encouraged tourism in Bryce Canyon. 	<ul style="list-style-type: none"> • Create a map of Utah that identifies where wetlands, forests, and deserts are located. Write descriptions, and provide an illustration with details of the physical characteristics of each area. • Have students create a food chain with common plants and animals found in a specific Utah environment. • Use a classification guide to identify common species in Utah.
Content Standards	<p>Standard 1: Students will understand the relationship between the physical geography in Utah and human life.</p> <p>Objective 2: Analyze how physical geography affects human life in Utah.</p> <ol style="list-style-type: none"> a. Identify population concentrations in the state and infer causal relationships between population and physical geography. b. Classify the distribution and use of natural resources. c. Compare the development of industry and business in Utah as it relates to its physical geography (e.g. mining, oil, agriculture, tourism). d. Make inferences about the relationships between the 	<p>Standard 5: Students will understand the physical characteristics of Utah’s wetlands, forests, and deserts and identify common organisms for each environment.</p> <p>Objective 1: Describe the physical characteristics of Utah's wetlands, forests, and deserts.</p> <ol style="list-style-type: none"> a. Compare the physical characteristics (e.g., precipitation, temperature, and surface terrain) of Utah's wetlands, forests, and deserts. b. Describe Utah’s wetlands (e.g., river, lake, stream, and marsh areas where water is a major feature of the environment) forests (e.g., oak, pine, aspen, juniper areas where trees are a major feature of the environment), and

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	<p>physical geography of Utah and the state's communication and transportation systems (e.g. trails, roads, telegraph, rail lines).</p> <ol style="list-style-type: none">Examine the interactions between physical geography and public health and safety (e.g. inversions, earthquakes, flooding, fire).Explain how archaeology informs about the past (e.g. artifacts, ruins, and excavations). <p>Objective 3: Analyze how human actions modify the physical environment.</p> <ol style="list-style-type: none">Describe how and why humans have changed the physical environment of Utah to meet their needs (e.g. reservoirs, irrigation, climate, transportation systems and cities).Explain viewpoints regarding environmental issues (e.g. species protection, land use, pollution controls, mass transit, water rights, and trust lands).Outline the development of recreation in Utah since 1900 (e.g. sports, tourism, state, and national parks).Make data-supported predictions about the future needs of Utahns and the natural resources that will be necessary to meet those needs.	<p>deserts (e.g., areas where the lack of water provided an environment where plants needing little water are a major feature of the environment).</p> <ol style="list-style-type: none">Locate examples of areas that have characteristics of wetlands, forests, or deserts in Utah.Based upon information gathered, classify areas of Utah that are generally identified as wetlands, forests, or deserts.Create models of wetlands, forests, and deserts. <p>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.</p> <ol style="list-style-type: none">Identify common plants and animals that inhabit Utah's forests, wetlands, and deserts.Cite examples of physical features that allow particular plants and animals to live in specific environments (e.g., duck has webbed feet, cactus has waxy coating).Describe some of the interactions between animals and plants of a given environment (e.g., woodpecker eats insects that live on trees of a forest, brine shrimp of the Great Salt Lake eat algae and birds feed on brine shrimp).Identify the effect elevation has on types of plants and animals that live in a specific wetland, forest, or desert.Find examples of endangered Utah plants and animals and describe steps being taken to protect them. <p>Objective 3: Use a simple scheme to classify Utah plants and animals.</p> <ol style="list-style-type: none">Explain how scientists use classification schemes.Use a simple classification system to classify unfamiliar Utah plants or animals (e.g., fish/amphibians/reptile/bird/mammal, invertebrate/vertebrate, tree/shrub/grass, deciduous/conifers). <p>Objective 4: Observe and record the behavior of Utah animals.</p> <ol style="list-style-type: none">Observe and record the behavior of birds (e.g., caring for young, obtaining food, surviving winter).Describe how the behavior and adaptations of Utah
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		<p>mammals help them survive winter (e.g., obtaining food, building homes, hibernation, migration).</p> <ul style="list-style-type: none"> c. Research and report on the behavior of a species of Utah fish (e.g., feeding on the bottom or surface, time of year and movement of fish to spawn, types of food and how it is obtained). d. Compare the structure and behavior of Utah amphibians and reptiles. e. Use simple classification schemes to sort Utah's common insects and spiders.
<p style="text-align: center;">Essential Vocabulary</p>	<p>natural resources, landforms, regions, erosion, seismic activity, tourism, communication, transportation, archaeology, artifacts, excavations</p>	<p>infer, environments, climate, dinosaur, preserved, extinct, extinction, impression, fossil, prehistoric, mineral, organism, replacement, trilobite, sedimentary, tropical</p>
<p style="text-align: center;">Guidance for Integration</p>	<p>Population Growth & Water Usage Social Studies: 1.2, 1.3, Math: 4.NBT.4, 4.NBT.2, Practice Standard 7 & 8 Students analyze population and water usage data set to make predictions about population growth and water usage in the future. <i>Utah, Our Home</i> – page 98.</p> <p>Bryce Canyon National Park Social Studies: 1.3, Math: 4.MD.4, ELA: W.4.2, W.4.4, W.4.6, W.4.7, W.4.8, W.4.9, RI.4.9, Visual Arts: 1.1, ISTE: 1 Students will use visual evidence, such as graphs and charts, and primary sources to describe what deterred and encouraged settlement and tourism in Bryce Canyon. Student groups will select an additional national park in Utah and compare the founding of the park to the founding of Bryce National Park. Students will then create a promotion page for a newspaper or magazine, advertising their national park. Students will present their published work in a gallery walk or publish a class magazine/newspaper. http://www.cr.nps.gov/nr/twhp/wwwlps/lessons/64bryce/64bryce.htm</p>	<p>Physical Characteristics of Utah Map Science 5.1, ELA: W4.2 Students will write about surface terrain using specific vocabulary to explain how plants and animals are affected by temperatures and precipitation that elevation and terrain creates. Then the students will predict what type of environment plants and animals live in & create a map of the physical features of Utah. http://www.uen.org/Lessonplan/preview?LPid=10298</p> <p>Web of Life Science 5.2, ELA: SL.4.1 Have students create a food chain with common plants and animals found in a specific Utah environment and infer what might happen if specific animals are removed from the food web. http://www.uen.org/Lessonplan/preview?LPid=9979 Socratic Seminar – Should we take measures to protect endangered species in Utah? (June Sucker Fish, Woundfin Fish, Desert Tortoise, etc.)</p> <p>Classification of Utah Plants & Animals Science: 5.3, Math: 4.MD4, ELA: RI.4.9 Have students collect insects and/or tree leaves and then use classification field guides to identify the scientific name of each insect/tree. http://www.uen.org/Lessonplan/preview?LPid=10316</p>

