

Water Quality in the Great Salt Lake Watershed

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Jackson Elementary, 4th Grade

SLCSD

Community Mapping 6/25-29 U of Utah

Class: Salt Lake 2007

Project Description	<p>4th graders will test the water quality of three points in the Great Salt Lake watershed. We will gather and compare the data of Silver Lake in Big Cottonwood Canyon, the Jordan River near the school, and the Great Salt Lake. We may also include testing the soil at these three sites to see if there is any correlation. I would like my students to first be aware of the importance of water quality and second to become familiar with the different habitats at these three sites.</p> <p>We will use science journals to record the water and soil testing results as well as to keep simple habitat observations. Using a GPS unit we will take waypoints at these three sites. Later we will transfer these points to a map and create some data tables using ArcGIS. We will also prepare a summary that presents our findings.</p> <p>We will be partnering with a University of Utah fellow through the WEST (Water, Environment, Science Teaching) program. We may also partner with the Cottonwood Canyon Foundation and the SLC Watershed management.</p>
Community Issue or Problem Selected -How project evolved?	Water quality is a concern to all (people, plants, and animals) which share space in the watershed. My project evolved because of my participation in the WEST program which focuses on water and environment awareness in children. I also was inspired by our Community Mapping class project we did when testing the water quality of Parley's Creek.
Community Partner(s)	University of Utah WEST fellow Cottonwood Canyon Foundation Utah State Extension Water Quality Salt Lake City Public Utilities
Project Objectives	*Gather data on water and soil quality *Gather data on tree and animal species *Use GPS to map data *Create map that reflects data *Identify relationships between water quality, soil quality and species

	*Develop cooperative skills
Utah Core Standards/Objectives	<p>4th Grade Intended Learning Outcomes:</p> <ul style="list-style-type: none"> *Use science process and thinking skills. *Communicate effectively using science language and reasoning. *Demonstrate awareness of the social aspects of science. <p>Content:</p> <ul style="list-style-type: none"> * Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment. *Observe the basic components of soil and relate the components to plant growth. * Identify locations that hold water as it passes through the water cycle (e.g., oceans, atmosphere, fresh surface water, snow, ice, and ground water). * Describe how the water cycle relates to the water supply in your community.
Essential Question(s) -Spatial Issue	How does the water and/or soil quality change from Silver Lake to the Jordan River to the Great Salt Lake? Why does it change? What are the effects of this change?
Assessments (rubrics, scoring guides)	<ul style="list-style-type: none"> *Map shows waypoints of water and soil quality, species, *Map has titles, key, labels, scale *Rubric of partner/group cooperation skills *Summary presentation rubric *Journal has all data collected neatly
Project Products	<ul style="list-style-type: none"> *ArcGIS map *Science Journal *Summary Presentation (This is what our data means) w/ paper/pencil, PowerPoint, Photo Story, or Publisher, or other art form
Project Timeline (include a step by step Procedures)	<p>Aug, Sept:</p> <ul style="list-style-type: none"> *Build habitat background knowledge emphasizing dependence on water, introduce water testing *Build background knowledge on GPS (how to make and save a waypoint/tracks, how to read UTM's, how to download info. *Build background knowledge on computer skills (file management, using the mouse, other software) *Build background knowledge on ArcGIS by finding house and drawing a route from home to school *Practice cooperative learning skills <p>Oct.:</p>

	<ul style="list-style-type: none"> *Field trip to Silver Lake, test water/soil *Transfer data to ArcGIS Nov./Dec: *Field Trip to Jordan River, test water/soil *Transfer data to ArcGIS *Start comparing/contrasting data March *Field trip to Great Salt Lake, test water/soil *Transfer data to ArcGIS *Compare data from 3 sites *Begin summary reports April/May *Finish reports Present Findings to partners/parents
Resources Needed	<ul style="list-style-type: none"> *\$\$ and permission to go on field trips *GPS units *Adults and trainers to help gather and record data *GIS software *Digital Camera *WEST fellow *Time to make products *Science Journals *Soil, water testing kits *Macro-invertebrate collecting materials
Skills Required	<ul style="list-style-type: none"> *Test Water *Test Soil *Soil Background Knowledge *Water Quality Background Knowledge *Relationships in a Habitat Background *Record Data on a T chart *Identify trees, animal species *Content and Academic vocabulary (data, sample, record, GPS, cooperate, coil, turbidity, temperature, PH balance, habitat, water shed) *Use ArcGIS program *Use PowerPoint, Photo Story, or Publisher *Work with a group/partner *Computer File Management
Project Team Member Roles	<p>Teacher(s): Plan and coordinate project. Prepare and guide students. Assess project product.</p> <p>Students: Work cooperatively to test water at the 3 sites, mark waypoints with GPS, record data, present findings.</p> <p>Partner(s): Attend field trips and/or provide support in collecting/presenting data.</p>
Celebration/Presentation	<ul style="list-style-type: none"> *Create class bulletin board in the hall way to display maps *Share with other 4th grade class doing WEST

	<ul style="list-style-type: none"> *Field Trips *Present to community partners
Project Evaluation	<ul style="list-style-type: none"> *Map shows waypoints of water and soil quality, species, *Map has titles, key, labels, scale *Rubric of partner/group cooperation skills * Relationship summary rubric *Journal has all data collected neatly
Project Bibliography	<p>Site all sources used for background knowledge, pictures, etc. Info Sources: Water Keep it Pure Binder</p>
Plans for Future CMAP Activities	<ul style="list-style-type: none"> *Identify pollution points along water ways. *Map certain birds or plants found in the three sites. *Observe the change over time. Discuss the reason why certain species are thriving and/or struggling.