

Eagle's Nest/Owl's Roost Environmental Discovery Day Camp

ABSTRACT

Eagle's Nest/Owl's Roost (ENOR) is an Environmental Day Camp located in Jefferson County Colorado for students entering the 4th and 5th grades. A paid staff consisting of a director, two supervisors and eight camp educators leads the camp. Campers attending ENOR participate in a number of environmental enrichment activities such as wildlife identification, renewable energy topics, water conservation, Colorado history, and ecology; as well as development of social themes such as team work, cooperation, friendship, respect for each other and the environment.

ENOR has been a part of Jefferson County 4-H since 1974 and has educated nearly 15,000 youth. The program is aligned with the program standards of the Colorado Department of Education. These standards are intended to facilitate the cultivation of knowledgeable, responsible and critical thinking participants in the local and global community. Real-world situations are used when appropriate and the curriculum is updated as needed in order to offer campers the most relevant and practical information possible. The goal of ENOR is to then have campers become environmental ambassadors who will pass this information on to their families, friends and neighbors.

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Program of Distinction Category

Science, Engineering and Technology Literacy Categories

- Natural Resources Education

Sources of Funding that Support this Program

Campers pay a registration fee of \$140 per week, which allows for a predominantly self-sustaining program. Jefferson County and Colorado State University cooperatively provide additional support. Limited, need-based funding is provided through grants and fundraising efforts by a non-profit support group, Friends of ENOR, Jefferson Conservation District, Colorado State University and Epsilon Sigma Alpha - Theta Eta Chapter.

Program Content

Knowledge and Research Base

Linda Saunders and Smuggles Culver, CSU Jefferson County Extension, developed the Eagle's Nest curriculum for fifth graders and the Owl's Roost curriculum for fourth graders in the mid-1970's. The curriculum has been refined over the 30 years of program operation by Educational and Marketing Consultants with Colorado State University, Jefferson County Extension, and Jefferson County R-1 School District. Activities and initiatives used in the curriculum came from a variety of sources including:

- Leadership and Natural Resource activities developed at Michigan State University
- Project Learning Tree
- Project WILD

Child development materials are used from:

- University of Missouri-Columbia
- The Jefferson Center for Mental Health
- Jefferson County Family Youth Services
- The National Network for Child Care

Needs Assessment

Jefferson County is one of the major metropolitan counties within the State of Colorado. Encompassing 773.2 square miles, with three-fourths of the area mountain land, Jefferson County is home to over a half a million people. Approximately one-third of the residents live in the unincorporated areas of the county. The county is also home to Colorado's largest school district, Jeffco Public Schools. The most recent CSAP (Colorado Student Assessment Program) science scores show that only 52% of the district's 5th grade students are at the proficient or advanced proficiencies level. Sixty-six percent of 4th grade students are at the proficient level according to a District Embedded Assessment.

The ENOR Environmental Day Camp addresses the need for programs that support the sciences by enabling 4th and 5th grade students in Jefferson County to gain knowledge of the natural world through hands-on and real life experiences. Since the program's inception in 1974, over 15,000 camper's lives have been enriched by ENOR. Additionally, ENOR contributes to the national goal for the 4-H Youth Development Program to prepare 1 million new young people to excel in science, engineering, and technology by 2013.

Program Goals and Objectives

The 5 Objectives of the ENOR program are as follows.

- Awareness
- Knowledge
- Skills
- Attitude
- Participation

The objectives are assessed through a series of 23 measurable student outcomes. In addition to ongoing assessment of learning, retention, and application of knowledge, campers fill out an evaluation at the end of the program, which gives them the opportunity to share their favorite activities, their most memorable moments, and what information they intend to share with their friends and families. Upon completion of the program, students will be able to:

- Describe a variety of environmental conditions from first-hand experiences.
- Describe a variety of environments through the use of all five senses.
- Describe components of the environment they value.
- List renewable and non-renewable resources.
- List and define the 3 basic types of rocks.
- Describe land formations and how they were formed.
- Cite examples of the food chain.