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				Choose 1 species from their collection and read 2 different texts about the species, using a graphic organizer to collect information. Students share important information about their species with the class. Students measure each specimen in their collection, and create a line plot to interpret the difference in length between the longest and shortest specimen.
Suggested Unit Resources	Utah, Our Home – Chapter 3 UEN Teacher Resources: http://www.uen.org/Lessonplan/preview.cgi?LPid=23816			State Science OER Textbook: http://www.schools.utah.gov/CURR/science/OER.aspx UEN Teacher Resource Book: http://www.uen.org/core/science/sciber/TRB4/index.shtml USOE Supports: http://schools.utah.gov/CURR/science/Elementary/Fourth-Grade.aspx Geographical feature pictures: https://sites.google.com/site/utahbiomesplantsanimals/wetlands/wetland-plants-animals Plants and animals of Utah Photos: https://sites.google.com/site/utahbiomesplantsanimals/wetlands/wetland-plants-animals Utah Biomes and Plants: RI.4.4 W.4.2d http://www.uen.org/Lessonplan/preview?LPid=33056 http://centralpt.com/upload/324/2193_ED_UTbiomes.pdf Physical Characteristics of Utah http://utah.hometownlocator.com/features/ Common Plants/Animals of Utah https://sites.google.com/site/utahbiomesplantsanimals/wetlands/wetland-plants-animals
Explicit Ties to Reading Street	Reading Street Connection	Content Integration	Reading Street Connection	Content Integration
	N/A	N/A	N/A	N/A
Reading Street Online	From Spain to America (L790) The Dine (L850) Navajo Code Talkers (L1100)	What do Archaeologists Do? (L1120) Pompeii, The Lost City (L910)	All About Animals (L320) Animal Groups (L510) Classifying Living Organisms	Animal Groups (L510) Animal Ways of Life (L740) The Cat Family (L830)



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Resources	Ranches in the Southwest (L820) Ranching in the Great American Desert (L1000) The Long Journey West (L680)	Rails Across America (L830) The Transcontinental Railroad (L1010) Westward Expansion (L1140) Archaeologists Explore Early America (L1020)	(G6) Insects and Spiders (L840) Plant and Animal Classification (L820) Reptile or Amphibian (L860) All About Animals (L320) Animal Eggs (L680)	Desert Plants (L640) Many Ecosystems (L790) Places (L270) Where Plants and Animals Live (L540) Landforms and Water Ways (L1160)
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Hess' Cognitive Rigor Matrix & Curricular Examples: Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions – *Math/Science*

Revised Bloom's Taxonomy	Webb's DOK Level 1 Recall & Reproduction	Webb's DOK Level 2 Skills & Concepts	Webb's DOK Level 3 Strategic Thinking/ Reasoning	Webb's DOK Level 4 Extended Thinking
Remember Retrieve knowledge from long-term memory, recognize, recall, locate, identify	<ul style="list-style-type: none"> Recall, observe, & recognize facts, principles, properties Recall/ identify conversions among representations or numbers (e.g., customary and metric measures) 			
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), predict, compare/contrast, match like ideas, explain, construct models	<ul style="list-style-type: none"> Evaluate an expression Locate points on a grid or number on number line Solve a one-step problem Represent math relationships in words, pictures, or symbols Read, write, compare decimals in scientific notation 	<ul style="list-style-type: none"> Specify and explain relationships (e.g., non-examples/examples; cause-effect) Make and record observations Explain steps followed Summarize results or concepts Make basic inferences or logical predictions from data/observations Use models /diagrams to represent or explain mathematical concepts Make and explain estimates 	<ul style="list-style-type: none"> Use concepts to solve <u>non-routine</u> problems Explain, generalize, or connect ideas <u>using supporting evidence</u> Make <u>and justify</u> conjectures Explain thinking when more than one response is possible Explain phenomena in terms of concepts 	<ul style="list-style-type: none"> Relate mathematical or scientific concepts to other content areas, other domains, or other concepts Develop generalizations of the results obtained and the strategies used (from investigation or readings) and apply them to new problem situations
Apply Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task	<ul style="list-style-type: none"> Follow simple procedures (recipe-type directions) Calculate, measure, apply a rule (e.g., rounding) Apply algorithm or formula (e.g., area, perimeter) Solve linear equations Make conversions among representations or numbers, or within and between customary and metric measures 	<ul style="list-style-type: none"> Select a procedure according to criteria and perform it Solve routine problem applying multiple concepts or decision points Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps Translate between tables, graphs, words, and symbolic notations (e.g., graph data from a table) Construct models given criteria 	<ul style="list-style-type: none"> Design investigation for a specific purpose or research question Conduct a designed investigation Use concepts to solve non-routine problems <u>Use & show reasoning, planning, and evidence</u> Translate between problem & symbolic notation when not a direct translation 	<ul style="list-style-type: none"> Select or devise approach among many alternatives to solve a problem Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results
Analyze Break into constituent parts, determine how parts relate, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct	<ul style="list-style-type: none"> Retrieve information from a table or graph to answer a question Identify whether specific information is contained in graphic representations (e.g., table, graph, T-chart, diagram) Identify a pattern/trend 	<ul style="list-style-type: none"> Categorize, classify materials, data, figures based on characteristics Organize or order data Compare/ contrast figures or data Select appropriate graph and organize & display data Interpret data from a simple graph Extend a pattern 	<ul style="list-style-type: none"> Compare information within or across data sets or texts Analyze and <u>draw conclusions from data, citing evidence</u> Generalize a pattern Interpret data from complex graph Analyze similarities/differences between procedures or solutions 	<ul style="list-style-type: none"> Analyze multiple sources of evidence analyze complex/abstract themes Gather, analyze, and evaluate information
Evaluate Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique			<ul style="list-style-type: none"> <u>Cite evidence and develop a logical argument</u> for concepts or solutions Describe, compare, and contrast solution methods <u>Verify reasonableness of results</u> 	<ul style="list-style-type: none"> Gather, analyze, & evaluate information to draw conclusions Apply understanding in a novel way, provide argument or justification for the application
Create Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce	<ul style="list-style-type: none"> Brainstorm ideas, concepts, or perspectives related to a topic 	<ul style="list-style-type: none"> Generate conjectures or hypotheses based on observations or prior knowledge and experience 	<ul style="list-style-type: none"> Synthesize information within one data set, source, or text Formulate an original problem given a situation Develop a scientific/mathematical model for a complex situation 	<ul style="list-style-type: none"> Synthesize information across multiple sources or texts Design a mathematical model to inform and solve a practical or abstract situation

