



Improving Middle Grades Science Teaching and Learning Through the Effective Use of Formative Assessments

Opening Sessions: August 17-21, 2009

Holten-Richmond Middle School – Danvers, MA

Audience

Middle School Science Teachers, Special Education Teachers who teach science, and ELL Teachers who support science instruction.

Participants will receive:

- *A Data Coach's Guide to Improving Learning for All Students* by Nancy Love, et. al
- *Science Curriculum Topic Study* by Page Keeley
- *Uncovering Student Ideas in Science* by Keeley, Eberle, and Farrin
- Science Assessment Supplies
- A portfolio of science assessment probes aligned to Massachusetts Science Frameworks.

Prerequisites

Middle grades science content knowledge and some teaching experience.

Course Description

This middle grades science institute will focus on (1) the development of foundational knowledge related to the effective use of formative assessments in the middle grades and special education science classrooms, (2) provision of adult learning experiences with formative assessments in parallel with science content development, and (3) the appropriate instruction to enable teachers to design their own formative assessments in response to individual curriculum needs.

Teachers will be introduced to standard formative assessments as found in enhanced selected response and open response items in physical science, earth science, and life science. Content topics presented will address the most commonly misunderstood science concepts as identified in the science education research. Science content misconceptions to be addressed include: Force and Motion, Properties of Matter, Physical and Chemical Changes, Conservation of Matter, Flow of Energy through an Ecosystem, Energy Transformations, and Astronomical Phenomena including Interactions of the Earth-Moon System. The content delivered will be refined based upon the results of the pre-assessments.

Science content knowledge will be further enhanced through hands-on experiences utilizing easily obtainable materials and equipment. The hands-on experiences will be aligned to the content needs identified through the formative assessment work and will allow each teacher to confront their own science content misconceptions. All institute components will model effective instructional strategies.

This course will be held in an air-conditioned facility.

Complete Session Dates

August 17 – 21, 2009 (8:30 – 3:00), and 1 day in Fall 2009 TBD

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Course Information:

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