

# Biology Multimedia Software Series (CD-Roms, DVDs, Videos)

Anatomy & Physiology

MSS Intermediate Biology Simulations Series

MSS Introductory Biology Simulations Series

Biology Multimedia Series

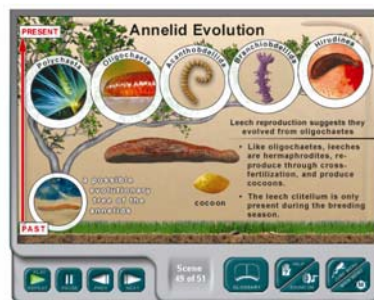
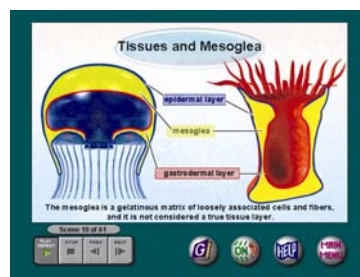
Interactive Life Science Series

Animal Dissection Series

Cells, Genetics & Heredity, Biotechnology

Fungi & Protists, Plants

Ecology, Animal, Human Body



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# Comprehensive Anatomy & Physiology Suite College Ed. (5 CD-ROM Set)

A 3D Exploration of the Human Body and How it Functions!

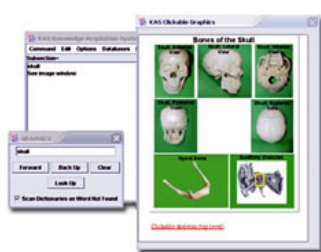
Complete and thorough instruction of human anatomy and physiology concepts together in one software program! The Comprehensive Anatomy & Physiology Suite - College Edition is a comprehensive 5 CD set comprised of three (3) separate and independent programs: **Human 3D**, **Anatomy Atlas**, and a **Medical Dictionary**.



## Human 3D

**Human 3D** is a powerful resource program covering all major areas of anatomy and physiology. It enables the user to access text, graphics, animations and 3D models by selecting a specific part of the anatomy or system of the body. For example, by selecting the **thorax**, the user could view this animation and text. By selecting the **digestive system**, the user would see examples such as these. The **cardiovascular system** has these examples

## ANATOMY ATLAS



The **Anatomy Atlas** is a map of the human body. By using the cursor and selecting different parts of the anatomy, the user can view text, graphics, animations and 3D models associated

with that particular area. Examples of this include the **skull**, the **musculature** and the **nervous system**

## MEDICAL DICTIONARY

The **Medical Dictionary** has both definitions and graphics to aid the user. For instance, by selecting

**'patella'**, this graphic will appear. Another example would be **'aorta'**. Audio pronunciation is also available for many difficult medical terms

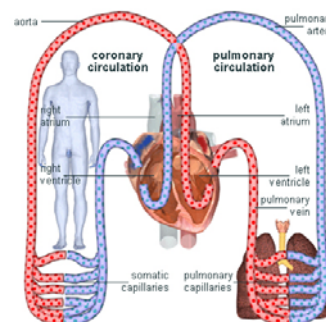


## Easily the best selling Human Anatomy Software product in America!

**STUDENTS!** Great study aid for exams and as a textbook companion!

**TEACHERS!** Stunning graphics and animations to enhance classroom instruction!

So **EASY-TO-USE** that navigation is self-guided, but so **VALUABLE** many nursing schools now require it! The Human 3D Advanced Internet Edition's suite of programs gives both students and inquisitive adults a wide variety of options to research and understand human anatomy and physiology



## Comprehensive Anatomy & Physiology Suite includes

- Anatomy Atlas (2 CDs) - maps and diagrams of the human body
- Human 3D (2 CDs) – an anatomy and physiology encyclopedia
- Medical Dictionary (1 CD) - with verbal pronunciation of many difficult medical terms
- **500+** 3D models and animations
- **3000+** detailed illustrations and graphics
- **5,000** medical terms
- **1,000** Latin translations
- **500** pages of text

SingleUser ₩465,000 / SiteLicense ₩1,757,000

# MSS Intermediate Biology Simulation Series

## MSS Simulation Series는

-다음과 같은 어렵고 이해하기 힘든 개념들의 쉬운 이해를 돕는다.

(What happens inside a mass spectrometer, how well pigments absorb different light wavelengths 등등)

-위험하고 많은 비용이 들어가는 실험들의 수행

-방법보다는 결과와 성과에 집중하도록 도와줌

-보다 다양한 방법으로 실험을 수행할 수 있도록 함.

-실험결과물에 대한 그래프를 자동적으로 얻을 수 있음.

-실험상 보이지 않은 것까지 보여짐 (e.g. how the molecules are moving);

-실험상의 어려운 개념을 설명할 수 있고 원리와 과정을 생생하게 이해하도록 함.

-학생들로 하여금 시각적인 학습을 선호하게 하고 각각의 개념을 이해하는데 새로운 통로를 제공케 함.

-Site License 제품: 지정된 한 학교내에서 사용자 제한없이 사용가능(Network 또는 Stand Alone)

## *Supplement your lectures & labs with hands on simulations*

Relate structures to their functions using clear illustrations and animations of **cell organelles, membranes, and molecular structures**. Become a genetic engineer and **transform bacteria to produce a human protein**. Reveal the invisible as you demonstrate the techniques of **differential centrifugation or tow-way chromatography**. Challenge your students' understanding of **replica plating** – see who can select the correct colonies and produce the greatest yield. Investigate the significance of **oxygen dissociation curves**.

Each title includes a **Teaching Tool** with objectives, summary text, and ready-made **Lessons**.

**Lessons** use screens from the Teaching Tools along with engaging interactive text, written to encourage students to observe, explore and interact.

Use the **Teaching Tools** as empowering visual aids to enhance explanation of difficult concepts. Adaptable to your style of teaching, you can project them onto a screen or whiteboard for whole-class instruction. Your students can work in small groups, or independently in the computer lab.



### 1. Applications of Gene Technology I.

Activities: Isolating, Cutting and Linking DNA; Electrophoresis and PCR

### 2. Applications of Gene Technology II

Activities: Genetic Modification of Microbes; Cystic Fibrosis

### 3. Biological Molecules I

Activities: Amino Acids; Chromatography; Proteins

### 4. Biological Molecules II

Activities: Monosaccharides and Disaccharides; Tests for Sugars; Polysaccharides

### 5. Cells

Activities: Eukaryotic Cells; Prokaryotic Cells; Microscopes, Measurement and Magnification; Electron Microscopes

### 6. Cell Membrane & Transport

Activities: Membrane Structure; Transport across Membranes; Osmosis

### 7. The Cell Cycle

Activities: Cell Cycle; Stages of Mitosis

### 8. Exchange

Activities: Diffusion; Fish: Gas Exchange and Counterflow

### 9. Genetic Code

Activities: Nucleic Acids – Replication; Protein Synthesis; Genetic Code

### 10. Photosynthesis

Activities: Pigments, Absorption and Action Spectra; Light-Dependent Reaction ; Light-Independent Reaction

### 11. Respiration I

Activities: Principles of Respiration; Glycolysis, Link Reaction and Krebs Cycle

### 12. Respiration II

Activities: Electron Transfer Chain; Anaerobic Respiration

### 13. Transport in Animals - NEW

Activities: Heart & Circulation; Transport of Gases; Dissociation Curve

### 14. Regulation of Breathing - NEW

Activities: Ventilation Mechanism; Ventilation Control

### 15. Nervous Coordination - NEW

Activities: Impulses & Synapses

### 16. Transport in Plants – NEW

Activities: Transport of Water

Each title ₩279,000

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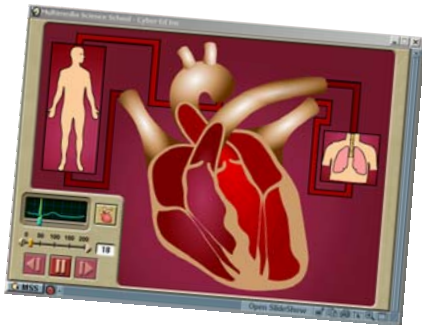
Full site license includes unlimited use within one school site.