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I-CANyons Report Card Standards

Physical Science

- Describe the relationship between heat energy, evaporation and condensation of water on Earth through the water cycle

Earth Science

- Describe, observe, measure, and record weather and use data to predict weather patterns
- Explain the properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil
- Explain how fossils are formed, where they may be found in Utah, and how they can be used to make inferences

Life Science

- Identify the characteristics of Utah's wetlands, forests, and deserts and common organisms for each environment

Canyons School District Scientific Practices

Critical Features of Instruction	
Laboratory Skills	Mathematical and Computational Skills
<p>SCIENTIFIC PROCESS SKILLS</p>	
<p>Use CSD Lab Report Expectations</p> <p>1. Before a Lab</p> <p>Connect Conceptual Understanding with Experiment (Pre-Lab Activities)</p> <ul style="list-style-type: none"> • Activate Prior Knowledge • Build Background Knowledge • Text Overview/Scavenger Hunt/Surveying the Text • Connecting Visuals to the Surrounding Text • Pre-Lab Readings • Pre-Lab Quiz • Pre-teach Text-Related Vocabulary and Academic Vocabulary (Key Terms) <ul style="list-style-type: none"> ○ Key Terms ○ Academic Vocabulary ○ Text-Specific Vocabulary ○ Derivational/Roots ○ Word Patterns & Word Parts <p>Organize for Success in the Lab</p> <ul style="list-style-type: none"> • Assign & Rotate Lab Group Responsibilities • Write Lab Introduction <ul style="list-style-type: none"> ○ Identify Independent & Dependent Variables ○ Hypotheses & Procedures ○ Discussion of Theories/Concepts • Gallery Walk <p>2. During a Lab</p> <ul style="list-style-type: none"> • Collect data <ul style="list-style-type: none"> ○ Draw Pictures ○ Create Data Tables • Discuss findings with lab groups • Analyze Data • Write Conclusions <p>3. After a Lab</p> <ul style="list-style-type: none"> • Evaluate Student Data & Completed Lab Write Ups • Strategic Cross-Group Partnering (Think-Pair-Share) • Presentations <ul style="list-style-type: none"> ○ Mini Poster Sessions ○ PowerPoints/Prezi ○ Gallery Walk • Reciprocal Teaching • 30 Second Experts 	<p>1. Follow the Explicit Instruction Model</p> <ul style="list-style-type: none"> • I do • We do • You all do • You do <p>2. Teach and practice estimation skills</p> <ul style="list-style-type: none"> • Predict an answer prior to working out a problem • Compare prediction (theoretical) with actual (experimental) answer <p>3. Require units of measurement</p> <ul style="list-style-type: none"> • Always use metric system; measurements are meaningless without units • Scientific notation <p>4. Analyze data using grade appropriate mathematical skills</p> <ul style="list-style-type: none"> • Attend to precision, accuracy, and measurement of error <p>5. Building Mastery</p> <ul style="list-style-type: none"> • Fluency • Automaticity • Distributed Practice

Critical Features of Instruction

Comprehension

General Guidelines for Close Reading:

