

Project Title: Student designed Campground on Miller's Flat Road
Created by: Andy Pollaehne
Class: Price 2009

Project Description	Student designed Campground on Miller's Flat Road
Community Issue or Problem Selected -How project evolved?	<p>This part of the Manti-LaSal Forest is heavily used both by locals and people from the Wasatch Front. A certain amount of ecological damage is occurring. With a Campground designed with hardened roads and sites the most damaging part of the camper's experience will be mitigated.</p> <p>The Forest Service is deciding how to develop this area at this time.</p>
Community Partner(s)	Bill Broadbear, Forest Supervisor in charge of recreation activities for the Manti-LaSal North Zone.
Project Objectives	<ul style="list-style-type: none"> • Students will map trees and obstacles in Campground proposal area. • Students will propose possible roads and camp locations based on GPS and topographical data. • Students will mitigate possible continued damage with proposed plan. Looking at biological and geological and archeological concerns.
Utah Core Standards/Objectives	<ul style="list-style-type: none"> • 9th Grade ESS Standard 4-1-e, Analyze how communities deal with water shortages, distribution, and quality in designing a long-term water use plan. • 9th Grade ESS Standard 5-1-c, Interpret evidence suggesting that humans are influencing the carbon cycle. • 8th Grade IS Standard 2-2-d, Research multiple ways that different scientists have investigated the same ecosystem. • 8th Grade IS Standard 2-3-c, Infer the potential effects of humans on a specific food web. • 8th Grade IS Standard 3-4-d, Investigate and report possible reasons why the best engineering or ecological practices are not always followed in making decisions about building roads, dams, and other structures. • ILO 1, Use Science Process and Thinking Skills <ol style="list-style-type: none"> a. Observe objects and events for patterns and record both qualitative and quantitative information. b. Sort and sequence data according to a given criterion. c. Develop and use categories to classify subjects studied. d. Select the appropriate instrument; measure, calculate, and record in metric units, length, volume, temperature and mass, to the accuracy of instruments used. e. When given a problem, plan and conduct experiments in which they: <ul style="list-style-type: none"> • Form research questions. • Discuss possible outcomes of investigations. • Identify variables. • Plan procedures to control independent variable(s). • Collect data on the dependent variable(s). • Select appropriate format (e.g., graph, chart, diagram)

	<p>to summarize data obtained.</p> <ul style="list-style-type: none"> Analyze data and construct reasonable conclusions. Prepare written and oral reports of their investigation. <p>f. Distinguish between factual statements and inferences. g. Use field guides or other keys to assist in the identification of subjects studied.</p>
Essential Question(s) -Spatial Issue	<ul style="list-style-type: none"> What is a GPS? What is GIS ArcMap? What resources are available for your use as a student? What help is available from the Forest Service? What Makes a good campground? What standards does the Forest Service expect for a good campground? How could a new campground be developed? How will this project influence our community?
Assessments (rubrics, scoring guides)	Student will develop an ArcMap project that is ready for the Forest Service to evaluate.
Project Products	<ul style="list-style-type: none"> Student understanding of GPS-GIS use. Several well designed campground plans for the Forest Service to evaluate and possibly implement.
Project Timeline (include a step by step Procedures)	<p>2009-2010 School Year (General)</p> <ul style="list-style-type: none"> Draft of plan by January Detailed plan by February Final plan to Forest Service in early March
Resources Needed	<p>Classroom set of GPS GIS software on school computers Topographic maps of Miller's Flat Road Aerial Maps of Area</p>
Skills Required	<ul style="list-style-type: none"> Form research questions. Discuss possible outcomes of investigations. Identify variables. Plan procedures to control independent variable(s). Collect data on the dependent variable(s). Select appropriate format (e.g., graph, chart, diagram) to summarize data obtained. Analyze data and construct reasonable conclusions. Prepare written and oral reports of their investigation.
Project Team Member Roles	<p>Teacher(s): Andy Pollaehne (Science), Dean Stilson (Geography), Curt Collard (Math)</p> <p>Students: 8th and 9th grade Students will be grouped together in teams of 3 or 4 students (3 preferred)</p> <p>Partner(s): Forest Service</p>

Celebration/Presentation	Ask Bill Broadbear from the Forest Service to come to the school and see the presentations made by the students with their campground proposals.
Project Evaluation	Project Evaluation by the Forest Service partners.
Project Bibliography	Standards for Forest Service Campgrounds A brief introduction to NEPA regulations GIS ArcMap instruction manual
Plans for Future CMAP Activities	Students could incorporate future community input into plans for other campgrounds or Forest Service capital outlay projects.

Optional:

- Lesson Plans
- Student Artifacts
- Publicity