

INTRODUCING PROJECT MICRO

A microscope is arguably the best "tool of science" to use to introduce scientific inquiry. It's certainly exciting for a child who has never used one before! Because of this, the Microscopy Society of America has developed **Project MICRO**, an outreach program for middle schools. It provides teachers with microscopy-based teaching materials, member-volunteers to help in the classroom, and online resources.

Since middle school students are studying general science, rather than various elective sciences, it's possible to reach them all. MICRO's goal is to use the microscope to introduce critical observation and inquiry.

Teachers receive materials that present science as classroom-tested units which work reliably, even with minimal science knowledge.

Following a real need for both high quality science curriculum material and teacher development at that level, MSA's **Microscopic Explorations** was written for grades 4-8. It was written in collaboration with the science education specialists at the Lawrence Hall of Science (LHS), as part of the LHS **GEMS (Great Explorations in Math & Science)** program. **Microscopic Explorations** is now in its fourth printing.

WHY DOES MICRO WORK WITH GEMS?

The LHS is an international leader in science education. In 2001, its GEMS program was named one of just nine "exemplary and promising" national programs by the U.S. Department of Education. LHS has set the standard for an activity-based, inquiry-driven approach to teaching science. LHS materials are used in a third of the nation's schools. Since MICRO's Microscopic Explorations is part of the GEMS series, it's accepted for use in almost any school district.

The GEMS national network is unique in U. S. science education; there are more than 2600 Associates who train other teachers in inquiry methods, and over 20,000 Leaders who know how to use GEMS in the classroom. More than 60 regional Sites and Centers provide direct support to teachers and other educators; a Site has two or more GEMS-trained Associates, and Centers have a larger staff and more extensive GEMS initial training. This network can help volunteers to learn how to be effective in a classroom, and find teachers who want help. It is estimated that more than 700,000 teachers and 12 million students have experienced GEMS activities. By working with GEMS, MSA Project MICRO is introducing microscopy to many more thousands of students than Project MICRO could reach independently.

FOR MORE INFORMATION

Local Outreach • Being a Volunteer

Project MICRO:
www.microscopy.org/ProjectMICRO

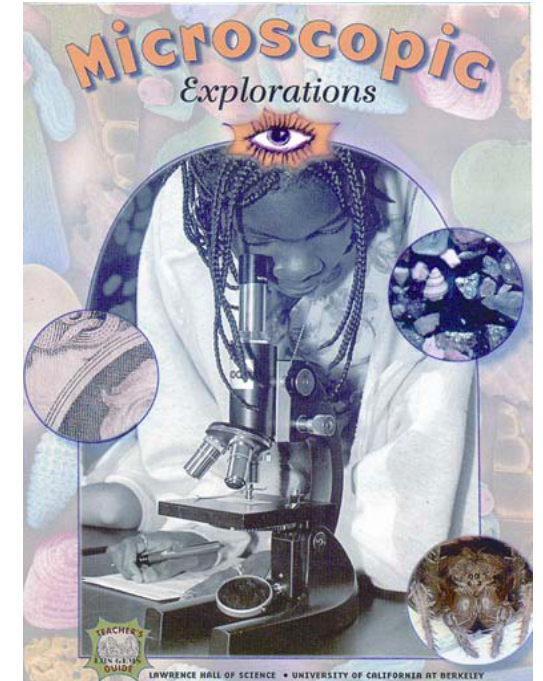
GEMS:
www.lhsgems.org

Advice for volunteers:
National Academy of Sciences:
www.nas.edu/rise/chap4.htm

North Carolina Museum of Life and Science:
www.noao.edu/education/ncmlssg.html



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Photos:
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Project MICRO
Microscopy In Curriculum -
Research Outreach



MICROSCOPIC EXPLORATIONS, The Manual

Microscopic Explorations is written in “festival” format for grades 4-8, with ten topics that can be presented simultaneously to circulating groups of students, or separately in a classroom.

Its uniqueness lies in the carefully written “inquiry science” presentation of those topics and the thorough prepublication classroom testing of content that a GEMS guide receives. It will work well in any classroom; teachers aren’t expected to have special skills.

GEMS manuals meet State’s standards: see www.lhsgems.org

ORDERING INFORMATION

Susan Brady and Carolyn Willard

1998, 1999, 2003, 2007.

Microscopic Explorations 165 pp, paperback, 8.5x11” ISBN 0-924886-00-5. \$21.00 plus shipping

Lawrence Hall of Science, University of California, Berkeley, CA 94720-5200; (510) 642-7771, www.lhsgems.org. gems@berkeley.edu.

Available from many school supply catalogs, and any bookseller.

Spanish language student worksheets are available online.

PRAISE FOR MICROSCOPIC EXPLORATIONS:

“Microscopic Explorations is an outstanding example of curricula being prepared for the schools through collaboration between scientists and professional science educators...It also represents an important device for catalysing the effective participation of scientists throughout our nation with the teachers in their local schools. Intended to interest and involve all students in their middle school years, it is designed to harness the talents of an important scientific society as a resource in educational reform.”

Bruce Alberts, Past President, National Academy of Sciences



“Microscopic Explorations is an explicit and extensive resource for science teachers that is easy to

use... The book is quality incarnate, there’s no question about that.”

Appraisal: Science Books for Young People

“As a community volunteer, I conduct science enrichment programs for elementary school children. I highly recommend Microscopic Explorations as a well-organized tool to introduce students to microenvironments in a fun learning atmosphere.”

Science Books and Films

LOCAL OUTREACH PROGRAMS

Several of MSA’s local affiliate societies and one university now have MICRO outreach programs; they are all a bit different. If you want advice on how to organize a workshop, contact the Burlington, Vermont program; Minnesota has an outstanding website, the New England local society circulates supplies kits to schools, and Cornell has used grad students as volunteers effectively. If you want to learn more about what they’re doing, please contact the program chairs. You’ll find current addresses and other information on the MICRO website.

HOW CAN I HELP MICRO?

Don’t be casual about volunteering; realize that you’re making a commitment that will take time and effort. Look at the RISE (Resources for Involving Scientists in Education) website of the National Academy of Sciences (URL below). Then take an in-depth look at the advice on the MICRO website.

BE A VOLUNTEER

- Join one of MSA / MICRO’s local programs, or help develop a new one.
- Work with an existing outreach program sponsored by your university or employer.
- Help a GEMS Associate present teacher workshops.
- Use **Microscopic Explorations** independently.

I don’t want to be a classroom volunteer:

- Assemble a kit of the supplies needed to present Microscopic Explorations. They’re low-cost common items, but teachers don’t have the time to do it. Give the kit to a school or a GEMS Site.
- Do you like to fix things? Offer to clean or repair microscopes at a school.
- Help a school get microscopes; ask your corporate employer’s “community” fund for ~\$1000 to buy a classroom set of microscopes for a school.
- Host a class field trip to your microscopy lab. If you choose this option, specific advice from the National Academy of Sciences will help ensure success: <http://www.nas.edu/rise/chap4.htm>

HOW CAN MICRO HELP TEACHERS?

- See the MICRO website for the following:
- A comprehensive reviewed bibliography of supplemental books, DVDs, CD-ROMs, and websites.
 - Microscopist volunteers to help present Microscopic Explorations.
 - Advice on selection of school microscopes .
 - Supplemental materials to expand topics introduced by **Microscopic Explorations**.

Ask-a-Microscopist for technical questions. www.microscopy.org