TEXT TYPES	Literary Text Fiction Literary Nonfiction Poetry	Informational Text Exposition Argumentation Procedural
READING IN SCIENCE	<p>1. Before Reading</p> <ul style="list-style-type: none"> • Select appropriate text • Activate Prior Knowledge • Build Background Knowledge • Think Alouds • Graphic Organizers • Concept Talk • Essential Question • Concept Map (Storyboard) • 30 Second Expert • Quick Write • Text Overview/Scavenger Hunt/Surveying the Text • Connecting Visuals to the Surrounding Text • Predict the Main Idea • Questioning • Agree or Disagree • Pre-teach Text-Related Vocabulary and Academic Vocabulary (Key Terms) <ul style="list-style-type: none"> ○ Key Terms ○ Academic Vocabulary ○ Text-Specific Vocabulary ○ Derivational/Roots ○ Word Patterns & Word Parts <p>2. During Reading Active Reading Strategies Help Students:</p> <ul style="list-style-type: none"> • Summarize • Analyze, Synthesize & Evaluate • Compare & Contrast • Active Reading Strategies: <ul style="list-style-type: none"> • Note-taking <ul style="list-style-type: none"> ○ Skeletal Notes ○ Cornell Notes ○ Double-Entry Journal • Vocabulary Strategies <ul style="list-style-type: none"> ○ Read-forward ○ Context Clues ○ Figurative & Connotative Meanings • Annotation <ul style="list-style-type: none"> ○ Marking Text ○ Writing in the Margins ○ Charting the Text • General Strategies <ul style="list-style-type: none"> ○ Cite Textual Evidence ○ Text Features & Structure (how to use a textbook) ○ Using Fix-Up Strategies (SQ3R, Monitor Comprehension, Reading-Reflection Pauses, Stop/Draw) ○ Four Corners 	<p>3. After Reading</p> <ul style="list-style-type: none"> • Graphic Organizers • Collaborative Reading Strategies <ul style="list-style-type: none"> ○ Reciprocal Teaching ○ Interactive Reading Guides ○ Strategic Partnering • Assign group work • Cite Textual Evidence • Text Features and Structure • Using Fix-Up Strategies (SQ3R, Monitor Comprehension, Reading-Reflection Pauses, Stop/Draw) <ul style="list-style-type: none"> • Socratic Seminar • Strategic Partnering (Think-Pair-Share) • Presentations <ul style="list-style-type: none"> • Interviews • Blogs • Wikis • Speech • PowerPoint/Prezi • Cite Textual Evidence • Reciprocal Teaching • 30 Second Expert • Gallery Walk • Learning Logs

Critical Features of Instruction Student Writing Recorded in Interactive Notebooks/Engineering Journals

WRITING IN SCIENCE	<p>Interactive Notebooks</p> <ul style="list-style-type: none"> • Right Side = Student Input <ul style="list-style-type: none"> ○ Notes from a lecture/guest speaker ○ Text or other source ○ Vocabulary words ○ Video and film notes ○ Procedures ○ Readings ○ Questions and answers ○ Sample problems • Left Side = Student Output <ul style="list-style-type: none"> ○ Brainstorming ○ Student generated concept maps/graphic organizers ○ Student questions ○ Student illustrations ○ Student annotations ○ Student generated poetry/songs/etc. ○ Evidence for own reasoning ○ Student generated data and graphs ○ Student generated analysis Writing ○ Student responses to writing prompts <p>Writing to Learn/Demonstrate Knowledge</p> <ul style="list-style-type: none"> • Quick write <ul style="list-style-type: none"> ○ Bell Ringers ○ Starters ○ Exit Tickets • Graphic Organizers (Venn diagram, webbing, KWL, T-chart) • Concept mapping • Anticipation Guide (pre-reading, pre-speaking, pre-listening) • Gallery walk/Carousel • Learning Logs • Summarizing • Cornell Notes • Formal/Informal Lab Reports • Lab Reports • Sentence Starters • Prompts • 5 W's + H • Observation vs. Inference • GIST Summary • Cause and Effect • Timelines • Biographies of scientists/engineer 	<p>Writing Process for Formal Scientific Writing/Sustained Writing</p> <p>1. Before Writing</p> <p>Prewrite (Individual and Collaborative)</p> <ul style="list-style-type: none"> • Choose Audience, Purpose, and Form • Rubric Preview • View and Analyze Student Examples • Reading and Research <ul style="list-style-type: none"> ○ Cornell Notes ○ Outlines ○ Listing & Grouping ○ Graphic Organizers ○ Discussion, Guided Critiques ○ Anticipatory Guide ○ Speculation/Predictions ○ Summarizing • Planning <ul style="list-style-type: none"> ○ Outlining ○ Quick writing ○ Gallery Walk ○ Graphic Organizers ○ Timelines ○ T-charts <p>2. During Writing</p> <p>Draft (Individual and Collaborative)</p> <ul style="list-style-type: none"> • Whole Class Draft • Small Group Draft • Filling in the outline <p>Reader Response (Individual and Collaborative)</p> <ul style="list-style-type: none"> • Verbal Response • Verbal Response Small Group • Written Response Peer • Pass the paper <p>Edit (Individual and Collaborative)</p> <ul style="list-style-type: none"> • Editing Journal • Expert Group Editing • Pass the paper <p>3. After Writing</p> <p>Final Draft Publishing (Individual and Collaborative)</p> <ul style="list-style-type: none"> • Self Evaluation and Reflection 	
	WRITING TYPES		<p style="text-align: center;">Argument</p> <p>Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.</p> <p><i>Use: controversial scientific topics, debate, & socratic seminar</i></p>

The 5 E Learning Cycle Model

An Inquiry Approach to Science Learning

Engagement	Object, event or question used to engage students. Connections facilitated between what students know and can do.
Exploration	Objects and phenomena are explored. Hands-on /lab-based activities with guidance.
Explanation	Students explain their understanding of their findings. Teacher elaborates on their findings with explicit instruction.
Elaboration	Activities allow students to apply concepts in context, and build on or extend understanding and skill.
Evaluation	Students assess their knowledge, skills and abilities. Activities permit evaluation of student development and lesson effectiveness.

Engage: Learner has a need to know, therefore, defines questions, issues or problems that relate to his/her world.

Learner	Teacher
Calls upon prior knowledge	Poses problems
Identifies problems to solve, decisions to be made, conflict to be resolved	Ask questions
Writes questions, problems, etc.	Assess prior knowledge

Explore: Learner gathers, organizes, interprets, analyzes, and evaluates data.

Learner	Teacher
Hypothesizes and Predicts	Shows students how to use new tools
Explores resources and materials	Guide students in taking more and more responsibility in investigations
Design and carry out investigations with care	Help design and carry out skills of recording, document, and drawing conclusions
Analyze data and draw conclusions	Help students form tentative explanations

Explain and Clarify: Learner clarifies understandings discovered, reaches conclusions or generalizations and communicates in varying modes and forms.