- Explain the concept of habitat and describe the organisms that share a particular habitat.
- Explain the interrelationships of organisms within a habitat.
- Describe the importance of water within our environment.
- Provide examples of the sun as a source of energy.
- Use a map and compass to find directions.
- Describe landmarks of a given site.
- List precautions to keep from getting lost in the wilderness.
- List hypothermia prevention techniques.
- Describe and practice survival procedures if lost in the wilderness.
- Work constructively with a group to solve a problem.
- Identify several local environmental problems.
- Show an interest in actively helping to solve environmental problems.
- Show responsibility in taking care of him/herself and taking care of the environment.
- Exhibit respect for all living things by refraining from needless destruction or interruption of plant and animal life and by demonstrating positive social relationships with his/her peers.
- Show he or she enjoys and feels comfortable in the outdoor environment.
- Demonstrate an increased awareness of wildlife and plants in Colorado.

Target Audience

The target audiences for the ENOR program are 4th and 5th grade students in Jefferson County. The statistics for the last five years show that ENOR program attracts a slightly larger number of male participants (57%) than female (47%) participants. The ethnicity breakdown for the past five program years is as follows: White - 78%, Hispanic – 9%, Asian – 5%, Black - 4%, American Indian – 2% and Other – 2%.

Jefferson County is the second largest county in Colorado. Once an agricultural and mining area, Jefferson County is now a thriving suburban, business, industrial and residential area where the plains meet the Rocky Mountains. School district student enrollment data is used to generate mailing lists and students are directly solicited for camp participation through a brochure.

Type of Program

Special interest/Short-term program/Day Camp: ENOR is considered a special interest/short-term program/day camp by National 4-H reporting standards. The campers attend each day (Monday through Friday) of one week for five consecutive weeks, and they are exposed to a new location with unique environmental and social themes every day.

Delivery Methods

Campers are separated into two large groups (of 44 or fewer) based on the grade they will be entering. Owl's Roost campers are those going into 4th grade in the fall and Eagle's Nest campers are those going into 5th grade in the fall. Then, campers are placed into small groups of 11 or fewer for the week.

Educators deliver the curriculum to the campers in the field through a series of varied teaching techniques, with particular emphasis on hands-on skill building and inquiry-based learning. Team-building concepts and initiatives are incorporated into the curriculum primarily at the beginning of each week, in order to facilitate cooperation

and an increased trust level among the groups. Real-world situations are used when appropriate and the curriculum is updated as needed in order to offer campers the most relevant and practical information possible.

Curricula and Educational Materials

ENOR, recognized by the State of Colorado as a licensed day care provider, is developed to provide unique standards-based curriculum to campers each day of the week. Formulated in conjunction with Jefferson County school personnel, the curriculum covers topics that include standards-based lessons in science, math, history, and the arts.

Supplemental materials have been incorporated into the program to aid in enhanced environmental understanding, including plant and animal identification field guides, pertinent story books, and the “Beavers Build a Better World” kit, which is loaned to the program by Jefferson County Open Space’s Lookout Mountain Nature Center.

While some of the activities found in the program represent “tried and true” environmental education practices (such as the Habitat Lap Sit activity, which reinforces the Web-of-Life concepts), constant attention is paid to selecting activities that correlate with Colorado State Model Content Standards, the changing demographics (geographically, culturally, socio-economically, and racially) of the participants, and the favorite activities campers recall from previous years.

Each camper (approx. 350 per summer) attends the program for one week and is transported daily from a central location to a variety of sites via local school district buses. Nearly 15,000 campers have participated in ENOR since its inception in 1974.

