An intensive workshop for high school and middle school science teachers who want to create robust, student-centered, active-inquiry classrooms.

WHEN:
Monday ~ Friday
June 21st through July 2nd
8:00 am until 3:30 p.m.
(ends at noon on Fridays)
One week continuation
August 23rd to 27th

WHERE:
Joel E. Ferris High School
3020 E. 37th Ave Spokane, WA 99223

The workshop leaders are:
- **Patrick Daisley**, NBCT
  physics teacher modeling since 1998.
- **Mary Lee McJimsey**
  physics teacher, Knowles Fellow, 4 years modeling

Participants achieve these goals:
- Improved instructional pedagogy by incorporating the modeling cycle and inquiry methods.
- Improved use of cooperative learning in their classrooms.
- Learn effective uses and increase proficiency of classroom technology.
- Improve their understanding of basic Newtonian physics.
- Become part of a professional learning community of modelers from around the region and nation.

The cost for this workshop is $50.00.
Clock hours are available from ESD 101 for $2.00 each.
University credits will be available from Eastern Washington University (tuition fees apply).
All participants will receive a printed binder and a CD containing workshop and curricular materials they can use in their classrooms.

What is modeling instruction?
Initiated and developed by practicing secondary science teachers in the mid-1990s, modeling instruction is an inquiry-based, hands-on teaching method in which students:
- design experiments, collect data, and develop concepts and models
- deploy these concepts and models to solve problems
- discard common naive concepts
- demonstrate superior performance on standardized tests

Modeling instruction is widely recognized as a superior approach to science teaching. In 2000, the U. S. Department of Education recognized Modeling Instruction as one of only seven exemplary or promising programs nationwide out of 134 reviewed, and in 2001 it designated Modeling Instruction as one of only two exemplary programs out of 27 reviewed.

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To exemplify effective instruction, this workshop is taught using a robust pedagogy, Modeling Instruction, developed at Arizona State University.

Content of first semester physics is reorganized around basic models to increase its structural coherence. Participants are supplied with a complete set of course materials (resources) and work through the activities alternately in the roles of student and teacher.

The Modeling Method is introduced as a systematic approach to the design of curriculum and instruction. The name Modeling Instruction expresses an emphasis on making and using conceptual models of physical phenomena as central to learning and doing science. Using models and modeling in science education is recommended by NSES, AAAS Project 2061 and the Washington State K-12 Science Standards.

Student activities are organized into modeling cycles that engage students systematically in all aspects of modeling. (Specifics of the modeling cycle are at http://modeling.asu.edu.) The teacher guides students through each modeling cycle, with an eye to improving the quality of student discourse by insisting on accurate use of scientific terms, on clarity and cogency of expressed ideas and arguments. After a few cycles, students gain skill at conducting scientific investigations without excessive prompting from the teacher. The main job of the teacher is then to supply them with more powerful modeling tools. Lecturing is restricted to scaffolding new concepts and principles on a need basis.

A variety of classroom technology will be employed during the workshop. Probeware either interfaced with computers or handheld devices (Vernier LabQuests) for data gathering and graphing software will be embedded into the investigations and participants will gain proficiency in their use. “Lower Tech” versions of the investigations and analysis will also be available for teachers who do not have the technology resources available in their classrooms.

More information can be found at www.daisleyphysics.com/modeling or contact Patrick Daisley - 509-990-5137 PatrickD@spokaneschools.org