Learner	Teacher
Express ideas in a variety of ways: Interactive Notebooks	Provides feedback
Share understandings and feedback, while working collaboratively with other	Explicitly teaches the new content/objective ensure student

students	understanding
Offer explanations	
Tie findings from investigations to material explicitly taught by teacher	

Expand: Learner applies these conclusions or generalizations to solve problems, make decisions, perform tasks, resolve conflicts or make meaning

Learner	Teacher
Applies new knowledge	Provides feedback
Solves problems	Makes open suggestions
Seek further clarification	Asks new questions
Reflect with adults and peers	Ensures student reflection

CSD LAB REPORT EXPECTATIONS

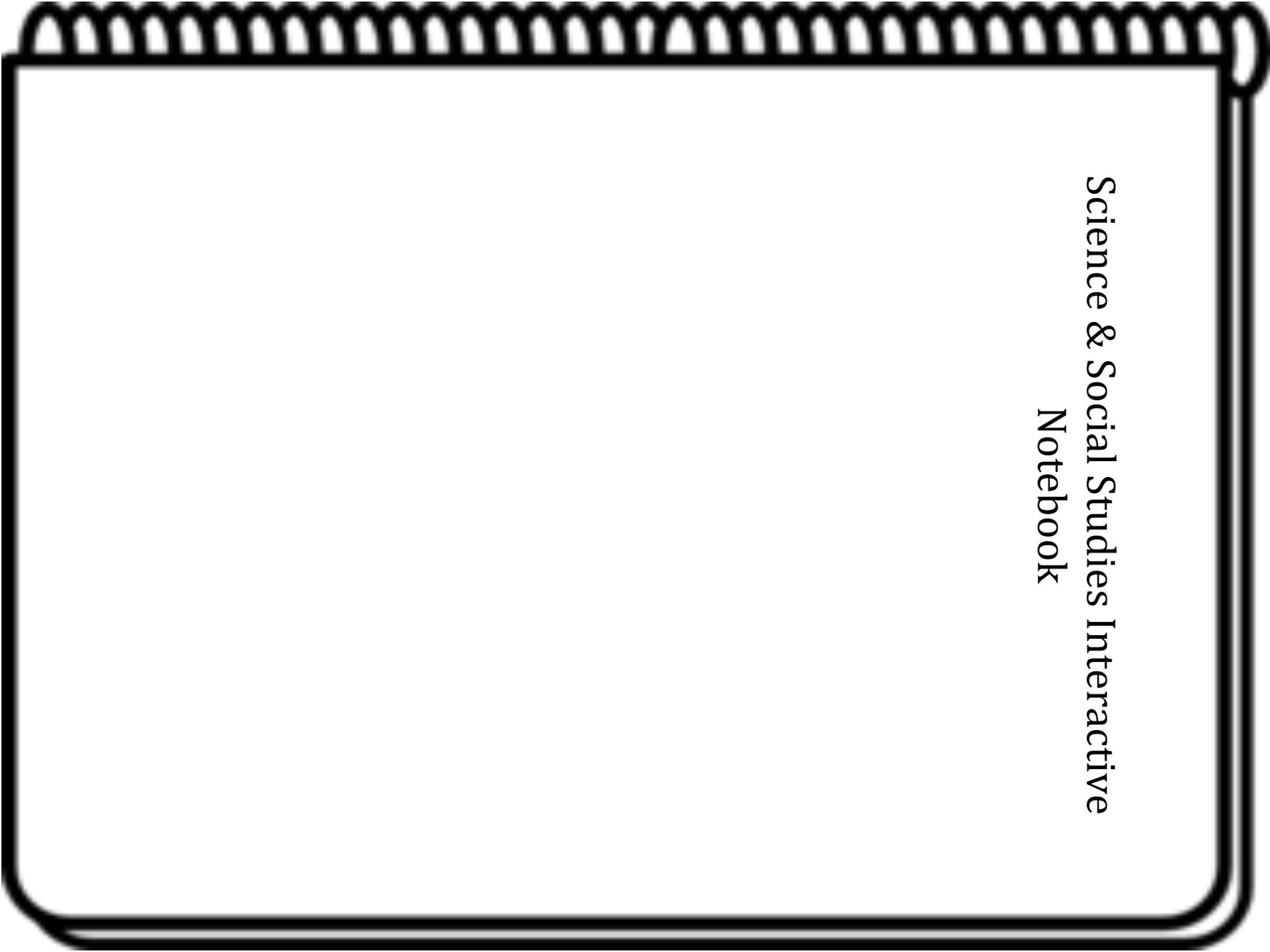
By the time students reach a high school science classroom, they should be able to write a comprehensive lab report. In order to properly scaffold, so students can meet this criteria, the following should be used when students work through a scientific investigation.

Each lab report should include the following:

Introduction	TITLE Work together with your group and teacher to determine an appropriate title for your lab.
	PURPOSE Describe the purpose or the problem in a few short sentences, and list anything that you already know that might help you solve the problem.
	VARIABLES Determine what variables you will change in your investigation, and which variables will remain the same.
	HYPOTHESIS A hypothesis is a statement about what you will be doing, and what you think might happen as a result based on your previous knowledge, and should be written in an if, then statement. For Example: If the diameter of a cars tires increase, then maximum speed of the car will decrease.
	PROCEDURE This section should include step-by-step instructions describing what you did to answer the question or problem given by the teacher. It must not contain any we, I, or us statements, and should be in a numbered list.
Data & Observations	DATA COLLECTION Create a data table where you will collect your data, observations, etc.
	GRAPHS Use your data to create a visual representation of it, or a graph. There are many different types of graphs, including a bar, graph, or pie graph. Determine which type of graph to use as a group, and then graph your data. Make sure to title your graph, and provide the appropriate labels on each axis.
Conclusion	This section of your lab report is the concluding statement of your argument. It should be written in paragraph formatting and include the following: <ul style="list-style-type: none"> • Restatement of the purpose of the lab • A brief account of what you did and how it came out • State whether hypothesis was correct or incorrect <ul style="list-style-type: none"> ○ Use data from the lab to support your claim ○ Describe relationships that were observed • Discuss problems encountered in the experiment if appropriate • List suggestions for further study

