

IMPACT



Lemhi County, 201 Broadway, Salmon, Idaho 83467; 208-756-2824; Fax: 208-756-2349

Youth Experience Science at Junior High Science Days

The Situation

Youth ages 12 to 14 like to learn by self discovery as they develop from concrete to more abstract thinkers. Teens enjoy learning in small groups so that they can test ideas. Group experiences provide opportunities for social interaction and acceptance.

Jon Dewey said “Experiential learning takes place when a person is involved in an activity, looks back and evaluates it, determines what was useful or important to remember, and uses this information to perform another activity.” Youth learn best when they can “do,” “reflect” and “apply” a principle. This can be accomplished by having them experience the activity, share the results or observations, process it by discussing it, connect it to real-world examples, and apply it to a new situation.

Science is a subject that lends itself to the experiential learning model, and to the utilization of outdoor classrooms. The potential to have “Science Days” for Junior High students in Lemhi County was identified as a top priority by the University of Idaho Nancy M. Cummings Research, Extension and Education Center (NMCREEC) Education Committee. The center provided the perfect outdoor classroom to host science specific activities.

Many science skills including data collection, predicting, estimating, analyzing, calculating, and comparing and contrasting are used during Science Days at the NMCREEC. Other important processes such as using technology, following technical instructions, working within a group, interacting

with professionals in the various science fields, enhancing curiosity and making direct observations are also emphasized. All of these are part of the Idaho standards for science education.



Youth enjoy experiencing the “science” at the Science Days.

Our Response

Jeanne Withers, NMCREEC Education Committee, Arlene Wolf, Salmon Junior High Science Teacher, and Shannon Williams, Lemhi County Extension Educator, worked together to develop “Junior High Science Days.” The first science day was held in May 2003, for the 8th graders of Salmon Junior High. In 2004, Science Days were developed for the 6th and 7th graders, who used the themes of “agriculture” (6th graders) and noxious weeds (7th graders). “Water quality” and “global positioning units” were identified as topics for the 8th graders. The development team solicited and coordinated multiple efforts and resources with the Forest

Service, Bureau of Land Management, Natural Resource Conservation Service, Upper Salmon Basin Model Watershed, Lemhi County Cattlemen, Weed Goats 2000, Upper Hand Weed Control, Green Jean's Weed Control, and Lemhi County Weed Control to host the workshops.

The 8th graders utilized a simple water test kit and ran a variety of different tests including dissolved oxygen, turbidity, phosphorus, ph, nitrates and temperature. While running the tests, instructors explained the significance of each test. Youth enjoyed learning about the interworkings of global positioning units and how they function. Youth had the opportunity to take point readings and utilized the navigation feature while on a "treasure hunt."

Seventh graders learned about integrated noxious weed control during their "science day." Topics included "biological control" where they learned about various insects that control weeds, and youth had the opportunity to go on a "bio hunt." During the grazing workshop, students learned how grazing controls weeds, and had the chance to feed noxious weeds to goats and sheep. Identification and prevention were part of an integrated approach. Youth began to understand how noxious weeds are spread and how to identify weeds found in Lemhi County. While learning about herbicide control, they utilized surfactants to assist with the absorption of "herbicide" on flannel mulch. Once noxious weeds are eradicated, re-seeding becomes necessary. Youth took turns running a broadcast seeder.

"Our Food Comes from Agriculture" was the slogan for the 6th grade science day. Youth attended workshops on beef production, forages, irrigation, and soils. Workshops were taught by local ranchers and experts. Youth learned about the various cuts of beef and how long it takes a cow to have a calf. They discussed the amount of feed a cow needs and where it comes from. They left with an understanding that cattle utilize forage plants that humans cannot. Irrigation is necessary to produce the best forage for cattle. Presenters discussed the various methods of irrigation and where irrigation water comes from. All things start with soil. In the soil workshop, youth had an opportunity to make soil ribbons and learned about the amount of moisture that certain types of soil can hold.

Program Outcomes

The "Science Days" program has just completed its third year. Junior high teachers are becoming more familiar with the program and are planning course work around the science day. Youth are required to write three things they learn in each workshop. Eighth graders complete a worksheet with the results of the water test and an information sheet on global positioning units. In 2005, a teachers and chaperones survey was conducted to evaluate the program. The survey indicated that adults felt the Science Day was an effective use of time and resources. Instructors surveyed for suggestions and ideas, determined that by the fourth rotation of workshops youth were able to relate to all of the workshops together, and make the connection for the Science Day theme.

Science Days will continue to be held in September or October of each year. Presenters are being asked to further develop their presentations to include more "hands-on" experiences for the youth.

For More Information

Shannon Williams, Extension Educator
University of Idaho Extension—Lemhi County
201 Broadway
Salmon, ID 83467
208-756-2824
Fax: 208-756-2349
Email: shannonw@uidaho.edu

Jeanne Withers
Cummings Center Education Committee
815 Lemhi Road
Salmon, Idaho 83467
208-756-6926
Email: witherslaw@salmoninternet.com

Arlene Wolf
Salmon Junior High Science Teacher
805 Lena
Salmon, ID 83467
208-756-2207
Email: awolf411@hotmail.com