Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Introduction

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This seminar aims to interweave three components into the K-12 science curriculum units. The three components are:

1) The geology and environment of Connecticut and the New Haven area, in particular.
2) The Peabody Museum and its collections.
3) The use of the computer, especially the Internet, in the science classroom.

The first two components are linked in a natural and obvious way. Discussion of the forces and processes in the earth that shaped Connecticut can be easily incorporated into the science curriculum, be that kindergarten or high school. Students are fascinated by a discussion of volcanoes erupting in the New Haven area producing the familiar East and West Rock ridges, or of glaciers hundreds to thousands of feet high scouring the rocks in our area and depositing parts of Canada on our beaches for us to see today, or of proto-Africa colliding with North America and leaving a chunk of “Africa” behind at Lighthouse Point in New Haven. This fascination can be channeled into a constructive discussion of many physical and chemical processes (e.g. erosion, motion, melting, crystal growing) as well as into a discussion of the rocks, minerals and the biological fauna that result from these processes. Local field trips can enhance these classroom activities and also sharpen the scientific observation skills of the young students. Both the field trips and the classroom activities associated with the environment of Connecticut provide ample opportunities for the type of hands-on teaching of science that enables the student to educate himself or herself.

The Peabody Museum is a unique and rich resource available to all the students in the New Haven area. The murals, dioramas, and all the fossil, plant, animal and rock collections provide a huge resource to complement any study of Connecticut and its environment. The mineral collections in the Peabody Museum are an excellent asset to the study of the geology of Connecticut. Not only are these collections available in the museum along with the very helpful staff from the public education office, but in many cases there are certain collections that can be borrowed to take into the classroom itself. The dioramas and other exhibits can be very effectively used to challenge the students to observe and discuss various environmental issues.

The use of the Internet is rapidly emerging as one of the main cornerstones of the new way of life into the

21st century. Navigating the world wide web of information can, if properly planned, fuel many new investigations by the young students. In fact, the web is paricularly well poised to enable the student to come with a new idea and follow up on it. Discussions among students in different schools as well as among the teachers can be immensely improved with the aid of the Internet. Part of the seminar, therefore, was spent introducing the tools and applications of the Internet. Needless to say, only a brief introduction into this huge world was possible. Nonetheless, as part of the introduction, the seminar set up its own world wide web page (addresss: http:

sandbox.geology.yale.edu/ lasaga) which illustrates how the Internet can be used within the context of the seminar topic. Thus, the seminar page presents satellite data on the topography of Connecticut, discusses sea level changes and their effect on the Connecticut coastline, enables recent (i.e. within a year) earthquake data from New England to be downloaded and shows interesting population data from USA and Connecticut as a function of age.

The various curriculum units presented here, therefore, incorporate the three components of the seminar to widely varying degrees. However, all the units emphasize both the “field” aspect of teaching science (whether that be a museum trip or a Connecticut trip) as well as the hands-on approach to science in the classroom. The use of the Internet is also prominently discussed in most of the units. Of course, it is hoped that these field trips and Internet voyages become just the beginning of a much wider and deeper foray into new modes of teaching science.

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