

# Outdoor Education for California's



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UC Cooperative Extension has been working for four years with regional offices of the Bureau of Migrant Education and the California Mini-Corps to develop outdoor education programs for the children of migrant farm workers. Inquiry techniques and learn-by-doing activities were used to teach oral language with science as the vehicle.

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Until recently, UC Cooperative Extension has addressed itself to all phases of agricultural production and processing but has virtually ignored the social problems of farm labor. For the past five years, however, with funding from the Expanded Nutrition Education Program (ENEP) and Community Resources Development (CRD), increasing emphasis has been given to this area. One of the first pilot programs implemented was to provide outdoor education for migrant children enrolled in summer schools in Region I, Office of Migrant Education. The program was initiated in the summer of 1972. This article will discuss how the teaching techniques and curriculum have evolved over the past four years.

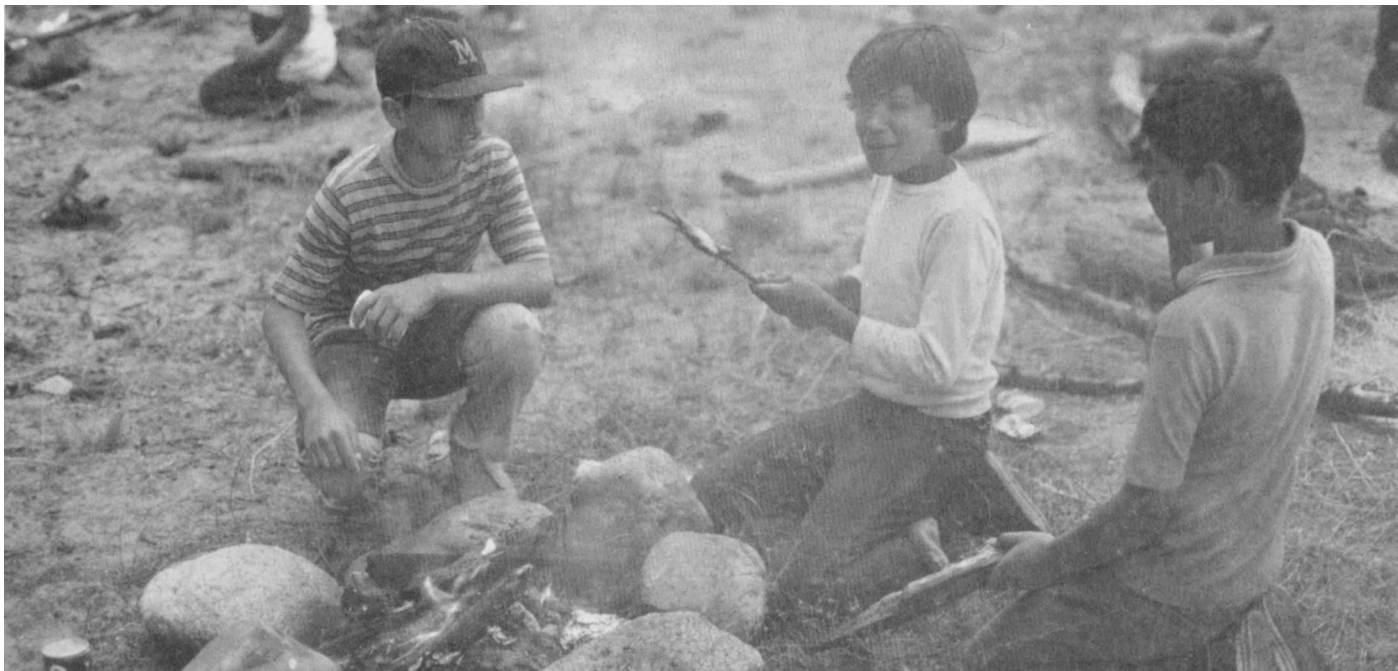
When the program began in 1972, our objective was to provide a one-week outdoor science experience for 200 students over a three-week period. In 1975, we served 1200 students at 4 different outdoor school sites for a 12-week cumulative period. Our objective was also more refined. We still wanted to provide an outdoor science experience but added three specific goals: 1) to develop oral language abilities; 2) to train students to be careful observers by developing all five senses; and 3) to help students develop a logical thought process when answering questions based on what they had observed.

The 1972 program was conducted at the Kern County Environmental Education Program (KEEP) facilities at Los Osos State Park in San

Luis Obispo County. KEEP provided naturalists and the California Mini-Corps provided college students who served as cabin counselors and interpreters. The KEEP program was based around a series of trail walks and field trips to study the land, the plant and animal life (both ocean and terrestrial), the history of man in the area, and the effects of modern man on his surroundings. Because the science concepts taught were very elementary and much was lost in the translation, it was decided to provide in-service training for the Mini-Corps persons so they could be the naturalists in 1973.

