



# ISSUES and Earth Science

S E C O N D   E D I T I O N



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This book is part of SEPUP's middle school science course sequence:

**ISSUES AND EARTH SCIENCE, 2nd Edition**

Studying Soil Scientifically  
Rocks and Minerals  
Erosion and Deposition  
Plate Tectonics  
Weather and Atmosphere  
The Earth in Space  
Exploring Space

**ISSUES AND LIFE SCIENCE, 2nd Edition**

Experimental Design: Studying People Scientifically  
Body Works  
Cell Biology and Disease  
Genetics  
Ecology  
Evolution  
Bioengineering

**ISSUES AND PHYSICAL SCIENCE, 2nd Edition**

Studying Materials Scientifically  
The Chemistry of Materials  
Water  
Energy  
Force and Motion  
Waves

**Additional SEPUP instructional materials include:**

CHEM-2 (Chemicals, Health, Environment and Me): Grades 4–6

SEPUP Modules: Grades 7–12

*Science and Sustainability*: Course for Grades 9–12

*Science and Global Issues: Biology*: Course for High School Biology



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**SEPUP**

Lawrence Hall of Science  
University of California at Berkeley  
Berkeley CA 94720-5200

e-mail: [sepup@berkeley.edu](mailto:sepup@berkeley.edu)

Website: [www.sepuplhs.org](http://www.sepuplhs.org)



17 Colt Court  
Ronkonkoma NY 11779  
Website: [www.lab-aids.com](http://www.lab-aids.com)

## ***A Letter to Issues and Earth Science Students***

As you examine the activities in this book, you may wonder, “Why does this book look so different from other science books I’ve seen?” The reason is simple: it is a different kind of science program, and only some of what you will learn can be seen by leafing through this book!

*Issues and Earth Science* uses several kinds of activities to teach science. For example, you will observe and test the properties of soil, rocks, and minerals. You will examine a model of the way water moves earth materials to change the surface of the land. You will conduct a computer simulation to investigate the causes of earthquakes and volcanoes. You will also analyze data about Earth and the solar system. A combination of experiments, readings, models, debates, role plays, and projects will help you uncover the nature of science and the relevance of science to your interests.

You will find that important scientific ideas come up again and again in different activities throughout the book. You will be expected to do more than just memorize these concepts: you will be asked to explain and apply them. In particular, you will improve your decision-making skills by using evidence to weigh outcomes and to decide what you think should be done about the scientific issues facing our society.

How do we know that this is a good way for you to learn? In general, research on science education supports it. In particular, the activities in this book were tested by hundreds of students and their teachers, and then modified on the basis of their feedback. In a sense, this entire book is the result of an investigation: we had people test our ideas, we interpreted the results, and we then revised our ideas! We believe the result will show you that learning more about science is important, enjoyable, and relevant to your life.

*SEPUP Staff*

## Field Test Centers

The classroom is SEPUP's laboratory for development. We are extremely appreciative of the following center directors and teachers who taught the program during the 2003–04 and 2004–05 school years. These teachers and their students contributed significantly to improving the first edition of the course. Since then, *Issues and Earth Science* has been used in thousands of classrooms across the United States. This second edition is based on what we have learned from teachers and students in those classrooms. It also includes new data and information, so the issues included in the course remain fresh and up-to-date.

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Geeta Verma, *Center Director*

Felecia Bell, Wanda Ellis, Lillian Harris, Patricia Lewis, Millicent McCaskill, Demetra McCoy, Melanie Robinson, Nicole Satchell

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Delores Anderson, Dianne Johnson, Deborah Kimble, Steven Koch, Corean Lofton

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Andrew Coblentz, *Center Director*

Andrew Coblentz, Ken Klein, Catherine Macay, Benjamin Moser, Lucy Schoening

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Donna Markey, *Center Director*

Amy Alexander, Melissa Boeche, Nicole Buchanan, Dorothy Jones, Stacy Robe, Zamaria Rocio