

Winter Discovery Program Overview
Tahoe Cross Country Ski Education Association and
The Sierra Watershed Education Partnership
February 27, 2008

The Tahoe Cross Country Ski Education Association (TCCSEA) and the Sierra Watershed Education Partnership (SWEP) are partnering to build a Winter Discovery Center at the Tahoe Nordic Center and to launch a pilot program for Winter Discovery Center classes during the Winter of 2008/09, TCCSEA and SWEP will pilot the program with 8 3rd-5th grade classes (or a total of 240 students) from Tahoe Lake School in Tahoe City and Kings Beach Elementary School in Kings Beach. We plan to expand this program in 2009/10 to include a total of 11 classes, or 360 students.



The Winter Discovery Center and an initial set of teaching supplies will cost a total of \$ \$37,085.00. We have secured \$5,000, which will be applied to the cost building the yurt, and anticipate generating an additional \$5000 annually from the Gourmet Ski Tour, which will cover all of the annual expenses of the running the program. TCCSEA and SWEP are working to secure an additional \$ 24,335.00 before June of 2008 to pay for one-time cost of building the physical structure for the Winter Discovery Center.

Need

The TCCSEA currently facilitates a free ski program classes at local schools (Tahoe Lake Elementary, Kings Beach Elementary and Forest Charter Schools). For 15 weeks during the winter, 3-4 classes of approximately 25 kids come to the Nordic Center each week to participate in the free cross country ski program. The classes usually ski about 1.5 hours, and then go back to school to learn academics.

Solution

The Winter Discovery Program (WDP) is a place-based series of three field trips that include three hours of place-based academic and physical activities (cross country skiing) that correlate with California State Science Standards and Benchmarks. The WDP will take place both inside the Winter Discovery Center, and outside in the Tahoe Cross Country Ski Area. WDP is offered free of cost, and includes pre and post field trip activities for participating teachers. Participating students will also receive a nature journal that includes pages with data sheets for weather observations, winter tree and animal identification pages, maps and other lessons on Lake Tahoe's natural history.

Goals and Objectives

The goals of the Winter Discovery Program are to introduce 3rd- 5th grade students from Tahoe Lake School & Kings Beach Elementary to healthy outdoor winter recreation activities and winter ecology.

This goal will be achieved through the following objectives. After participating in the three day WDP, participating students will be able to:

- Identify and tell the difference between a Jeffrey Pine, White Fir, Incense Cedar, and Sugar Pine



- Differentiate between deciduous and coniferous trees;
- understand how plants and animals interact with the changing environment
- Identify human and animal tracks in the snow
- use the five senses to better experience and observe ones surroundings
- Demonstrate an understanding of winter animal migration, adaptation, and resistance.

We will evaluate the effectiveness of the program objectives by analyzing pre and posttests for the participating students, and teacher evaluations.



Curricular Themes:

General Ecology – What is an ecosystem? A place where living and non-living things *interact*. The living (biotic) things: producers, consumers, and decomposers. The non-living (abiotic) factors: land, air, water, sunlight - LAWS. The Four Ways Species Survive – Food, Water, Shelter, Space.

Winter Ecology – What causes winter? The tilt of the Earth's axis causes the Sun's rays to distribute over the Earth at a different angle than in the summer. How snow affects the plant growth, how snow affects the availability of food and travel for wildlife. Snow science – How snow forms, thermal properties of snow.

Winter Plant and Animal Adaptations – Migrate, Adapt, or Resist. Plants that photosynthesize through their bark (aspens), plants using antifreeze, migratory birds, hibernating mammals, torpor, crypsis, and camouflage.

Animal Tracking – Tracks tell the story of what animals are active in the winter, by reading tracks we will: observe the movement style (pacer, leaper, bounder), measure the imprint of the track, and identify the culprit.

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The **Tahoe Cross Country Ski Education Association** is a non-profit whose mission is to develop the sport of cross country skiing through youth and adult ski education programs.

The mission of **Sierra Watershed Education Partnerships** is to promote environmental stewardship by connecting students to their community and local environment through comprehensive watershed education and service-learning. SWEPP fulfills its mission through the place-based service-learning (PBSL) model. Place-based service learning begins by using place as the context for teaching and learning; academic disciplines are interwoven into hands-on field studies and service learning projects.