The average Mini-Corps person is an undergraduate liberal arts major who has little or no training in the biological sciences. In 1973, 15 Mini-

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Corps persons were put through a 7-day on-site in-service training program. Resource people were brought in to teach them about the flora and fauna of the outdoor school site and the surrounding area. They learned the names of the plants, animals, and birds of the area and why each was found there. They in turn taught this to the students during trail walks, an overnight hike, and field trips to the beach and tide pools, a fresh water marsh and estuary, and a lumber mill. The insertion of the Mini-Corps persons as naturalists rather than translators was a big step forward for the program.

In 1974, two major modifications were made. To make the Mini-Corps persons feel more comfortable in their role as naturalists, we incor-

porated a Sierra backpack trip as part of the in-service training. Basic outdoor skills, leadership development, and teaching techniques were emphasized. The trip greatly improved the Mini-Corps persons' self-confidence in their abilities as outdoor teachers.

Our second significant change was in program emphasis. Instead of trying to identify and name every organism in the area, associations within communities were studied. Concepts were dealt with: Why are broad-leaved plants found in shade and narrow-leaved plants in direct sun? How is a mussel or a barnacle adapted to tidepool life?

If a name were required for a plant or animal and none of the students knew it, they were encouraged

to come up with their own. As an example, a grass with sharp awns might be named sticker grass. Blind walks were introduced as a means of stimulating the senses. Some inquiry was used but basically the trail walks were guided tours with the naturalist doing most of the talking.

Whereas the program was well-received by parents and school district personnel, it still did not measure up to expectations. Areas in need of improvement were: 1) not enough oral language was being elicited from the students. With the "guided tour" trail walks, the students were not given enough opportunities to express themselves; 2) learning the names of trees and shrubs in an area they might never return to was irrelevant; and 3) there was not e-



nough action required on the part of the students—they needed to be more involved in developing answers. Inquisitive students learned but many others seemed bored. The curriculum was not suitable for the Mini-Corps naturalists either. Two weeks of in-service training was not sufficient to make a qualified naturalist out of a person with little or no biology background.

During the winter of 1974-75, these problems were analyzed and a whole new approach was decided upon. The entire curriculum would be activity-oriented. The activities would last from 30 minutes to 1½ hours or longer depending on student interest. Closure would be achieved at the end of each activity. The Mini-Corps persons would serve as facilitators and resource people. By the use of observation, simple experiments, reference books, and a logical thought process, the students would find answers by themselves. When the students asked questions, the Mini-Corps people answered with questions.

To insure that the technique worked, the in-service training for the Mini-Corps persons was modified. They were again taken on a training trip to the Sierras. This time, they were taught techniques for oral language development, put through various leadership situations, and taught how to conduct a series

of activities that could be used with children. No plant or animal life was identified for them. If they wanted to know the name of a tree, they were handed a tree-finder guide and we discovered together. They only spent one to two days at the outdoor school site prior to the arrival of the children. This was done purposely so they could not start acquiring facts about the area and give "guided tours" when the students arrived. Two additional advantages to teaching the instructors activities instead of facts are that the instructors from four different outdoor school sites could be trained at one central location and that because most of the activities could be done anywhere, the training could also be done anywhere.

The program proved very successful. The children enjoyed the activities. They eagerly identified insects and plants with the simple reference books provided. They made grappling hooks, bottom scrapers, and sweep nets to sample pond life. They raced corks down a river to measure stream velocity. Blindfolded, they hugged, smelled, tasted, and climbed trees. They gathered gooseberries and made pies. They followed trails marked only by scents. While the Mini-Corps persons were guiding the activities, they were asking questions to elicit oral language from the students. If something unexpected developed that

caught the students' attention, they were allowed to deviate from the planned activity. The Mini-Corps persons and students explored and discovered their environment side by side.

All students who participated in the outdoor education program in Region II, Office of Migrant Education, were tested before and after going to the outdoor school to assess their knowledge of certain concepts in nature (see table). Sample questions were: What is an organism? and What is a habitat? The test was given orally and conducted in the students' dominant language. The student could respond orally or draw a picture to express his idea. Ten questions were asked.

As is characteristic of a migrant population, of the students pre-tested, all did not attend the outdoor school because some families moved away. For the same reason all students pre-tested were not post-tested. The figures in the table indicate a degree of success for students' understanding of basic science concepts. However, the amount of follow-up work done by classroom teachers back at the school and the length of time that elapsed between when students went to the outdoor school and when they were post-tested could have influenced the results. There was no attempt to make a scientific sampling for statistical analysis this year. A more refined testing procedure is planned for 1976.

RESULTS OF PRE & POST TESTS OF NATURE CONCEPTS. AVERAGE OF ALL STUDENTS TESTED AT EACH SCHOOL.

School	No. of students	Pre-test Avg.	Post Test Avg.
1	13	5.1	7.6
2	31	4.5	6.5
3	22	3.9	4.8
4	11	4.3	8.1
5	21	4.8	7.5
All schools	98	4.5	6.9

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