# MSS Introductory Biology Simulation Series

**13 interactive programs** to support your teaching of Life Science and introductory Biology for grades 6 through 10. This engaging set of teaching tools includes student worksheets, teacher notes, and multimedia simulation tools on an easy-to-use **CD-ROM**.

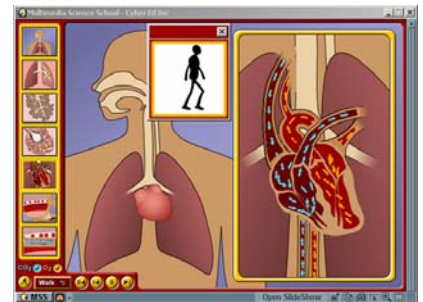
## Observe . . .

"My students needed to learn about the structure of the heart and its associated blood vessels. This dynamic representation of the heart allows students to see and understand the concept of blood flow. The alternative to using this dynamic tool would have been a diagram of the blood flow drawn on the whiteboard which with no movement is actually quite difficult to imagine."



## . . . Explore

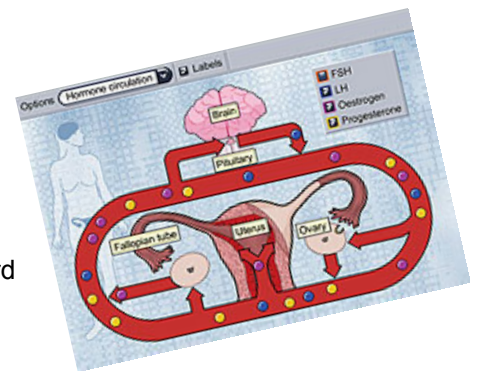
"It wasn't long before the students were following the blood's dynamic journey through the heart and answering the accompanying worksheet questions along the way."



## Interact . . .

"I issued each student a lap top computer. I then used my interactive whiteboard to show the students how to load the heart tool and which buttons they might want to click to explore the blood flow. The students were so absorbed I hardly heard a peep out of them all lesson."

*Alison Fletcher, Head of Science, Penistone School*



### 1. Alveoli

An interactive close-up of the processes in an alveolus, allowing students to see the effects of exercise and holding breath.

### 2. Blood Sugar

With the help of a virtual person, this tool shows how the muscles use sugar, the pancreas secretes glucagon and the liver turns glycogen to sugar.

### 3. Breathing and Respiration

A set of seven animations that show the passage of oxygen and carbon dioxide between muscles and the lungs.

### 4. Diet Analyzer

This data management tool allows students to analyze their food intake and compare the nutrient intake against the RDA.

### 5. Diffusion and Osmosis

Choose from the villi in the intestine, alveoli in the lung and root hairs in soil.

### 6. Food Webs

Model the population of foxes, mice, owls, rabbits and plants as you adjust the level of daily sunlight.

### 7. Heart

A cutaway view of the working heart allows students to observe the blood move through the ventricles with an on-screen ECG to detail each heartbeat.

### 8. Inheritance

Demonstrate the way in which characteristics are inherited by the passing of genes from generation to generation. With a click of the mouse genes can be changed and the results instantly observed.

### 9. Kidney

Explore the structure and function of the urinary system. Seven animated images explain the relationships the kidneys, blood system and bladder. Use this tool to introduce the complex topic of homeostasis to your students.

### 10. Mitosis and Meiosis

Students can see how chromosomes replicate, separate and appear in different cells with the subtle changes between steps clearly visible.

### 11. Photosynthesis

The familiar pondweed experiment is simulated to follow up the practical lesson in "perfect conditions".

### 12. Digestive System - "NEW"

### 13. Menstrual Cycle - "NEW"

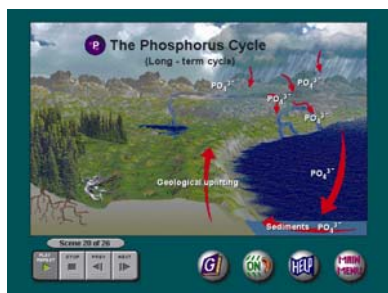
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# Biology Multimedia Series

## A. Introduction to General Biology

### A-1. Biology: The Study of Life

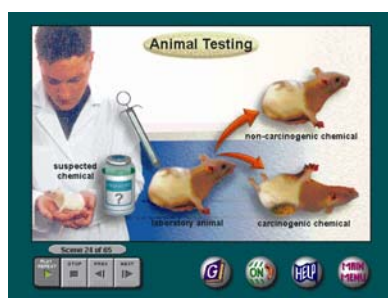
*Biology:* The Study of Life provides a lively introduction to the fascinating science of -- biology. Full-color graphics and special effects are used to illustrate important scientific concepts such as what it means to be alive, how observations can be used in reasoning, the process of developing a hypothesis, and more. A variety of interactive tutorials reinforce concepts such as identifying signs of life and the correct sequence of events when applying scientific methodology



**Topics Include:** Signs of Life; Themes in Biology including Energy, Systems and Interactions; Stability; Evolution; Unity within Diversity; Inductive and Deductive Reasoning; Scientific Methodology; and, From Hypothesis to Theory

### A-2. Exploring Biology: Careers & Issues

Here's your chance to investigate the opportunities for a career in biology. This comprehensive and interactive CD-ROM offers career insight about the major fields of biology, ranging from microbiology to botany. The program provides brief job descriptions as well as the minimum educational experience required for each job. Look at the research and work involved in several fields through exciting animations and visual displays. Thought provoking questions raise interest and encourage discussion about the advances in many of the disciplines.



*Major fields of biology are:* Genetics, Microbiology, Cell Biology, Human Biology, Botany, Zoology, Ecology, And Evolution.

*Job descriptions include:* Genetic Engineer, Human Geneticist, Medicinal Microbiologist, Soil Microbiologist, Dentist, Pharmacologist, Plant Physiologist, Forester, Veterinarian, Wildlife Biologist, Environmental Biologist, Field Biologist, Paleobiologist, Museum Curator, And Biological Consultant.

**Each Title – Single User/ ₱186,000**

**Set Price/2CDs – Single User/₱353,000,**

**Web Contents /₱1,334,000**

## B. The Energy & Chemistry of Life Series

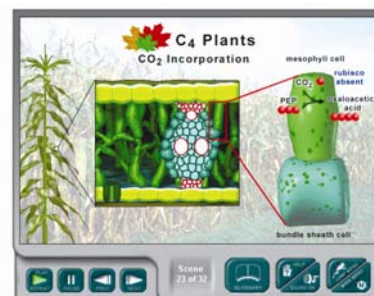
### B-1. Cellular Respiration

With this program students will gain insight into the vital biological process of converting food into a source of energy that can be used by the cell. Eye-catching animations and special effects depict important processes that take place during cellular respiration. The programs' flexible "replay" feature allows students to review involved concepts such as the electron transport chain until they fully comprehend the material.

**Topics Include:** Energy, Structure of ATP and ADP, Oxidation-Reduction Reactions, Description of Anaerobic and Aerobic Respiration, The Glycolytic Chemical Pathway and the Role of Glucose and Enzymes, Lactate Fermentation, Alcoholic Fermentation, Mitochondria, The Formation of Acetyl-CoA from Pyruvic Acid, The Krebs Cycle, Electron Transport Chain, ATP Molecules Produced/Per Molecule of Glucose, Chemical Equation Representing Aerobic Respiration, and The Role of Food in the Production of Energy.

### B-2. Photosynthesis

*Photosynthesis* examines how plants convert light energy into chemical energy. With this program, the process of photosynthesis comes alive through dynamic animations that

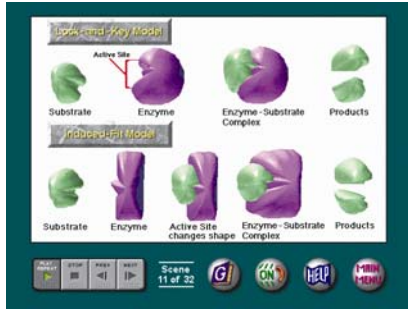


show photosystems and other essential processes in action. Full color graphics and models artfully depict photosystem II, photosystem I, electrons, photons, thylakoids and more. The narration uses a logical step-by-step manner to present involved concepts to assure student comprehension. Photosynthesis belongs in every school's biology CD-ROM collection.