The educational and social themes of the curriculum and the sites the groups visit by day are:

Eagle’s Nest (5th Grade)

DAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
SITE	Reynolds Park Jeffco Open Space Park	Golden Gate State Park	Central City & Nevadaville	Mt Evans Outdoor Lab School & Idaho Springs	St. Mary’s Snowfield
SOCIAL THEME	Friendship	Listening	Respect	Cooperation	Teamwork
ENVIRONMENTAL EDUCATION THEME	Trees	Wildlife	Colorado History	Geology	Forests and Alpine Ecology

Owl's Roost (4th Grade)

DAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
SITE	Chatfield Lake Recreation Area	White Ranch Jeffco Open Space Park	White Ranch Jeffco Open Space Park	Elk Meadow Jeffco Open Space Park	Golden Gate State Park
SOCIAL THEME	Respect for the Environment	Good Listener/ Good Learner	Friendship/ Communication	Teamwork/ Cooperation	Review of Social Themes
ENVIRONMENTAL EDUCATION THEME	Water Resources	Outdoor Survival Skills	Homes and Habitats	Sun and Energy Resources	Environmental Change & Adaptations

Teamwork and Collaboration

The program is coordinated by the 4-H Camp Coordinator in Jefferson County. Cooperating partners include:

- Jefferson County School District: personnel are instrumental in distributing camp brochures to every age-eligible student in the district and promoting the camp through school publications.
- Jefferson County Open Space Parks: rangers and naturalists contribute to the educational components of the program by training camp staff and coordinating visits to parks and facilities during normal program operation and inclement weather situations.
- Colorado State Parks: personnel coordinate visits to the parks and also aid in training camp staff, specifically training staff on wildfire ecology and lightning preparation.
- The Army Corps of Engineers: coordinates tours of the Chatfield Recreation Area, where the campers are presented with the inner-workings of a functioning dam and historical accounts of Colorado's water-use and facilities management.
- Clear Creek County School District: provides school buses and qualified drivers to transport campers safely to the daily sites.
- The Colorado School of Mines: staff lead Eagle campers on a tour of a functioning, experimental mine.
- The Gilpin County Historical Society and Museum: personnel coordinate tours and aid in training staff to present exhibits and items of local historical significance, and gold panning techniques to campers.

Program Evaluation

Methods

Surveys were distributed to campers and parents at the end of the week to assess the campers' learning experiences and their parents' experience with the entire camp process, including aspects of program marketing, registration, and their children's experience.

Process Evaluation

The post-test was developed in conjunction with the curriculum and in cooperation with the school district personnel. The main emphasis of the evaluation was to demonstrate learning key concepts, but also to show longer-term and far-reaching

impacts, such as sharing learning with family and incorporating environmentally friendly practices in the home. Survey return rates for both parent (54%) and camper evaluations (79%) represent a high rate of return for a post-survey and are a testament to the hard work of staff in encouraging responses from participants. These rates are similar to those of 2007, (52% and 66% respectively) and thus, the statistics will provide accurate comparison information. Parents were also given the option of mailing in surveys, which resulted in some additional and valuable feedback.

Outcome Evaluation

Camper Learning Experience

Campers were asked to write about their favorite day/activity, what they would share with family and friends about their experience, and to give an example of what they could do to help the environment. Sliding down St. Mary's Snowfield, visiting the Colorado School of Mines' (CSM) Edgar Mine, and touring Nevadaville (Colorado History Day) were the top three days/activities for Eagles. Owls enjoyed Chatfield Dam, learning about animal habitats at White Ranch through various games and activities, and many indicated a great appreciation of the teamwork games and activities that are offered as part of the Owl's curriculum.

In addition to having fun, campers evidently learned from their camp experience. One hundred percent of the Eagles and 99 percent of Owls were able to write about their favorite learning experiences. The ability to name plants or animals, an increased understanding of the food chain and food webs, and historical, geological or earth resources (water, soil, energy etc.) facts were the most commonly listed in this category.

Intentions to act in a more environmentally conscious manner were also evaluated. Ninety-eight percent of both Eagles and Owls listed at least one action they could take to help the environment. Picking up trash, recycling, practicing "Leave No Trace" ethics, conserving water and energy were commonly mentioned. In addition, 98 percent of both Eagles and Owls campers were able to write about one practice they will teach or share with their families, indicating an indirect and potentially far-reaching long-term effect of the camp on participants and their families. Campers recalled skills such as compass reading, tree and wildflower identification, safely observing and interacting with wildlife, and environmental education games and activities they enjoyed during the week.

