

Classroom Technology Reviews

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Energy and the Chemistry of Life. 1996. United Learning (6633 W. Howard St., Niles, IL 60714, (800)424-0362). Videotape. 28 min. Purchase \$135.

 This two-part program, intended by the producer for use in biology classes in grades 9-12 explains the basic physical and chemical processes that allow energy to be stored and used by organisms. Part one provides lessons in simple physics and chemistry. The physical concepts of matter and energy are explained, the structure of atoms is described, and students learn how subatomic particles join to form elements, how elements combine to form molecules and compounds, and finally, carbohydrates, lipids, proteins, and nucleic acids are presented.

Part two describes the formation and use of ATP as a source of energy used in life. Here the physical and chemical concepts presented in part one are used to analyze the metabolic processes of photosynthesis and aerobic respiration.

Discussion of these topics is very general and, frequently, overly simplistic. Descriptions of photosynthesis and respiration are incomplete and sometimes inaccurate. Although much of the photography is eye-catching and interesting, it often has no clear relationship to the topic of discussion. Monotone narration bores students.

The teacher's guide and materials include student objectives, follow-up activities, a useful script of recorded narration, and a series of blackline masters. The masters include four quizzes that are not particularly useful,

but the three pages of vocabulary, one overhead transparency of the relationship between photosynthesis and cellular respiration, and a short crossword puzzle could be helpful with the right audience. The right audience is probably middle school and lower-level grade 9-10 students. Here it is best used as a review tool and in bits and pieces rather than in one or two sessions.

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Viruses: The Deadly Enemy. 1997. Human Relations Media (175 Tompkins Ave., Pleasantville, NY 10570, (800)431-2050, www.hrmvideo.com). Videotape. 23:45 min. Purchase \$189.

 This video particularly interests me because it is a single concept program that can be integrated into a discussion of viruses. It is brief enough to be an introduction to the topic with enough time left in the class period to introduce additional material or to conduct a discussion. It is sufficiently thorough in its depiction of viruses so students at all levels can develop a concept of them and be able to contemplate the details of viral infections and the implications of viral transfer.

Examination of virus structure and comparison of virus characteristics with those of living organisms follow

the introduction, describing discovery of viruses through the diseases they cause. Excellent graphics in the abbreviated viral replication cycle are simple yet particularly lucid. The concluding segment is a survey of significant viral diseases of humans today, including herpes simplex, ebola, HIV, and polio. The program moved seamlessly to developments in immunization and treatments of viral diseases.

My first impression of this program was that it was produced for middle school life science or high school biology students, and, although that is what the producer intended, I consider the content and the presentation equally appropriate for most college level courses in biology or introductory microbiology.

The teacher's resource packet includes a program summary, a complete script of the narration, nine student activity sheets, a glossary, and a bibliography. These materials do seem to be designed for middle school or junior high school level students.

This is a particularly effective introduction to viruses. The combination of animation, electron photomicrography and photographs of individuals with viral disease make an interesting and informative examination of the existence and role of viruses.

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Rachel Hays is the editor of the Audio Visual Reviews section of *ABT*. She holds a Ph.D. in botany from the University of California, Davis, and has taught courses at the college level. With a B.S. from San Diego State University, Hays went on to the University of California, Davis, for her M.S. degree. For several years, Hays has done research for the Natural Resources Ecology Laboratory at Fort Collins, CO, studying nutrient cycling and soil organisms. She has published articles in several popular and scientific periodicals. Her address is: **7020 Pueblo Ave. B, Prescott Valley, AZ 86314.**

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Using Kinetic Imaging Software To Learn About Protein Molecules

 Sometimes technology can solve teacher's problems. Biology teachers know that teaching about protein molecules is a major challenge. In contrast to DNA molecules, which have a regular, repeating structure, proteins only have a few small, predictable structures, beyond which they

get very complex, specific, and hard to visualize. When teaching students about these structures in the past, we have been highly dependent on artist renderings in textbooks, pictures drawn on the chalkboard, and our own ability to come up with descriptive metaphors. The ability to see and