**Topics Include:** The Roles of Carbon Dioxide, Water, Oxygen, Glucose, and Light Energy; Waves, Wavelengths, and the Visible Light Spectrum; Photons; Pigments including Chlorophyll a, Chlorophyll b and the Carotenoids; Chloroplasts; the Chemical Reaction for Photosynthesis; Light Reactions Including a Detailed Examination of Photosystems I and II, Electron Transport Chains, and the Generation of ATP and NADPH; Dark Reactions; and the Calvin Cycle.

### B-3. Enzymes

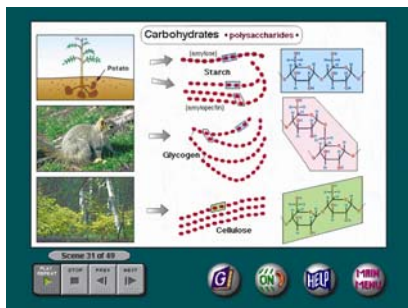
The biological importance of enzymes becomes apparent as this program vividly reveals how enzymes work to sustain life. Two dimensional models are animated and used to illustrate enzyme activity and the factors affecting enzyme activity. The narration provides a concise and step-by-step approach to learning about enzymes to ensure student comprehension of this involved subject.



**Topics Include:** Where are Enzymes Produced?, Where Do Enzymes Act?, Chemical Reaction, Catalyst, Substrates, Energy of Activation, Enzyme Nomenclature, Enzyme Structure, Lock-and-Key Model, Induced-Fit Model, Enzyme Activity: Effect of Enzyme on Substrate, Reusable Characteristic of Enzymes, Factors Affecting Enzyme Activity: Temperature, Enzyme Concentration, Substrate Concentration, pH, Cofactors, Noncompetitive Enzyme Inhibition, Competitive Enzyme Inhibition, Allosteric Activation, and Cooperativity.

### B-4. Biochemistry: The Chemistry of Living Things

Explore atoms, elements, molecules and the chemical compounds of life with Biochemistry: The Chemistry of Living Things. The colorful molecular models utilize special effects to achieve a feeling of movement and transformation as the various chemical bonds and compounds are covered. Challenging tutorials provide plenty of practice identifying chemical formulas to their corresponding structural formulas; and labeling the various parts of amino acid, and more.



**Topics Include:** Atoms, Elements and Molecules; Atomic Structure; Electron Energy Levels; Compounds; Chemical Bonds; Valence Electrons; Single, Double, and Triple Covalent Bonds; Polar Covalent Bond; Polar Covalent Bond vs. Non-Polar Covalent Bond; Ionic Bond; Hydrogen Bond; Chemical Formulas; Structural Formulas; Essential Inorganic Compounds; Essential Organic Compounds (carbohydrates, lipids, protein, nucleic acids).

Each Title - Single/AV186,000

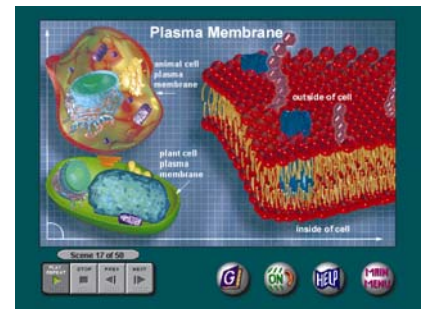
Set Price/4CDs - Single/AV669,000,

Web Contents/AV2,527,000

## C. Cell Structure & Specialization Series

### C-1. Inside the Cell

Inside the Cell graphically illustrates cellular organization, ultra-structure of organelles and the physiological processes they are responsible for. This updated version of a



previously existing product has been modified to remain current with recent advances in cell biology. The cellular experience features engineered cut-aways of the more complex organelles, detailed models of plant and animal cells, animated special effects, and electron micrographs. Imagine your students flying through the plasma membrane bi-layer, and taking a fully animated tour of this often-misunderstood organelle. Bring the mitochondria to life by peeling back the outer membrane and visualizing the cristae as never seen before. Improved graphics including fully rendered 3D environments and the addition of recent advancements in cellular biology make this one of our most visually pleasing and informative products.

**Topics Include:** Cellular Organization, Historical Perspectives, Chemical Constituents, Biochemistry, Classification, Prokaryotic and Eukaryotic Cells, Comparisons Between Plant and Animal Cells, Plasma Membrane, Cytoskeleton, Cytosol, Nucleus, DNA, Nuclear Membrane, Nuclear Pores, Nucleolus, Ribosomal RNA, Ribosomes, Endoplasmic Reticulum, Golgi Complex, Lysosomes, Mitochondria, Vesicular Transport.

### C-2. The Plasma Membrane and Cellular Transport

The importance of the membrane that surrounds the cell, as a regulator of the passage of materials to and from the cell becomes apparent in The Plasma Membrane. Captivating animations show the fluid-mosaic model in action. An impressive array of models, graphics, and accompanying narratives keep the program flowing at a lively pace.

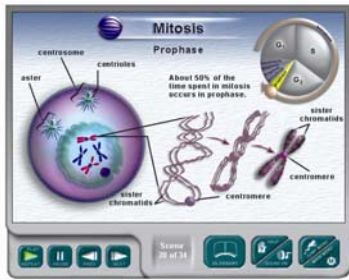
**Topics Include:** Structure of the Plasma Membrane (The Fluid-Mosaic Model); Brownian Motion; Diffusion; Concentration Gradient; Dynamic Equilibrium; Diffusion of Oxygen and Carbon Dioxide; Osmosis; Osmotic Pressure; Isotonic, Hypotonic, and Hypertonic Solutions; Passive Transport; Facilitated Diffusion; Active Transport; Endocytosis; Receptor-Mediated Endocytosis; Exocytosis.

### C-3. Mitosis

Learn about the remarkable process of cell reproduction as Mitosis examines how cells divide so that an organism can grow and replace damaged cells. A multitude of diagrams, photographs, animations, special effects and electron micrographs provide the visual component of learning.

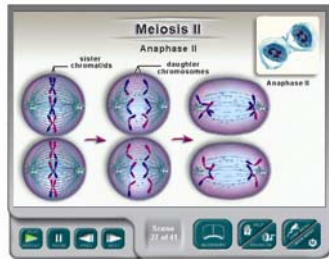
**Topics Include:**

Prokaryotic Cell; Eukaryotic Cell, Nuclear Envelope; Organelles; Cytoplasm; Nucleus; Genetic Material within a Cell -- Chromosome, DNA, Genes; DNA in a Prokaryotic Cell; Prokaryotic Cell Division; Eukaryotic Cell Division; Eukaryotic Cell Cycle Interphase; M Phase (Mitosis); Prophase; Centrioles; Spindle; Metaphase Plate; Metaphase; Anaphase; Telophase; Cytokinesis.



**C-4. Meiosis**

With this program, explore an essential process for life of forming sex cells, namely sperm and eggs, that are formed by a variation of cell division called -- Meiosis. Core processes such as prophase II, metaphase II, anaphase II and telophase II come alive with graphics that utilize powerful special effects and animations to show each step. Concise narratives describe in detail all vital aspects of meiosis. To assure student mastery of subject material, basic concepts of cell biology are reviewed prior to presenting more involved topics.



**Topics Include:** The Prokaryotic and Eukaryotic cell; Genetic Material within a Eukaryotic Cell including Chromosomes; Karyotype; Homologous Chromosomes; Sex Chromosomes and Autosomes; Eukaryotic Cell Division; Asexual versus Sexual Reproduction; Sexual Reproduction including Fertilization, Zygote, Meiosis, Diploid (2n), and Haploid (n); Meiosis I; Meiosis II; Nondisjunction; Spermatogenesis; Oogenesis.

**C-5. Blood and Immunity**

Two programs on one CD-ROM (a bargain)! The first part of Blood and Immunity teaches students about the components of blood, while the second introduces the components and processes of the immune system. There are plenty of exciting animations to keep the viewers interest, such as: antibodies attaching to bacterium; phagocytes squeezing through the blood vessel wall; phagocytes consuming bacteria; enzymes digesting bacteria and phagocytes; blood clotting and more.