Parental Communication

The first three questions on the parent survey are designed to test whether the campers were able to understand key messages of the program. Positive responses from both Eagles and Owls indicate that ENOR staff is effectively teaching the standards-based curriculum and program content and that these environmental practices are being shared with family members (parental surveys are completed by campers and parents together).

The fourth question on the parent survey is a key indicator that camper participation is affecting family knowledge and behavior. It indicates that "as a result of my child attending this program, our family will adopt at least one wise environmental practice in our home (e.g. recycling, hiking on Open Space, discussing environmental issues)". Eighty-one percent of Eagles and 87 percent of Owls campers agreed or strongly agreed with this statement, which bodes well for the overall long-term objectives of the program.

The final questions of the parent survey refer to staff/parent communication and overall satisfaction with the program. These responses were all over 93% for both programs indicating that instructions to the parents were clear, the fee was compatible with the quality of the experience, the staff was friendly, caring and qualified and that the campers' experience was a positive one.

It is clear through an analysis of the data that ENOR campers are gaining the knowledge they need to become independent problem solvers when it comes to matters of ecological importance within their own communities. Not only are they becoming critical thinkers, but also they are sharing their enthusiasm and experiences with their parents and peers, spreading the message of environmental stewardship far and wide.

Communication to stakeholders

At the end of each season, a detailed report is compiled, which includes a summary of camper demographics (including gender ratios, racial/ethnic information, school and hometown listings), camper and parent evaluation results and feedback, marketing outcomes, financial aid assistance, and a general overview of camp operations and anecdotes. Long-term data is included when available and appropriate in order to give supporters and stakeholders as much information as possible regarding trends in the impacts and outcomes of camp participation. This report is mailed out to camp staff, local decision makers, state 4-H staff members, scholarship sponsors, and all cooperating partners involved in program planning and implementation.

Evidence of Sustainability

Consistent efforts are made to ensure program sustainability by diligently structuring of program expenses to be equal to or less than revenue generated through registration fees. Program participants (parents) are asked if they believe that the "program tuition is compatible with the quality of the experience", and responses are consistently near 100% positive, indicating that parents feel they are getting a quality program at a reasonable cost. Additional funding sources are sought each year to supplement program scholarships for families in need of assistance and t-shirts are sold each week to generate baseline funding for financial aid purposes. Staff retention is a key component of sustaining the ENOR program over time, and attention is paid to hiring individuals who are committed to administering a quality program and who are available to return to work future summers.

Replicability

With appropriate cooperation of local schools and various park personnel, this program could be replicated virtually anywhere. While it would be optimal to have expanses of natural areas available, many of the themes can be adapted for indoor use. The cooperative nature of team-building concepts and the implicit goals of heightening environmental awareness are components of ENOR that should be present in every child's educational experience. Programs could be developed with these goals in mind that do not necessarily require the campers to be in an outdoors setting.

Rationale and Importance of Program

Eagle's Nest/Owl's Roost embodies many of the holistic and comprehensive developmental ideals that 4-H programs represent. Campers are challenged to explore new locations and new relationships. They develop new skills and knowledge that will enable them to succeed in future explorations of the natural world and in a multitude of

settings throughout their lives. With the changing dynamics of an increasingly technological world in which our children grow, it is important that we educate our 4-H members in a comprehensive fashion and in a manner that exposes them to the decisions and dilemmas that many of them will face in the future. These children will be the stewards of our natural world, managers of the land that surrounds them and the leaders who will make informed decisions that affect all of us. Eagle's Nest/Owl's Roost is a great example of how 4-H has extended its reach and can continue to grow, assimilating the rich history of farming and ranching into the future of 4-H, which is as vibrant and mutable as the children who are involved in it. Eagle's Nest/Owl's Roost adheres to the 4-H philosophy of cultivating leaders and active citizens in our local community. By incorporating a "learn by doing", experiential curriculum, ENOR cultivates the life skills necessary "to make the best better" in Jefferson County, Colorado.

Owl's Roost Camp



Water day at Chatfield Dam & reservoir



Measuring lichen



Beavers Build a Better World

Eagle's Nest Camp



Reading a compass



Knot tying



Hiking up the snowfield