

ABOUT THE PROGRAM

Biology: You and Your Environment is designed for use by general biology students. It was developed to provide a program that:

- a. is modern and timely, emphasizing the human and environmental implications of biology.
- b. includes activities as an integral and necessary component.
- c. allows for constant student involvement.
- d. is flexible to allow for individual differences among students, teachers, and schools.
- e. has a carefully controlled reading level.
- f. utilizes illustrations as an integral part of the text.
- g. is based upon behavioral objectives.
- h. is complete, including text, annotated teacher's edition, record manual, and a testing package.
- i. gives students guidance in choosing a career.
- j. is compatible with recent curricular improvements in elementary school and middle-school science.

Modern and Timely: Several clichés were common during the 1960's and early 1970's, when many of the major curriculum projects developed. "Uncover, don't cover science" and "Less may be more" were among those commonly used.

At one extreme were attempts to restructure scientific content into non-traditional formats. Some programs reduced the heavy applied science aspect of earlier curricula and concentrated entirely upon "basic science." Other projects emphasized scientific processes. These attempts were based in part upon the "knowledge explosion" in science. They took the view that factual knowledge is very transitory. The only proper use of student time was thought to be with the processes by which knowledge is acquired. Still other materials had basically affective objectives. These provided appealing ideas and students "did their own thing" with them. This text accepts the goals of the new curriculum projects as worthy and blends them eclectically with a belief that the content of a subject is also important.

Activity-Oriented: Today there seems to be general agreement that older, lecture-oriented courses did not produce the self-actuating citizens our modern life-style demands. Activity-oriented courses encourage critical thinking and analysis. In *Biology: You and Your Environment*, the activities are an integral part of the program.

Biological activities are admittedly difficult to build into a textbook that is to be used widely. Conditions in Los Angeles, Miami, Seattle, Omaha, Boston, and Oklahoma City are quite different. Seasonal changes complicate biology activities in many areas. Nevertheless, students learn little about life unless they study living organisms. Organisms mentioned

specifically in the text are found widely or can be ordered from biological supply houses. The use of local organisms reduces expenses and helps students better understand their local environment. Fortunately the most interesting and diverse type of organism known is found in all biology classrooms, i.e., you and your students. Many activities are based on a study of humans and their special characteristics.

Student Involvement: In addition to doing activities, the student is involved in other ways. This text requires that the student think about the material constantly. In expository sections, numbered questions are interspersed for the student to answer. These questions give students immediate feedback about their understanding of previous material. Students must often interpret information, express opinions, and graph or tabulate data. Other questions are intended to serve as "advance-organizer" questions and alert and motivate students to the significance of upcoming material.

Flexibility: Each student brings to the classroom a unique combination of aptitude, interest, and style of learning, and no single teaching strategy or sequence of topics can accommodate all of them. Teachers also differ in philosophies, backgrounds, and personalities. *Biology: You and Your Environment* recognizes these differences and is designed in a way that teachers and students can adapt the materials to fit their own style of teaching and learning. First, the program is modularized. Modules are independent, although they complement one another. They may be used in any order desired. Module One, "Troubles in the Biosphere," should generate a great deal of student interest in today's polluted world, but Module Two, with its study of life, could easily initiate the program. Module Three, which introduces and expands upon the biologically central concept of homeostasis, is another possible point of departure.

Modules are composed of minicourses. Within a module the minicourses are, in general, sequential. However, not all sections must be done by all students. Some minicourse sections comprise a "core" that most students should do while other sections may challenge the more interested students. Suggested core and alternative activities are so identified in the section of the teacher's guide that deals with specific teaching hints.

Resources provide further flexibility. Students come to high school with diverse interests, abilities, and knowledge. Some resources deal with specific skills. Examples include how to collect and classify organisms and how to use microscopes properly. Other resources suggest ideas and techniques appropriate for studying plant growth variables and studying animal metamorphosis. Some students may use resources, or sections thereof, individually. In other cases you may wish to use them as the basis for a whole-class activity or group activities.

Reading Level and Illustrations: The reading level has been controlled to an average seventh to eighth grade level to ensure that reading difficulties would not hinder concept development. In addition, the illustrations have been planned as an integral part of the text to reduce the amount of reading required. In many cases, questions can be answered entirely from a study of the illustrations. In many experiments, the entire procedure is clear from the illustrations. For clarity the illustrations have also been developed to emphasize only essential components.