Project Goals

Our goals include: (1) conveying to participating teachers the "excitement of discovery" through well-planned, hands-on laboratory modules designed to stimulate the inquisitiveness and imagination of their students; (2) helping make science relevant for students by using course modules that apply science to everyday life and to current societal issues, yet are keyed to basic concepts included in the VA SOLs; and (3) spanning a range of grade levels and course subjects, giving students the benefit of on-going exposure to inquiry-based, hands-on science. We believe achievement of these goals will significantly improve science and math SOL test scores.

Grades 3-8 Teacher Development Workshops Academic Year Program

For ten consecutive years, Sweet Briar College has been sponsored by the State Council of Higher Education for Virginia as a provider of professional development opportunities in math and science for Central Virginia teachers. The academic year program is designed to introduce teachers to new hands-on ways of doing science and math in the elementary classroom.

This Year's program

Participants will conduct hands-on experiments that cover key scientific concepts and a broad range of SOLs in grades 3-8. All activities are based around "real-world" applications of science and math and are delivered through an inquiry-based pedagogy. Participants will learn to interpret and present their data.

One content session will be held each day. Participants will conduct experiments, do activities to learn more about the science or math content area, and analyze data. Workshops will typically begin at 9:00 and end around 3:00 each day with a lunch break around noon.

Registration / Information

Register me for the following Spring Academic Year Workshops:

- ☐ Experiencing Probability — February 7
- ☐ Data — February 21
- ☐ What is Inquiry? — March 14
- ☐ Rocks in Context — March 28
- ☐ Water Analysis — April 4
- ☐ Living in the Sea — April 11
- ☐ Robotics — April 18

Name:_____

School:_____

Grade(s) you are teaching in 08-09:_____

- ☐ I teach all subjects
- ☐ I specialize in teaching math
- ☐ I specialize in teaching science

School Address:_____

_____

School Phone: _____

Home Address: _____

_____

Home Phone: _____

E-mail:_____

Do you check your e-mail daily, weekly, or rarely? (Circle one)

Mail the completed registration form to:

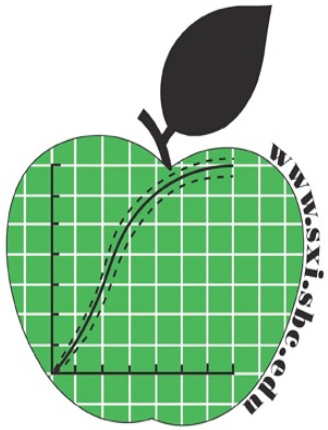
Jessica Griffith, SCHEV-NCLB Project Assistant
PO Box AD, Sweet Briar College
Sweet Briar, VA 24595

OR

Email your registration information to:

Jessica Griffith
jgriffith@sbc.edu
Put "SCHEV REGISTRATION" in the subject line
Please note:
E-mail registrations must be complete!
A confirmation e-mail will be returned to you

Questions?
www.sxi.sbc.edu



Inquiry Approaches to Math and Science

A Professional Development Program for Central Virginia Teachers of Grades 3-8

Academic Year Program

Spring 2009

www.sxi.sbc.edu

Sponsored by The State Council of Higher Education for Virginia (SCHEV) through the Federal No Child Left Behind, title IIA, Improving Teacher Quality Initiative

State Council of Higher Education for Virginia

Priority Registration

Teachers enrolled in EDU 656 or EDUC 657 will get **priority registration** for ALL of the academic year program workshops.

If you have participated in any of our previous academic year or summer programs, you may still be interested in participating in this year's academic year program. Contact the project director, Jill Granger, to determine the extent of overlap from any previously attended program. All of our previous participants are warmly welcomed back!

What's Provided

All necessary supplies and materials for the program will be provided. Lunch will be provided at the College for workshop attendees. **There is no cost to Virginia certified 3-8 grade teachers to attend; plus, there is a $60 / day stipend.** All is paid for by the SCHEV-SBC grant. Certificates of participation will be provided upon request and may be used toward recertification as arranged between you and your school system.

The program will be filled on a first come first served basis, with the approval of the teacher's school administration. Applications will be accepted from teachers currently serving Central Virginia public school divisions and private schools. Enrollments are limited.