LAB REPORT RUBRIC

Title	1 Point		0 Points	
	Appropriate title included in report.	No title included in report		
Introduction	3 Points Introduction is in paragraph form, describes purpose, gives hypothesis, and shares detailed background information (at least 3 pieces).	2 Points Introduction is in paragraph form, describes purpose, and gives hypothesis, but does not provide enough background information.	1 Point Introduction is in paragraph form and either describes purpose or give hypothesis.	0 Points Introduction shares no relevant information or is not in paragraph form.
	3 Points Steps are in list form and written as full sentences (no listing), and there are no "I" statements.	2 Points Steps are in list form and written as full sentences (no listing).	1 Point Steps are in list form, but not in complete sentences	0 Points Procedure isn't listed, or isn't complete.
	5 Points Data tables and graph are included with labels.	3 Points Data tables and graphs are included, but have missing labels.	1 Point Only a graph and/or data table are present.	0 Points No table or graphs included.
Conclusion	3 Points Conclusion is in paragraph form with description of hypothesis result, reasons/explanation why results occurred using data points as evidence	2 Points Conclusion is in paragraph form with description of hypothesis results, reason results were occurred doesn't include appropriate data points	1 Point Conclusion is in paragraph form with description of hypothesis result included.	0 Points No appropriate conclusion given.

A black and white illustration of a spiral-bound notebook. The notebook is oriented vertically, with the spiral binding on the right side. The cover is plain white with a thick black border. The text "Science & Social Studies Interactive Notebook" is printed in a simple, black, sans-serif font, centered on the cover.

Science & Social Studies Interactive
Notebook

Interactive Notebook Rubric

5	<ul style="list-style-type: none"> • Notebook contents are complete, dated, labeled, and organized • Information on right-side and left-side topics correct • Notes are Cornell style, with questions • Displays superior understanding of content material • Well developed processing assignments that use color and effective diagrams • In-depth reflections about the work done
4	<ul style="list-style-type: none"> • Notebook contents are almost complete, dated, labeled, and organized • Information on right-side and left-side topics are correct • Notes are Cornell style, with questions • Displays good understanding of content material • Satisfactory processing assignments that use color and effective diagrams • Thorough reflection about the work done
3	<ul style="list-style-type: none"> • Notebook contents are almost complete, dated, labeled, and organized • Notes are Cornell style, with some questions • Information on right-side and left-side topics are mostly correct • Displays limited concept of understanding of content material • Processing assignments incomplete or lack use of color and effective diagrams • Shows reflection about the work done
2	<ul style="list-style-type: none"> • Notebook contents are incomplete or not dated, labeled, or organized • Notes are Cornell style, with few or no questions • Information on right-side and left-side topics are partially correct • Displays superficial understanding of content materials • Processing assignments show minimal processing of information • Shows little reflection about the work done
1	<ul style="list-style-type: none"> • Product is very poorly done and poorly organized • Few or no processing assignments are included

Using Interactive Notebooks

We will be using an Interactive notebook to collect and process information in our science class. Our notebooks use a left side and a right side to help you organize your learning. This notebook style uses both the right and left hemispheres of the brain to help you sort, categorize, remember and creatively interact with the new knowledge you are gaining. The more you process information, the more you begin to understand it. This leads to longer retention.

Important Things to Remember:

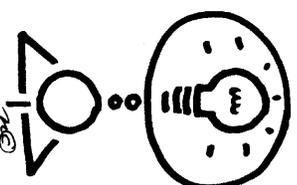
- Every notebook page should have a title, and should be recorded into the table of contents
- Note should be taken in Cornell style
- Notebooks should be brought to class everyday. It will be in your best interest to always have it.
- Number the pages sequentially.
- Do not remove any pages.
- Both right and left pages should be numbered. The first pages are reserved for a table of contents and instructions. Other information will be included as appendices.
- Use color to help organize your information
- Handouts, foldables, and other papers should be glued or taped in place. No staples.
- Notebooks will be graded weekly using self, peer, and teacher rubrics.

The Left Side

The left page demonstrates your understanding of the information from the right side of the page. You work with the input and interact with the information in creative, unique and individual ways. The left side incorporates and reflects how you learn science as well as what you learn in science.

OUTPUT GOES ON THE LEFT SIDE!

- Left side items include:**
- Brainstorming
 - Concept maps
 - Riddles
 - Your questions
 - Pictographs
 - Cartoons
 - Venn Diagrams
 - Data and Graphs you generate
 - Analysis writing
 - Reflecting writing
 - Quick write
 - Four square
 - Mnemonics
 - Significant statements
 - Flowchart
 - Graphic organizers
 - Drawing
 - Writing prompts



Things to Know About Left Sides

- Every left side pages gets used
- Always use color . . . It helps the brain learn and organize information
- Quizzes and tests are left side items
- Homework problems are left sides

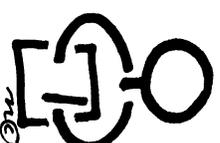
The Right Side

The right page is a place where you put all information that we learn in class.

INPUT GOES ON THE RIGHT SIDE!

Right side items include:

- Notes
- Guest speaker Notes
- Vocabulary words and definitions
- Video and film Notes
- Teacher Questions
- Readings
- Sample Problems



Keys to Fantastic Right Sides

- Always start the page with the date and title at the top
- The right side is for writing down information you are given in class
- Use Cornell style notes for lecture, discussion, etc.
- Write up your student questions ASAP
- Write summaries at the bottom of each page of notes to reduce the amount you have to study
- Use highlighting and color to make important info stand out



THE CORNELL WAY

- NOTE - TAKING:** Reading or hearing information for the first time while jotting down and organizing key points to be used later as learning tool.

