

learning. Students can redefine their questions and test new predictions. In this way, students also model the behavior of scientists designing new experiments and investigating discrepancies between predicted and actual outcomes.

A simulation such as CATLAB provides students with an opportunity to learn about genetics by interacting with an interesting model that is a good approximation of reality. CATLAB enables students to be engaged more actively in applying their knowledge about genetics principles and in problem solving by: 1) generating their own questions; 2) deciding which parameters or variables to investigate or control; 3) gathering, recording, interpreting and analyzing data; and 4) drawing conclusions to support or reject hypotheses. Our evidence suggests that appropriate

teaching strategies incorporating microcomputers and good educational software (like CATLAB) can enable teachers to provide successful learning experiences for students.

References

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Book Reviews

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BIOLOGY LAB RESOURCE BOOK
by Judith M. Hancock. 1985. J. Weston Walch (P.O. Box 658, Portland, ME 04104-0658). 232 p. \$18.00 softback.

A variety of resource books and supplemental laboratory guides for junior high school life science and high school biology are currently available. Hancock's resource book offers teachers of these courses another option from which to select supplemental materials.

Hancock has selected 33 laboratory activities and a series of genetics problems for her resource book. These activities center on contemporary textual material and underlying principles of biology. Hancock provides suggestions for teachers to implement each activity. However, teachers will have to provide their students with sufficient background information if the students are expected to perform the activities, complete the data sheets and respond to the recall questions. That is, the student data sheets do not provide students with appropriate background information. But rather,

the data sheets contain directions, isolated illustrations and recall questions.

An introductory section provides an overview of microscopy. The remaining activities are categorized into specific parts, each of which has a unifying theme. These themes include cells, comparative anatomy, variability, development, behavior, genetics and ecology. Teachers should find the activities in each of these parts easy to implement if appropriate information has been previously taught. The materials they will need for the activities are usually stocked in most introductory laboratories. A number of data gathering worksheets are provided for the students to progress through the activities.

The author contends that extensive dissection cannot be justified educationally. She nevertheless includes four dissections for students to perform. Other traditional laboratory activities include diffusion and osmosis, chromatography, observation of cells, enzyme action, photosynthesis, respiration and mitosis. Attention is given to higher plants and specifically to angiosperms but lower plants have not been included. Additional activities include seed and flower dissection, germination and planaria regeneration. The section on behavior includes taxic behavior in the earthworm and snail as well as instinct behavior in insects. To complete the genetic problems that are included, the students will need a functional understanding of genetics concepts.

While Hancock's book does provide a quick reference to supplement many contemporary biology and life science textbooks, it does not provide a de-

tailed treatment of any particular topic. Therefore, the resource book should not be considered a replacement for existing materials since it does not provide sufficient background information for each of the laboratory activities that is included. If a teacher needs a series of generalized laboratory activities that can be used at incidental times throughout a school year, then this book could be beneficial. If, however, a teacher needs a detailed and intensive treatment of specific topics tailored to carefully designed lesson plans, a treatment that depends upon richly labeled illustrations and higher level questions, then the book will fall short. Hence, this resource book appears most appropriate for biology or life science instruction that addresses traditional topics on a generalized level. It is unlikely that a teacher who has taught for many years and who has accrued a file of activities tailored to that specific classroom will find this resource book helpful. However, a teacher who is beginning to build teaching files and who is seeking a variable collection of laboratory activities will find value in this resource book.

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