

New Hampshire Project Learning Tree (NHPLT)

Building Science Literacy in Grades K-8 Using a Vertically-Integrated Scope and Sequence

The goal of this project is to build the capacity of participating schools to transform their teaching practices such that they achieve genuine science literacy for all students through environmental topics and field investigations.

We have identified two objectives for meeting this goal. First is to train, advise, and support participating teacher-leaders at the district level to advocate for science literacy as envisioned in the NH Frameworks for Science Literacy through environmental topics and field investigations. Our second objective is to advise and support teacher-leaders to reorient science teaching at their schools into a vertically integrated scope and sequence for science literacy.

An essential component of the first objective included training in the Concerns-Based Adoption Model (CBAM) which is an effective strategy for supporting learners as they make changes in their lives, and certainly for teachers as they seek (or are expected) to change their classroom practice. This training was facilitated by CBAM creator, Dr. Shirley Hord, and took place at the end of March. This provided the tools necessary for our partners to track progress of our own project implementation and for our participants to track changes in their school practice.

A second component of this objective includes training in the Scope and Sequence for Science Literacy, which will provide an effective reorientation of science teaching in the three common themes of 1) water and watersheds, 2) ecosystems and habitats, and 3) weather and climate. It would identify the most effective activities and data collection protocols from the participating programs, which would allow for the vertical integration of the science frameworks within a school and district. This training happened in a couple ways including a day-long participant meetings to begin to identify current science practice in their school/district and then was followed up by a week-long, residential training to help participants experience what vertical science literacy is like using the ecosystems/habitats theme of the scope and sequence.

Essential components of the second objective includes, developing a plan for implementing changes in teacher practice, assessing and monitoring changes in teacher practice using CBAM and formative assessment tools, facilitating planning meetings to integrate the scope and sequence into the curriculum, electronic book discussions, training in the participating programs for up to 25 teachers per school site, and training in how to design, review and evaluate student fieldwork as part of formative and summative assessment.

To initiate this objective we created a moodle site and hosted a 3-week electronic book discussion around two articles. The articles included one published by NSTA on Inquiry in Middle School, and the other was a paper out of Washington about the use of field investigations in the classroom.

The week-long, residential training also included evening mentor sessions in which the CBAM tools were re-visited and practiced in order to prepare participants for returning to their school in the fall. Participants left the training with a big start on their implementation plans as well as CBAM tools identified to monitor and assess their fellow teachers through this implementation process.

Currently participants are finalizing their implementation plans and the partners will be supporting them in this by attending various meetings this fall. Once these initial meetings are complete, a schedule for further grade level trainings in up to three partner programs will be determined.