**Topics Include:** Functions of Blood; The Components of Blood; Plasma, Plasma Proteins; Red Blood Cells (erythrocytes); White Blood Cells (leukocytes); Blood Clotting; Blood Types, ABO antigens, Rhesus (Rh) Factor; The Immune System -- Pathogens, Defenses Against Infection by Pathogens; First Line of Defense; Second Line of Defense, Third Line of Defense, Immune System Defects, HIV and AIDS.

**Each Title - Single/**

**Set Price/5CDs - Single/**  
**Web Contents/**

**D. Genetics & Evolution Series**

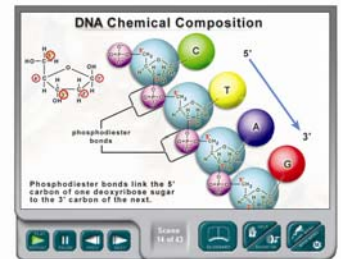
**D-1. Mendel's Principles of Heredity**

Multimedia at its finest, as this program follows a monk named Gregor Mendel, known as the father of genetics, as he performs intriguing experiments to uncover the mysteries of heredity. Modern terms such as genes and alleles are also explored in this program. Mind stimulating tutorials let students practice using punnett squares to predict outcomes. This program is a valuable addition to any curriculum covering genetics.

**Topics Include:** Mendel's Biography, Mendel's Pure-Breeding Pea Plant, Self-Fertilizing Pea Plants, The Seven Famous Traits of Mendel's Pea Plants, Mendel's Experiment on the Inheritance of Seed Color, Modern Terms in Genetics, Heredity Based in Probabilities, Mendel's Law of Segregation, The Punnett Square, and Mendel's Law of Independent Assortment.

**D-2. DNA: The Molecule of Life (Upgrade)**

The discovery of deoxyribonucleic acid and its function in heredity is a history of scientific achievement and demonstrates the human capacity for deduction through the scientific process. DNA: The Molecule of Life examines

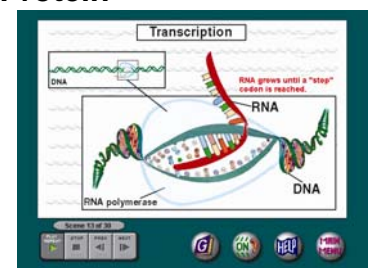


the experiments that provided clues to DNA's function as the carrier of hereditary information. Detailed illustrations and insightful animations allow students to follow steps that led to the discovery of DNA's exact chemical structure. Students will also learn how DNA is duplicated and repaired before it is transferred to new living cells.

**Topics Include:** An Introduction to DNA, Genes, Traits, and Heredity; The Discovery of Nucleic Acid and Chromosomes; Chromosomal Theory of Inheritance; DNA Chemical Composition; Purine, Pyrimidine, and Nucleotide Structure; Experiments Leading to the Discovery of DNA as Hereditary Material; Griffith's Pneumococcus Experiment; Avery, MacLeod, & McCarty Cell Extract Experiments; Chargaff's Rules; The Hershey and Chase Bacteriophage Experiment; X-ray Diffraction Studies of DNA Structure; Watson and Crick Identify the Double Helix; Messelson & Stahl Experiments Show DNA Undergoes Semiconservative Replication; DNA Replication and Repair Processes.

**D-3. From DNA to Protein**

From DNA to Protein effectively answers the question of why offspring resemble their parents in many ways. Colorful models illustrate how genes are expressed -- that is how the information encoded in DNA is used to build proteins. This involved subject area is handled in a thorough and concise



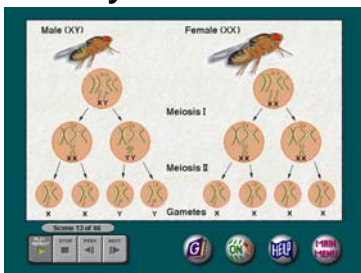
manner. Animations keep student interest while illustrating important concepts such as amino acid attachment to tRNA, polypeptide elongation, and more.

**Topics Include:** One Gene-One Enzyme Hypothesis, The Studies of Sir Archibald Garrod, The Studies of George Beadle and Edward Tatum, One Gene-One Polypeptide Hypothesis, The Structure of DNA, The Structure of RNA, Transcription, and Translation.

#### D-4. Investigating Heredity

The power of multimedia as a teaching tool becomes apparent as this program studies heredity - the passing of traits from parents to offspring. An overview of Mendel's famous pea plant experiments are graphically displayed, and fundamental heredity concepts are introduced. Special effects and animations are used to show the experiments performed by Thomas Hunt Morgan on *Drosophila melanogaster* (fruit flies). Finally, the program provides a thorough examination of various human genetic disorders. This program captures the excitement of studying heredity while providing a comprehensive review.

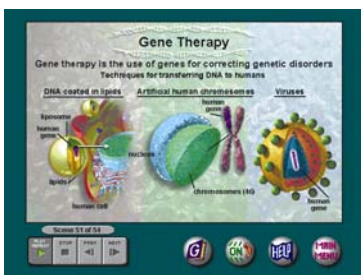
**Topics Include:** Gregor Mendel/Principles of Heredity, Chromosomal Inheritance including studies by Walter Sutton and Thomas Morgan, Patterns of Heredity, Human Heredity and Genetic Disorders, and Gene Therapy.



#### D-5. Genetic Engineering

Learn about the remarkable ability to manipulate DNA and transfer genes between different organisms in this up-to-date overview of *Genetic Engineering*. Insightful artwork and lively animations bring to light such previously complicated subjects as creating restriction fragments and expression of cloned genes. A graphic, step-by-step examination of procedures for transferring a human insulin gene to bacteria guides students into a thorough understanding of the techniques and processes of gene manipulation and transfer. Expansions of individual cells allow students to see genetic changes occurring from the cellular point of view. This program is applicable for the introductory biology student wishing to learn about gene transfer to advanced college level students desiring a more thorough understanding of the way genetic engineering works.

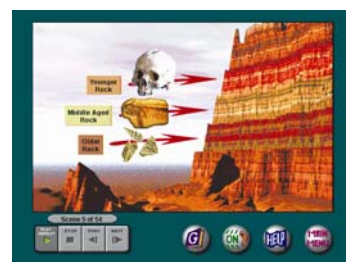
**Topics include:** DNA Composition and Its Function as Genetic Material; The Use of Natural Variation in Genes for Selective Breeding; Changes in Genes Through Mutation; A Step by Step Guide Through the Experimental Process of Genetic Engineering; Examples of Modern Genetic Engineering in Microbes, Plants, and Animals;



and The Applications of Genetic Engineering in Medicine and Gene Therapy.

#### D-6. Evolution: The 3 1/2 Billion Year Journey

This up-to-date multimedia program travels back in time and uncovers what is known about early life on earth. A spinning piece of amber encases a small organism, and various fossils are shown as the program begins by exploring prehistoric life. Informative narratives, dynamic graphics and animations are used to present the expansive subject area of evolution. While the convenient "Jump Menu" allows immediate access to specific topics. Interactive tutorials maintain interest with a variety of scenarios such as: identifying the moth coloration that will be preyed upon more frequently; completing various sentences pertaining to heredity; dragging each type of natural selection term up to the correct graph, and more.



**Topics Include:** Earth's Prehistoric Life, Early Views on Evolution, Charles Darwin, Heredity, Natural Selection, Micro Evolution, Variation, Evolutionary Fitness, Speciation, Fossil Finds, Macro Evolution, and Mass Extinctions.

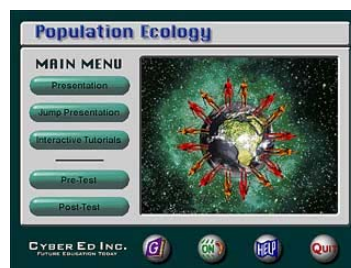
**Each Title - Single/₹186,000**

**Set Price/6CDs - Single/₹1,004,000,  
Web Contents/ ₹3,790,000**

### E. Ecology Series

#### E-1. Population Ecology

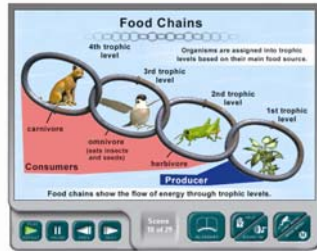
*Population Ecology* explores patterns in population growth, why populations grow and stop growing and what the trends in the human population are. Animated graphs and diagrams vividly depict core population concepts including: the lag phase, exponential growth, J curve, dynamic equilibrium and carrying capacity. Challenging "hands-on" tutorials consist of spelling the correct word after reviewing a clue, correctly labeling diagrams and graphs, clicking on a term that most closely describes a picture and more.