Questions about the program may be addressed to: Jill Granger, Co-Project Director at 434-381-6166, granger@sbc.edu; Hank Yochum, Co-Project Director at 434 381-6357, hyochum@sbc.edu; Arlene Vinion-Dubiel, Instructional Support Specialist at 434 381-6118, dubiel@sbc.edu; Pam Simpson, Project Associate at 434 381-6443, psimpson@sbc.edu; or Jessica Griffith, Project Assistant at 434 941-5531, jgriffith@sbc.edu

Spring Workshop Descriptions: Inquiry Approaches to Math and Science Grades 3-8 Sweet Briar College

February 7, 2009
"Experiencing Probability"
Instructor: Steve Wassell
This workshop will introduce teachers to fun and accessible activities for exploring probability with grades 3-8. We will discuss basic principles for finding theoretical probabilities, and we will compare experimental probabilities from in-class activities. As we will see, experimental results will exhibit variation but validate theoretical probabilities in the long run. Essentially all of the Probability (though not the Statistics) Standards of Learning for Grades 3 through 8 will be involved.
SOL Mathematics: 3.23, 4.19, 5.17, 6.20, 7.14, 7.15, 8.11

February 21, 2009
"Don't be Dazzled by Data!"
Instructors: Beth Williams and Gigi Sweeney
Graphs and statistics bombard us and our students as advertising, opinion polls, reliability estimates, population trends, health risks, and student' progress in schools. How can we make sense of what we read? Come learn how data can be categorized and displayed in various graphical forms. Try out new ways to teach statistical concepts of mean, median, and mode, and investigate ideas of representation in stem and leaf plots, box and whisker plots, and scatter plots.
SOL Mathematics: 3.21, 3.22, 4.20, 5.18, 5.19, 6.18, 6.19, 7.16, 7.17, 7.18, 8.12

March 14, 2009
"What is Inquiry?"
Instructor: Jill Granger
Learning by doing, hand-on/minds-on, constructivist, active learning... these are all ways in which teachers describe inquiry approaches to math and science in their classrooms. What are the essential elements of an inquiry lesson? How can you add elements of inquiry to a traditional lesson? How do inquiry approaches support the content objectives? In this workshop, we will inquire into Inquiry—looking at the features of this type of lesson and comparing the approach of inquiry to other teaching/learning strategies. **Please note that this workshop is designed as an introduction for teachers with no prior experience with inquiry.**

March 28, 2009
"Rocks in Context"
Instructor: Rebecca Ambers
Looking for more active ways to teach about rocks, minerals, and plate tectonics? In this workshop, we'll practice rock and mineral identification with lab specimens and other samples that you bring in. We will also investigate the theory of plate tectonics using maps and Google Earth and will explore its relationship to the distribution of rock types around the world.
SOL Science: 5.4, 5.6, 5.7, 6.4, ES.1, ES.2, ES.3, ES.5, ES.6, ES.8, ES.11

April 4, 2009
"Water Analysis: Matter, Measurement, and Graphing"
Instructor: Rob Granger
Limited to 6 participants, grades 6-8 teachers only.
This workshop will include investigations in water analysis that are engaging to students in a variety of contexts. Teachers will test and analyze water samples using a simple, hand-held probe, the PASCO Xplorer GLX. We will analyze the data we collect using grade-

appropriate techniques that address multiple math standards. In addition to basic concepts in science (pH, solubility, conductivity), topics explored can be used to study environmental issues such as biological oxygen demand, thermoclines, and stream flow. The probes will be available to teachers for use in the classroom supported by the Instructional Support Specialist.
SOL Science: 6.1, 6.5, 6.7, LS.1, LS.4, LS.7, LS.12
SOL Mathematics: 6.18, 7.5, 7.17, 7.18, 8.12

April 11, 2009
"Living in the Sea: Adaptations of Marine Animals"
Instructor: John Morrissey
How do marine mammals, turtles, and birds, which all require air to breathe, dive to great depths for two hours or more? How do animals survive the rapidly fluctuating conditions within a tidal pool? Why can't you focus your eyes underwater, while a sea lion can? Did you know that sharks have a true sixth sense? Join us to discover the anatomical, physiological, and behavioral adaptations that enable animals to survive in a marine environment. *SOL Science:* 3.1, 3.5, 3.6, 6.1, 6.5, LS.1, LS.4, LS.10, and LS.14.

April 18, 2009
"Robotics"
Instructor: Nick Swayne
Robots capture students' imaginations. In this workshop, learn how to use robotics to teach SOL content. We will learn the basics of programming and discover ways to integrate this technology into your science and math curriculum.
Science SOLs 3.1, 3.2, 4.1, 4.2, 5.1, 6.1, 6.2, PS.1, PS.10