C	Create Format	CREATE Cornell notes format and complete heading
O	Organize Notes	ORGANIZE notes on right side

- NOTE - MAKING:** Within 24 hours of having taken the notes, revised these notes, generate questions, and use collaboration to create meaning.

R	Review & Revise	REVIEW & REVISE notes
N	Note Key Ideas	NOTE key ideas to create questions
E	Exchange Ideas	EXCHANGE ideas by collaborating

- NOTE-INTERACTING:** Interact with notes taken by creating a synthesized summary. Use Cornell notes as a learning tool to increase content class achievement

L	Link Learning	LINK learning to create a synthesized summary
L	Learning Tool	Use completed Cornell notes as a LEARNING TOOL

- NOTE-REFLECTING:** Use written feedback to address areas of challenge by setting focus goals to improve future notes. The Cornell Note Reflective Log Handout provides the opportunity to reflect on the notes and the learning.

W	Written Feedback	Provide WRITTEN feedback
A	Address	ADDRESS written feedback
Y	Your Reflection	Reflect on YOUR learning

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Cornell Notes

TOPICS/STANDARD/OBJECTIVE	Heading
<p>ESSENTIAL QUESTIONS:</p> <p>The overall question that guides the content of the notes. It is based on the standard or objective in the heading. The summary should provide the answer to the essential question.</p>	
<p>QUESTIONS:</p> <p style="text-align: center;"><i>Right 2/3 of page</i></p> <ul style="list-style-type: none"> • Identify the main ideas in the notes. • Create study questions that are answered by each main idea. • Write higher-level questions (Costa's Levels 2 & 3) for the main ideas. <i>(Some material in the notes may not lend itself to higher-level questions.)</i> • Use the questions to study for quizzes and exams. 	<p>NOTES:</p> <p style="text-align: center;"><i>Right 2/3 of page</i></p> <ul style="list-style-type: none"> • Be prepared to actively listen and take notes. • Take notes in <i>your own words</i> while listening to the teacher, reading a textbook, watching a video, solving a math problem, or participating in a science lab. • Record <i>facts, explanations, definitions, graphs, etc.</i> • Use <i>abbreviations and visuals</i> that work for you. • Write in <i>phrases</i> (not complete sentences). • Don't worry about spelling except on important terms. • Write <i>important information</i>, not every word that is said or read. • <i>Listen</i> for important points emphasized by the teacher. • Fill in details, mark important information and vocabulary, and delete irrelevant information after class. • Use symbols (star, checkmark, etc.) to indicate what is significant. • Use memory cues: <i>underline, highlight, draw diagrams, etc.</i> • Use <i>different colors</i> to indicate changes in topics or to mark important vocabulary words or phrases. • <i>Review notes</i> with a partner whenever possible. • <i>Review notes 70-24-1 (after 70 minutes, 24 hours, and days).</i> <p>Note any points that need to be clarified with the instructor.</p>
<p>SUMMARY:</p> <ul style="list-style-type: none"> • Address the essential question of the lesson. • Answer the higher-level questions from the left side to tie together the main ideas. • Paraphrase (use your own words) the answers to the questions. 	

10-2-2 Note-Taking Structure

<p style="text-align: center;">10-2-2 Structure & Rationale:</p>	<ul style="list-style-type: none"> • The structure involves the following: <ul style="list-style-type: none"> 10 minutes: Presenting information/note-taking 2 minutes: Processing information 2 minutes: Summarizing information • Allows students the necessary time to process information and concepts presented in whole group instruction The structure allows for: <ul style="list-style-type: none"> Greater retention of information Improvement in the quality of notes, questions and summaries
<p>10 Minutes: Whole Group Instruction</p>	<ul style="list-style-type: none"> • The instructor lectures/presents information or gives and audio-visual presentation for ten minutes while the students take Cornell notes. • Encourage students to use abbreviations and short-cuts while taking notes.
<p>2 Minutes: Partners/Small 1 Groups</p>	<ul style="list-style-type: none"> • The instructor then pauses for two minutes while the students take time to process the information by working collaboratively in partners/small groups to do the following: <ul style="list-style-type: none"> Sharing notes Revising/refining notes Filling in gaps in notes Clarify information/concepts presented Create questions on the left side • During this time students are not allowed to ask the instructor questions; students should rely on the support of peers to assist them in processing the information.
<p>2 Minutes: Independently Process</p>	<ul style="list-style-type: none"> • The students then take two minutes silently to individually process the information and create a one-sentence summary to be placed across the page just below the chunk of notes. • The teacher may choose to have students share out their sentence summary as a way to check for understanding.
<p>Repeat the Process</p>	<ul style="list-style-type: none"> • Repeat the process until all information is presented.
<p>Last 5 Minutes of Class: Whole Group</p>	<ul style="list-style-type: none"> • Reserve the last five minutes of the period for the students to interact with the teacher. <ul style="list-style-type: none"> Students can ask questions to: Resolved unanswered questions Get clarification about information presented Sort out misconceptions/gaps

Steps for Summarizing Informational Texts

Step 1	Seek to understand the reading and writing tasks. What are you expected to know and do? What is the purpose in reading this text?
Step 2	Carefully read the text Number the paragraphs or sections. Read the text once to get a general idea of what the text is about. Avoid getting bogged down in all the details. Read for the big ideas and the structure.
Step 3	Reread and mark the text Circle the terms and underline the information relevant to the reading/writing tasks.
Step 4	Pause to connect ideas within the text How do ideas connect to each other? Draw pictures, diagrams, concept maps, or even link ideas within the text with lines/arrows, etc.
Step 5	Write summary statements for each paragraph in the margin What is the main idea of this paragraph or section? What items support the main idea? Write final summary Present ideas in an order that makes sense, starting with the main idea Refer to your markings on the text when writing your summary Include important vocabulary Use your own words in paraphrasing information, do not quote directly from the text It's okay to use an idea that is not yours if it is cited appropriately Limit your summary to one-fourth to one-third the original length of the text Re-read your summary for clarity
Step 6	

