

Teachers get their “Hands-On” Materials

ARDEC, NASA, and CRREL give more students the chance to work with real materials in the classroom

Over the last year several pilot projects sponsored by SpringBoard successfully brought engaging, effective classroom practices into the schools, offering teachers training and tools needed to build Science, Technology, Engineering and Math (STEM) capacity. The goal is to move students into “doing science,” piquing their interest while building fundamental skills. In 2007 and 2008, SpringBoard piloted three professional development programs to improve STEM education in Alaska: Materials World Modules (MWM), History of Winter, and GIS arc mapping and GPS training. Each program included training for teachers in content, materials needed to implement each curriculum, and follow-up support when necessary.



SUCCESS
Stories

With support from the US Army Armament Research, Development and Engineering Center (ARDEC) and MWM brought pre-engineering skill sets to 30 middle and high schools from the remote village of Crooked Creek (K-12 school population 35) to the largest school district in the state, Anchorage (49,000 students). ARDEC formed educational partnerships with multiple school districts in Alaska for continued support.

“One thing about sports materials is that they are everywhere. Even if village students have not played golf, they can still relate to the significance of choosing the right material for the game being played,” commented University of Alaska Professor of Education, Susan Barstow. Forty pre-service teachers graduating from UA will soon bring MWM and inquiry based practice into classrooms across the state.

Evidence to the value of MWM, 73 percent of Alaska teachers surveyed rated “student engagement” in MWM as a five on a scale of 1-5.

History of Winter, a cryosphere science program led by NASA and Cold Regions Research and Engineering Lab (CRREL) scientists, offers meaningful strands for classroom application. Thermocrons, an affordable data collection tool, allows individual and small groups of students to collect and analyze large sets of temperature data. Curriculum links to climate change and Arctic science makes several of the instructional strands relevant to students—in Alaska and beyond.

GIS arc mapping and GPS technologies in science classrooms and field research are engaging Juneau students. During the last school year, 473 middle school students worked with GIS/GPS technology, building on National Science Foundation funded teacher training. With support from SpringBoard, students embarked on research projects including mapping of Paralytic Shellfish Poisoning (PSP) hot spots along Juneau’s coastline, geo-caching, and mapping of earthquake/plate boundaries.