**Topics Include:** Defining a Population, Characteristics of Populations, Types of Populations, Growth Rate of Populations, Strategies of Reproduction, Human Population Growth, Limiting Factors, Age Structure of Populations, and Interactions between Populations including endangered species.

## E-2. Food Chains & Webs

*Food Chains and Webs* illustrates one of the most fundamental concepts in life science: how organisms in biological communities depend upon one another for energy and survival. Learn about different types of autotrophs and heterotrophs and their niches. Explore different ways of examining community trophic structures through various food chains, food webs and ecological pyramids. Biological magnification and human interactions with food chains and webs wrap up the program and demonstrate the interrelatedness of communities and their relevance to students' lives.



**Topics Include:** Energy Transfer through Living Things; Producers, Consumers and Decomposers; Photosynthesis and Chemosynthesis in Autotrophs; Different Feeding Styles of Heterotrophs; Community Trophic Structure; Food Chains; Food Webs; Ecological Pyramids; Energy Availability in a Community; Biological Magnification; Overpopulation and Human Interactions with Food Chains and Webs.

## E-3. Human Impacts on the Environment

Some of the greatest challenges facing modern society concern environmental problems, now let your students grasp these problems with *Human Impacts on the Environment*. Packed with up-to-date information and effective graphics, this program condenses complex environmental problems into a presentation that gives students an appreciation of how human activity impacts the environment. The interactive tutorials reinforce the connections between actions and consequences. Students and instructors will enjoy the clear explanations and diagrams. But going beyond explanations, this program stimulates students to think about the causes, effects, and solutions to environmental problems.



**Topics Include:** Human History and the Environment, Population Growth, Environmental Compartments, Ozone Depletion, Global Warming, Smog, Acid Deposition, Water Pollution, Pollution Control, Habitat Destruction, Natural Resource Exploitation, Biodiversity, Extinction, Conservation Biology, and Solutions.

## E-4. The Biosphere

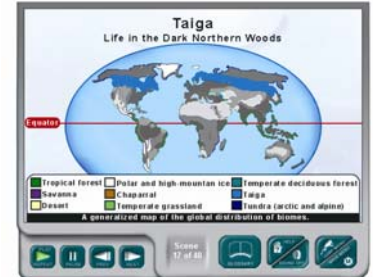
Stimulate interest and understanding for our planet and the delicate balance between the living and non-living with *The Biosphere*. Forests, mountains, oceans and animals are beautifully displayed through numerous photographs. The water, carbon, nitrogen and phosphorus cycles are all illustrated through the use of special effects and animations.



**Topics Include:** Lithosphere, Hydrosphere, Atmosphere, Biotic and Abiotic Factors, Populations, Communities, Ecosystems, Biosphere, Niche, Habitat, Symbiosis, Mutualism, Commensalism, Parasitism, The Water Cycle, The Carbon Cycle, The Nitrogen Cycle, The Phosphorus Cycle, Ecological Succession, and The Biosphere (Biodome) Project in Arizona.

## E-5. Biomes

Send your students on a unique tour of the Earth's biomes. From the cold, dry arctic tundra to the warm, moist tropical forest, discover the challenges of these unique environments and how organisms survive. Students will learn about the underlying forces that shape climate and then embark on a "tour" of the major biomes and aquatic ecosystems. Each tour destination will examine the particular climate of each biome and survey some of the unique ways organisms survive in these areas. Exciting visuals and an engaging narration will keep students interested as they explore the climate and organisms of the world's biomes.



**Topics Include:** Climate, solar energy, patterns of air and ocean circulation, geographical influences, microclimate, the physical characteristics of each biome, plant and animal adaptations, roles of humans, and aquatic ecosystems.

**Each Title - Single/#186,000**

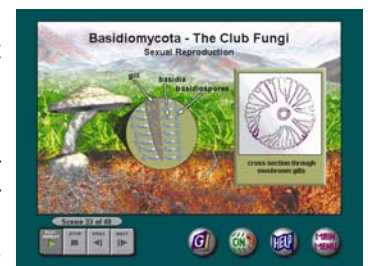
**Set Price/5CDs - Single/#836,000**

**Web Contents /#3,159,000**

## F. The Diversity of Life Series

### F-1. Fungi

This program reveals that fungi are more than a tasty delicacy in the culinary world, they are also vital to life on our planet for their contributions to the nutrient cycle. Eye-catching graphics and stimulating narratives explain how members of the Fungi kingdom are divided, show representative organisms from each phyla, explore typical fungal structures, and offer interesting insight to the uses and contributions made by fungi. Animated sequences vividly depict extracellular digestion, asexual reproduction, sexual reproduction by the process of conjugation and more.

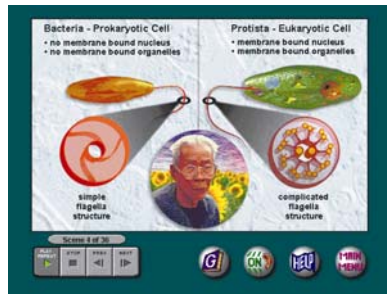


**Topics Include:** Similarities between Fungi and Plants, Fungal Habitats and Sizes, Typical Structures, Evolution of the Fungi, Asexual and Sexual Reproduction, Zygomycota - the Conjugation Fungi, Ascomycota - the Sac Fungi, Basidiomycota, Deuteromycota, Fungal Diseases, and Symbiosis between Fungi and Plants.

## F-2. Protista

Focus on the world of the kingdom *Protista* as this program vividly explores this group of plant-like and animal-like organisms.

Micrographs, photographs, and detailed illustrations coupled with impressive special effects are used to depict the various Phyla. While thought-provoking narratives elaborate on the physical characteristics and biological structures of protists. Various diseases caused by protists are examined. The program concludes by explaining the beneficial roles that protists play in the environment and their importance for life on earth.



**Topics Include:** Evolution of Protists, Plant-Like Protists, Animal-Like Protists, Fungi-Like Protists, and Diseases Caused by Protists.

## F-3. Classification of Living Things

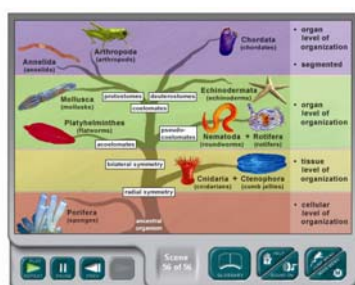
Follow the development of classification from its use among early humans to the latest cutting edge theories about how living organisms should be organized. This exciting program immerses students in the dynamic study of taxonomy, highlighting the importance of this central field of biology and showing how new ideas and new technology lead to the refinement of classification schemes. Students learn about the hierarchical classification scheme and binomial nomenclature, as well as other aspects of classification. Compelling interactive lessons give students hands-on experience in constructing cladograms and classifying organisms using dichotomous keys.



**Topics Include:** History of Classification, Criteria For Classification, The Five-Kingdom Classification Scheme, Six-Plus-Kingdom Classification Schemes, Three-Domain Classification Scheme, Taxonomic Keys, The Traditional School of Systematics, Cladistics, and Phenetics.

## F-4. Invertebrates

Invertebrates guides students through an investigation of Earth's animal phyla. In this overview of the animals without backbones, students gain an understanding of the evolutionary relationships between organisms by following trends in



increasing complexity in body plans and levels of organization. Important details in animal development and categorization are reinforced as students tour the phyla, examining differences in development and organization as well as ways in which the various types of animals survive and reproduce to create new generations.