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Tips for Taking Notes:

- Listen for important points
- Write only important ideas such as names, dates, terms, places, and events.
- Use abbreviations for familiar words
- Identify the main idea
- Look up definitions
- Add symbols or highlight important words and concepts
- Review overall information

Tips for Writing Good Questions:

- Develop study questions from main ideas
- Write high-level questions (Costa's Level 2 & 3), rather than just factual questions

Costa's Levels of Thinking

3-Applying

"Off the page" or "From the brain"

Evaluate	Generalize	Imagine
Judge	Predict	Speculate
If/Then	Hypothesize	Forecast

2-Processing

"Between the Lines" or "From the book and brain"

Compare	Contrast	Classify
Sort	Distinguish	Explain (Why?)
Infer	Analyze	

1-Gathering

"On the page" or "From the book"

Complete	Define	Describe
Identify	List	Observe
Recite	Select	

Cornell Notes Reviewing & Revising

Directions: Review and revise notes taken on the right side. Use the symbols below to revise your notes.

Symbol	Revision
1,2,3... A,B,C...	Number the notes for each new concept or main idea.
	Circle vocabulary/key terms in a colored pencil
<i>Main Idea</i>	Highlight or underline main ideas in colored pencil
Reword in Red	Fill in gaps of missing information and/or reword/rephrase in red.
Unimportant Information	Delete/cross out unimportant information by drawing a line through it with a red pen
?	Identify points of confusion to clarify by asking a partner or teacher
*	Identify information to be used on a test, essay, quiz, etc.
Visual/Symbol	Create a visual/symbol to represent important information to be remembered

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Cornell Note

Student Sample



Acceleration

Class/Period: Physics
Date:

velocity

Notes:

Acceleration: the rate at which velocity is changing.

Can you have a negative accel? - b/c accel. is a rate, it is a measure of change in velocity with respect to time

What is it called?

$$\text{Acceleration} = \frac{\text{change in velocities}}{\text{time interval}}$$

What are 3 examples

of how a car can accelerate or - if change state of motion, accel. occurs
decelerate? - having good accel. means able to change velocity quickly

- accel. can decrease or increase
- when accel. decreases, is called deceleration or negative accel.

What has to change for accel. is directional, like velocity. If speed, something to direction, or both change, velocity changes accelerate and so does accel.

- Since accel. is the change in velocity or speed per time interval, the units are speed per time (m/s per sec) = m/s^2 (example)

Summary:

Acceleration means a change in velocity; whenever we change our state of motion, we are accelerating. If our acceleration is decreasing, it's called deceleration. Acceleration is directional, like velocity and its units are speed per time. Since acceleration is a rate, it is a measure of how the velocity changes w/ respect to time.

Cornell Notes Reflective Log

Standard/Topic: _____

List the pages where all notes and information on this topic can be found:

Read over the summaries from these pages, and identify 3 key learning(s) from these summaries.

-
-
-

How can you apply your key learning(s) to another concept you learned in this class, to another class, to yourself, or to real life?

What are some unanswered questions that you still have about this standard/topic?

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Unit Reflection

At the end of each unit, you will be asked to reflect upon your work. This writing sample begins on the left side of the notebook and continues on the right. While there is no required length, high quality reflection uses 1-2 pages of the notebook. Attach the parent feedback form at the bottom of the right hand page as required.

High Quality Reflection:

Select up to 4 items that represent your best work, 2 from the left side, 2 from the right side. Address the specific reasons why you chose these items as your best work as well as what these assignments reflect about your skills as a scientist/engineer. Please note: Reasoning that it was “fun” or just that you liked it is NOT adequate reflection. Some ideas to consider include:

- What about the left side activities helped you better understand and recall the material?
- How did you use different levels of questions to help you reach a deeper level of understanding?
- What did you learn from the activity (both content-wise and learning-wise)?
- What aspects of the work were high quality and why?
- What you would do differently in the future and why?

Assessment of Skill Set:

High quality reflection also examines your skill as a student. Skills you might discuss are your organization, analysis, logic, creativity, thoroughness, accuracy of information, ability to put new information together, understanding new concepts, etc. What specific study skills have you employed to be successful in this class? What organizational strategies appear in the notebook helped you learn the most? Elaborate.

Assessment of Unit Work as a Whole:

Indicate your overall rating of your notebook based on the rubric. Justify your rating with specific examples. Has your notebook improved from past notebooks? Explain.

Looking to the Future:

What are your goals for improvement in this class? List specific areas in which you feel you need to improve or need help improving. What specific changes would you like to see in this class? Explain.

Dear Parent/Guardian:

This Interactive Notebook represents your student's learning to date and should contain the work your student has completed in science class. Please take some time to look at his or her Interactive Notebook, read the reflection written in the notebook, and respond to any of the following:

The work I found most interesting was _____ because...

What does the notebook reveal about your student's learning habits or talents?

My student's biggest concern about this class is..

Parent/Guardian Signature: _____ Date: _____

If you have immediate concerns, please feel free to contact me at:

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Adult Input Page

To the adult: Completing this page will help your student to have a better understanding of the material learned in class. When a person teaches another, both learn, but the "teacher" often learns much more than the "student." Your student should discuss and teach you a concept covered in class. Please write down one or two sentences explaining what YOU LEARNED from the discussion and tutoring.

Date	What I LEARNED	Adult Signature