

ARCHEOLOGY ALIVE WITH ECOLOGY

When David Clark talks about environmental science and archeology, his enthusiasm makes clear why his program has grown successfully each year. Developed a decade ago, the Environmental Science and Archeology resource program today is an integral part of the science curriculum in four public schools in the District of Columbia.* Since Clark is a unique kind of teacher, often hired by P.T.A.s and other special groups, his program can easily expand into other counties. As a professionally trained archeologist (with a Ph.D. from the University of Pittsburgh, and presently a Research Associate and Instructor at Catholic University), Clark is a community resource teachers need to know about.

Clark's program grew out of a carefully thought through philosophy about the ways archeology relates to environmental science and the ways it can best be presented to young students. As Clark explained, "The most important goal of my approach is to study science within the context of the environment. The basic principle is that all things around us, either natural or artificially produced, are parts of the environment and scientific study in general attempts to uncover information about the environment. In this way the study of science and the environment are more meaningful to the student because one is shown to be closely related to the other."

During the year Clark teaches his program to kindergarten through the eighth grade in several schools. Each class meets for two hours, two days a week, usually one hour in the classroom and one hour outside. Since the program

runs approximately six weeks, Clark can teach all grade levels during the year.

How does archeology fit into the scheme? As Clark explained, "Archeology is the study of people, past or present, based on the analysis of 1) things they have left in the ground, and 2) the parts of the environment altered by their presence. Humans are biological animals with a high degree of cultural complexity. Ecologically, humans are one part of the complex environment and interact with living (biotic) and non-living (abiotic) parts of it. Basically, humans affect the environment they live in and the environment affects them. The physical structure, the behavior, and the culture of people can be directly or indirectly linked to the environment. Culture is one way of adjusting or adapting successfully to the environment and human groups have been very successful at adapting to an incredible variety of environments throughout the world. Humans have gone beyond simple utilization of the natural environment by producing resources and materials artificially. In many cases, these artificially produced materials are supplements for resources of limited quantity in the natural environment."

We asked Clark how he translates these rather abstract concepts into actual classroom teaching and how he incorporates archeology in the process. Clark structures his course by having students first study the non-living (water, rocks, sediments), then the living (plants, animals, and humans) environment. Archeology is approached as one link between the living and nonliving. For example, when the non-living environment is introduced, students study the geologic formation of rocks. The form, origin, composition, and characteristics of rocks are examined. Students study the ways rocks are used today in their school

* Many thanks to the P.T.A., teachers, and the Principal (Miss Betty Brooks) of the Key Elementary School for the opportunity to pilot teach the full program in elementary school classrooms in 1979 - David Clark

neighborhood and at home. Finally they study the ways rocks were used in the past, during the historic and prehistoric times. Students learn how stone was used architecturally, and in the stone milling industry. To study prehistoric times, Clark has developed a stone technology unit. Students, wearing safety glasses, experiment and test various rocks to understand their differences for stone implement manufacturing. In the classroom Clark actually manufactures stone tools, while students record the manufacturing process step-by-step. When possible, teacher and students try out the implements to verify their utility.

Archeology is further considered when plant and animal topics are covered. Clark explained that "prehistorically plant and animal exploitation was very important. People had to know basic information about plant and animal structures and communities in order to know about the availability of these resources within a particular environment." During class periods, students conduct biogeographical surveys where they record habitat characteristics of various plants and animals they observe. In class students examine plants and animal skeletal material which Clark provides to study the Native American use of the natural environment.

Because of Clark's extensive archeological experience (his specialty is faunal analysis), and his access to actual collections, he can bring to class plant and animal bone refuse from archeological sites. Students work to interpret the environment from the types of plant and animal remains identified from the refuse. Throughout, the emphasis is on human adaptation to the environment.

Clark stressed that his Environmental Science and Archeology Program emphasizes that "people must maintain some form of balance with the environment and learn to live in harmony with the natural world. In the elementary and middle schools, archeology and science should

work together to create an awareness of this balance. In addition, young students can gain some appreciation of Native Americans who believed in the essential harmony in the natural world. In this way, we may be able to create a future generation sensitive to the ecological needs of tomorrow."