**Topics Include:** Origins of Multicellular Organisms; Distinctive Animal Characteristics; Binomial Classification of Animals; Embryonic Development and the Importance of Ectoderm, Endoderm, Mesoderm, and the Coelom; Symmetry; and An Overview of Invertebrate Phyla: Porifera, Cnidaria, Ctenophora, Platyhelminthes, Nematoda, Rotifera, Mollusca, Annelida, Arthropoda, Echinodermata, and the Invertebrate Chordates.

## F-5. The Vertebrates

Better than a trip to the zoo! *The Vertebrates* examines the natural history as well as form and function of the vertebrate animals. Students are extremely interested in animals, and they will be fascinated by the vast array of photographs, animations, and challenging tutorials presented in this program. This wide-ranging program begins by exploring the fundamental differences between animal and plant life. Classification based on classical taxonomy is then clearly explained and applied. Derived versus conserved characteristics are stressed as the cornerstones of vertebrate evolution leading to the incredible diversity exhibited in these animals. *The Vertebrates* serves as an introduction to the animal kingdom as well as a review of evolution and animal classification concepts.

**Topics Include:** A Survey of the Animal Kingdom, Animal Vs. Plant Cell Structure, Binomial Nomenclature, Linnaean Classification, Chordate Characteristics and Classification, Vertebrate Characteristics and Classification, Vertebrate Evolution, Vertebrate Form & Function as well as Characteristics and Adaptations of: Fishes, Amphibians, Reptiles, Birds, and Mammals.

## F-6. Flowering Plants

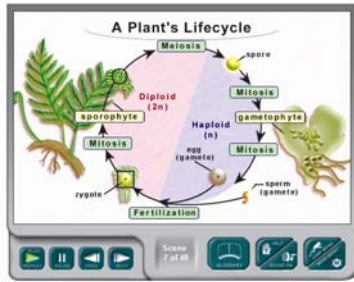
See flowering plants come to life in this beautifully animated and illustrated program. This program provides vivid visuals describing events from flower production to seed set and germination. The lifecycle is broken into a series of detailed illustrations that actively show the processes of pollen formation, egg production, and fertilization. Watch fruit dispersal occur before your eyes. The confusion between fruits and vegetables will disappear as students learn the differences between them. Students will discover flowering plants are more than just beautiful blossoms.

**Topics Include:** Plant classification with an emphasis on the differences between monocots and dicots; the structure and function of a flower; modes of pollination; sexual reproduction versus asexual reproduction; the lifecycle of an angiosperm; fruit production; differences between fruits and vegetables, and the importance of fruits and vegetables to humans and other animals.



## F-7. Non-Flowering Plants

Follow the progression of non-flowering plants from life in the sea to life on land in this unique survey. See vivid recreations of the environments in which these plants evolved change before your eyes.

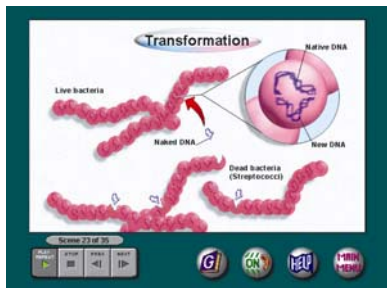


Detailed illustrations show the adaptations for land in the three groups of non-flowering plants: the non-vascular plants, the seedless vascular plants, and the seed-bearing vascular plants. Beautiful photographs and plant descriptions teach students characteristic differences used to identify the non-flowering plants, from the often-overlooked hornworts to the bizarre *Welwitschia* to the more familiar ferns. Students will learn the importance of non-flowering plants in their daily lives as they learn of their uses, past and present.

**Topics Include:** Characteristics of plants, classification of the non-flowering plants, plant adaptations, a brief description and survey of the plants in the three groups of non-flowering plants: the bryophytes, the seedless vascular plants, and the seed-bearing vascular plants (gymnosperms), and a representative lifecycles for each group of non-flowering plant.

## F-8. Viruses and Bacteria

This program draws the student into the fascinating microscopic world of viruses and bacteria. Vivid diagrams and animations, along with electron photomicrographs, photographs, and narratives, are used to cover viruses and bacteria in a comprehensive manner.



**Viruses Topics Include:** Size, Shapes and Structure; Attachment to Host Cell; Entry into Host Cell; Reproduction -- Lytic Cycle, Lysogenic Cycle, Retrovirus Reproduction; Transmission; Viral Diseases; Viral Vaccines.

**Bacteria Topics Include:** Size, Shapes and Structure; Classification by Respiration; Classification by Mode of Nutrition; Reproduction; Genetic Exchange Methods; Types of Bacteria -- Archaeobacteria, Eubacteria; Bacterial Diseases; Transmission; Disease Prevention; Pasteur, Koch, Sir Alexander Fleming; Biological and Economic Importance of Bacteria.

**Each Title - Single/¥186,000**

**Set Price/8CDs - Single/¥1,338,000,**

**Web Contents/¥5,054,000**

## G. The Animal Kingdom Series

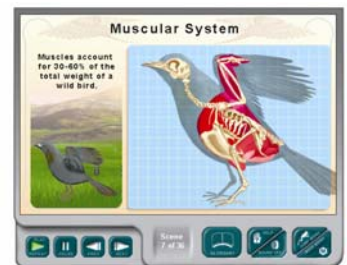
### G-1. Sponges

Come explore the life of the primitive and peculiar animals in this interactive program entitled *Sponges*. Pop-up graphics illustrate the characteristics that classify sponges as animals as well as the qualities that make sponges unique. Intriguing animations show how sponge cells relate to one another and how entire colonies of sponges relate to other organisms. Students will absorb the vividly presented information about sponge anatomy and reproduction. Easy to use tutorials reinforce the student's comprehension of the program.

**Topics Include:** Paths of Evolution; The Definitions of an Animal, Vertebrate, and Invertebrate; Characteristics of Sponges; Somatic Embryogenesis; Theories of Multi-Cellular Origin; External Structures; Canal Systems; Cell Types, Asexual and Sexual Reproduction; and Ecology.

### G-2. Birds: Characteristics & Adaptations

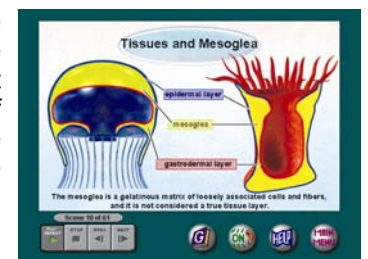
More than a program full of pretty pictures this program explores the evolution, structure, and adaptations of birds in an extensive and insightful manner. Excellent narratives and sound effects that will keep the viewer's interest are incorporated with numerous photographs, drawings, detailed illustrations and animations.



**Topics Include:** The Classification of Birds, Birds Relation to Dinosaurs, Flight, Feathers, Wing Types and Migration, Darwin's Finches, Adaptation and Beaks, Adaptation and Feet, Digestive System, Excretory System, Respiratory System, Reproductive System, and Nervous System.

### G-3. Cnidarians

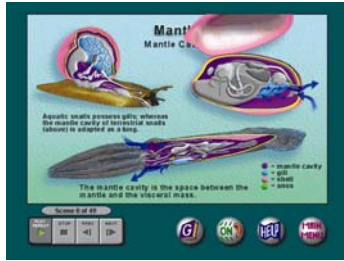
Come explore the underwater world of the Cnidarians, an ancient yet successful group of animals that include colorful corals, strange sea anemones, and elegant jellyfish. Detailed graphics and a comprehensive narration allow students to discover the unique characteristics of this phylum. Creative animations and illustrations engage students to learn about the unusual strategies the members of this phylum use to eat, move, reproduce, and survive. Colorful interactive modules give students a chance to review their knowledge of Cnidarians in a stimulating manner.



**Topics Include:** Evolutionary History, What Makes a Cnidarian an Animal, Phylum Cnidaria Characteristics, Primitive versus Advanced Features, Polyp and Medusa Body Types, Tentacles, Nerve Nets, Specialized Muscular Cells, Colonies, Digestion, Lifecycles, The Anthozoans, The Hydrozoans, The Scyphozoans and Cubozoans.

