



The Cell Biology Resource

Science
EMC 1995

Life Science and Biology SOL

Six 13-23 minute programs for grades 8-12
One Year Tape and Keep Rights
No Duplication Rights

These programs provide quick access to observations and demonstrations in the form of short teaching modules. The modules are narrated; however, they can also be used in an interactive way by simply turning off the sound or pausing frequently. A powerful learning environment is created when students are encouraged to observe, ask questions, and volunteer ideas. The subjects of individual program segments are listed here. The teacher's guide provides a time log and description of each individual segment of each program so that chosen segments can be used for specific instructional objectives.

101. Introduction to Living Cells (23-min.)

Science: BIO.4, LS.2, LS.3

Featured Modules:

A Variety of Cells
Looking Into Cells
Microtubules
Motor Proteins
Plasma Membrane
Osmosis
Transporting Molecules
Phagocytosis
Lysosome and Golgi
Pinocytosis
Receptor Mediated Endocytosis

102. The Molecular Building

Blocks of Life (18-min.)

Science: BIO.4, LS.2, LS.3

Featured Modules:

Carbon Chemistry
Polymers
Carbohydrates
Sugar/Starch Testing
Fats
Energy Storage
Protein Structure
Enzymatic Reactions
Nucleic Acids

103. The Chloroplast and Photosynthesis (14-min.)

Science: BIO.4, LS.2, LS.3

Featured Modules:

Origins of Photosynthesis
Chloroplast Origins
Chloroplast Structure
Light Reactions
Electron Transport Chain
NADPH & ATP Synthesis
Dark Reactions
Carbohydrate Synthesis

104. The Mitochondrion and ATP Synthesis (14-min.)

Science: BIO.4, LS.2, LS.3

Featured Modules:

Oxygen/Animal Evolution
Aerobic Respiration
The Mitochondrion
The Krebs Cycle
Electron Transport Chain
ATP Synthesis

105. DNA Replication and Mitosis (13-min.)

Science: BIO.6, LS.13

Featured Modules:

DNA-Where It's Found
Gel Electrophoresis
Mechanism of Replication
DNA Proofreading and Repair
Mitosis and Cytokinesis

106. The Genetic Code: Transcription, Protein Synthesis, Mutation (13-min.)

Science: BIO.6, LS.13

Featured Modules:

The Protein Structure of Life
DNA Transcription to mRNA
Protein Synthesis
The Intron Puzzle
Gene Regulation
Mutation