## G-4. Mollusks

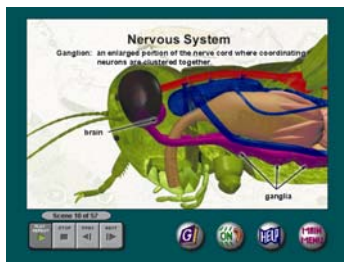
The mysteries behind the ancient and diverse phylum of mollusks are unlocked with the power of multimedia. Vibrant photographs and original three-dimensional artwork reveal the biology of the mollusks in outstanding detail. Detailed animations show processes as they really occur in the 'soft bodied' animals. From unique evolutionary adaptations of the four major classes to in-depth examinations of unifying organ systems and body structures, the *Mollusks* program provides a comprehensive study of these truly remarkable creatures.



**Topics include:** Classifying Mollusks; Mollusk Organ Systems, Specialized Structures and Appendages, including the Foot, Mantle and Mantle Cavity, Tentacles, Eyes, and the Radula; The Evolution of Mollusks from Cambrian Ancestors; An In-Depth Look at Diversity and Biology of the Classes Gastropoda, Polyplacophora, Bivalvia, and Cephalopoda, with Emphasis on Torsion, Segmented Shells, Filter Feeding, and Jet Propulsion Respectively; Mollusk Defense Mechanisms and Adaptations; and The Importance of Mollusks to Humans as Food, as Pests, and as a Source of Jewelry.

## G-5. Arthropods

Why can tiny ants carry such large objects? *Arthropods* provides answers to students' major questions about insects, spiders, crustaceans, and other organisms with 'jointed legs.' Arthropods are the most diverse animals on the planet in terms of both species diversity and sheer numbers. Full-color photographs, detailed illustrations, and enlightening animations depict the biology of these unique and fascinating animals. The user-friendly interface invites students to look deep inside the world of arthropods and discover the adaptations and behaviors that have made them the most successful animals on earth.



**Topics Include:** Classification of Arthropods; The Importance of the Exoskeleton, Jointed Appendages, and Segmentation; Arthropod Organ Systems; Feeding and Forage Techniques; Reproductive Mechanisms; Pheromones; Molting; Complete and Incomplete Metamorphosis; Overviews of the Biology and Importance of the Crustaceans, Chelicerates (Arachnids), Uniramians (Insects, Etc.); Social Insects; Disease Vectors; and The Importance of Insects to Humans.

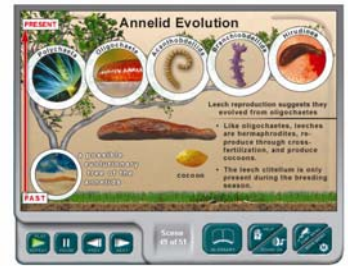
## G-6. Annelids

Explore the biology and natural history of segmented worms! Learn how earthworms improve soil? Why they come to the surface on rainy days? Discover features annelids share with all animals as well as distinctive characteristics found only in phylum Annelida. Annelid interactive overview of the three largest annelid classes teaches students the importance of

oligochaetes, the duality of polychaetes, and the actual medical uses of leeches.

**Topics Include:**

Animal Characteristics; The Importance of Annelid Segments, Symmetry, and Development in Classifying Annelids; Annelid Evolution; Annelid Anatomy and Organ Systems Involved with the Integument, Support, Movement, Digestion, Excretion, Circulation, Respiration, and Sensation; Diversity, Feeding and Reproduction in the Three Largest Annelid Classes: Oligochaeta, Polychaeta, and Hirudinea; Human Use of Annelids.



**Each Title - Single/¥186,000**

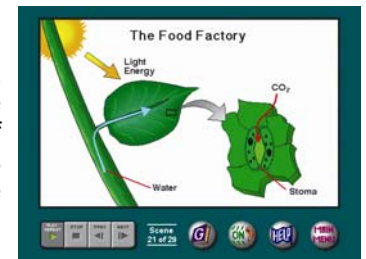
**Set Price/6CDs - Single/¥1,004,000,**

**Web Contentse/¥3,790,000**

## H. The Plant Anatomy Series

### H-1. The Leaf

The Leaf provides a detailed look at the anatomy and function of leaves, and discusses their importance to life around us. Electron micrographics and colorful graphics are used to illustrate the tissues and cells of leaves. Students will enjoy watching the animated guard cell in action as it opens and closes.



**Topics Include:** The Importance of the Leaf in Plants; The External Appearance of a Leaf including the Blade, Apex, Margin, Base and Petiole; Simple versus Compound Leaves; Patterns of Leaf Arrangement; Veins in Leaves; Conducting Tissue; Tissues and Cells of Leaves; Guard Cells, Transpiration; Photosynthesis; Importance of Leaves in Oxygen and Carbon Dioxide

### H-2. Roots and Stems

Learn about two very important plant structures that take in water, nutrients, and anchor the plant with this multimedia presentation Roots and Stems. The study of roots and stems comes alive with vivid graphics, detailed illustrations, electron micrographs, and concise narratives.

**Topics Include:** Functions of the Root, Primary and Secondary Roots, Tap Root System, Fibrous Root System, Adventitious Root System, Root Cap, Growth Zones, Root Tissues, Functions of the Stem, Types of Stems, Structure and Tissues of Herbaceous Monocot, Herbaceous Dicot and Woody Dicot Stems.

**Each Title - Single/¥186,000**

**Set Price/2CDs - Single/¥353,000**

**Web Contents/¥1,334,000**

# Interactive Life Science Series

## Courseware Features

### Lesson

Engaging multimedia lessons help students visualize scientific processes and facilitate conceptual learning. Up-to-date, spiraling science instruction builds upon previously introduced information and correlates to specific standards and objectives. Learner controlled pacing allows students to adjust the progress of instruction to their individual needs

### Application

Apply new knowledge to fun, theme-based scenarios that promote critical thinking and reinforce skills and concepts. Facilitates class, small group, individual, or online instruction

### Test

Each Topic contains a sophisticated test bank which links questions to specific standards-based objectives. Questions are randomly selected to ensure that the student has mastered a specific concept, standard or objective. Standardized-test format helps decrease high-stakes test anxiety.

### Teachlink

Extend the learning environment by annotating each Lesson or Application with supplemental activities, web pages or assignments. In Administrator Mode, teachers can direct students to specific sites or documents on the Internet or local network for customized learning instruction

### Glossary

A narrated word bank, with read-along feature, covering terms introduced throughout a Unit. By clicking on a word, the student can see the spelling and hear the word pronounced and defined.

### Jump Menu

Jump to a specific scene or topic within each Lesson using this outline feature. Allows the user to view the Lesson by topic rather than in sequence. Teachers can supplement their lectures or text assignments with graphics and animations.

### Read Along

Optional read-along feature allows limited English proficient (LEP) and hearing impaired students to follow the narrated script more easily. Designed with careful attention to age appropriate reading level, this feature is great for low and below-grade-level readers.

### Tool Set

Built-in Tools include a unit conversion bar and calculator.

## Unit and Topic Descriptions

### 1. Cells – The Basis of Life

Explore the importance, structure, function, and life-sustaining processes of cells. Cells are one of six requirements for life. Investigate the chemical components required for cell life, structures that allow cells to produce everything they need to survive, and cellular components that make some cells very different than others. Students will learn that certain cells perform a variety of tasks while others are highly specialized for a particular role in a multi cellular organism. Tie it all together with an overview of how cells make energy, transport materials, produce proteins and divide through mitosis and meiosis.

Students will build various cells, determine if they can function properly, and describe processes that are needed for cell life.

#### Topic 1: What is Life?

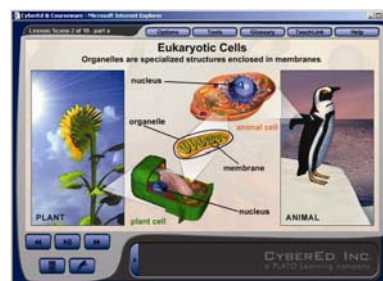
Explore the six signs of life and what it means to be alive while being introduced to the difference between unicellular and multicellular organisms, metabolism, response to stimulus, and the difference between sexual and asexual reproduction

#### Topic 2: The Chemistry of Living Cells

Examine the different organic and inorganic chemical constituents necessary for life while also learning how cells use them.

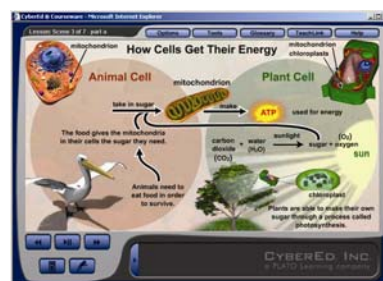
#### Topic 3: Similarities in Cell Structures and Functions

Learn the four characteristics all cells have in common (cytoplasm, cell membrane, DNA, and ribosomes) and what distinguishes eukaryotic cells from prokaryotic cells.



#### Topic 4: Differences and Specialization in Cells

Investigate cell differentiation and specialization. Find out how plant and animal cells get energy and what the central vacuoles, cell walls and chloroplasts do for plant cells.



#### Topic 5: Cell Processes

Study the processes of photosynthesis, cellular respiration, passive and active transport, protein synthesis, and how cells divide through mitosis and meiosis.

Single/5 418,000, 5Lab/10Net 1,254,000

## 2. Structure & Function in Living Organisms

Survey the interconnectedness of life in Structure and Function in Living Organisms. Multi-cellular organisms depend on the cooperation of cells. Learn how cells work together to form four specialized types of tissue that are the basis of all of the organs and organ systems in the body. Explore the relationships between individuals, populations, communities and ecosystems.

An in-depth tour of human organs and the eleven organ systems will prepare students to identify the body's main organs, label structures in the ear and eye, assemble a heart, and choose which organ systems are required for particular tasks in life.

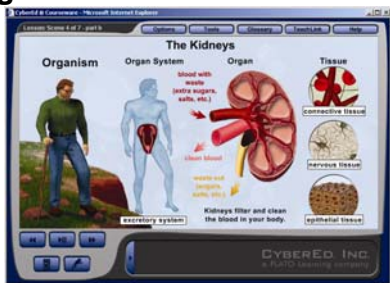
### Topic 1: Levels of Organization

Observe how cells work together as tissues, how tissues form organs, and how organs comprise entire organ systems that make up the body. Learn that individuals assemble into populations, different populations become communities, and communities are part of an ecosystem.



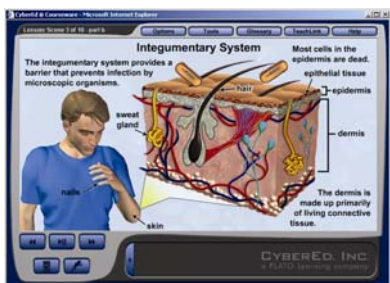
### Topic 2: Structure and Function of Tissues and Organs

Students learn that four specialized types of tissue (nervous, epithelial, connective and muscle tissue) form all of the organs that make up their bodies. Students also study the function of specific sense organs, the eye and ear, through interaction.



### Topic 3: Organ Systems

A comprehensive overview of the major organs and their role in a system. Students will gain understanding in how organ systems work and learn the importance of the eleven organ systems to human survival.



Single/5 251,000, 5Lab/10Net 753,000

## 3. Classification & Diversity of Life

Investigate the diversity of life on our planet. The history of taxonomy provides a springboard for studying modern classification systems. Learn how and why organisms are separated into different groups, how to read branching diagrams, and how to use dichotomous keys. This unit provides a tour of the five and six kingdom classification schemes and introduces representatives of major phyla. Highlighted features yield an understanding of various body plans, means of surviving, life cycles and unique features that contribute to the diversity of life. Students will be able to distinguish between different kingdoms and phyla of organisms and identify them based on their characteristics.

### Topic 1: Classifying Life

Taxonomy is the science of naming and classifying organisms. Students will be introduced to the five and six kingdom classification schemes while learning the meaning of species through kingdom, gaining familiarity with branching diagrams, and practicing a dichotomous key.

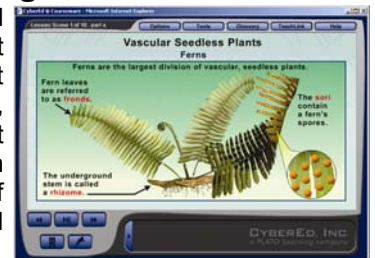


### Topic 2: Bacteria, Protists, and Fungi

Examine general characteristics of bacteria and why archaeobacteria and eubacteria are considered either one or two different kingdoms of life. Students also investigate the plant-like, animal-like and fungus-like protists and the four divisions/phyla of fungi.

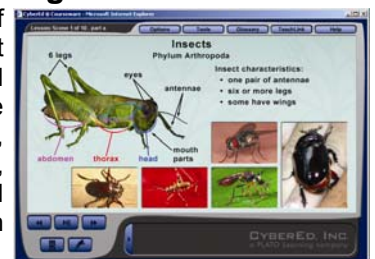
### Topic 3: The Plant Kingdom

Students review general characteristics of plant anatomy, explore plant adaptations to life on land, then survey differences that separate plants based on the presence or absence of vascular tissue, seeds, and flowers.



### Topic 4: The Animal Kingdom

Survey the simplest of sponges through the most complex mollusks and chordates while investigating symmetry, organ systems, body plans, and specially adapted features that make each phylum unique.



### Topic 5: Exploring Vertebrates

Explore the Phylum Chordata with this tour of vertebrate classes. Review animal and specific chordate characteristics before learning about different types of fish, amphibians, reptiles, birds and mammals.

Single/5 418,000, 5Lab/10Net 1,254,000

## 4. Genetics and Heredity

Discover the importance and function of one of life's most essential ingredients - DNA. This introduction to genetics provides an understanding of the chemical make-up of DNA, how it functions as genes, how genes code for traits, and how DNA can be manipulated to create desired and even new types of organisms. Explore transcription and translation, Mendel's studies, how to use Punnett squares to predict phenotypes, advantages and disadvantages of various reproductive strategies, mutation, and the process of gene transfer. Students will gain the knowledge necessary to build DNA and RNA strands, arrange steps in protein synthesis, arrange organisms on a pedigree, and make choices about selective breeding and genetic engineering.

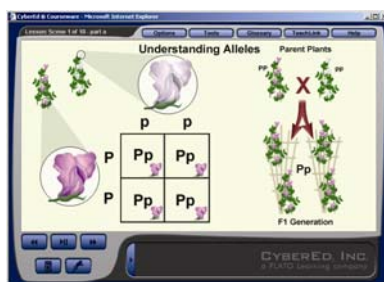
### Topic 1: Genes and Traits

Investigate DNA structure, function, and replication. Students take a journey into the cell to learn about the processes of transcription and translation that are necessary for making the proteins that compose their bodies.



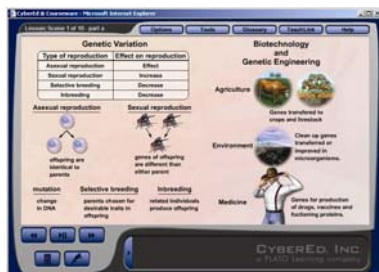
### Topic 2: Heredity

Enhance your students' understanding of genes and traits with this introduction to genetics. Students help Gregor Mendel perform his famous pea plant experiments while learning how to use Punnett squares. This topic also covers dominant and recessive traits and how inheritance patterns affect individuals.



### Topic 3: Genetic Variation and Biotechnology

Students explore genetic variation and human innovations that use genetic information to make new organisms. The human genome project, genetically engineered foods and ethics of gene transfer are also introduced.



Single/5 251,000, 5Lab/10Net 753,000

## 5. Organisms and Their Environment

Examine the various ways in which Earth's organisms survive. Learn how organisms maintain homeostasis and how they react to stimuli through various innate and learned responses. Discover the role each organism plays in an environment, and how organisms compete or cooperate. Follow the flow of energy through food chains and webs while gaining an understanding of natural matter cycles and succession. A tour of Earth's biomes, with an emphasis on preserving biodiversity, will tie this unit together and show how matter, energy, and organisms interrelate to sustain life. Students apply their knowledge to predicting responses, identifying ecosystem components, arranging organisms in food chains and webs, and proposing solutions to environmental problems.

### Topic 1: Maintaining Conditions for Life

Observe physiological, nervous, hormonal, seasonal and behavioral responses that help organisms maintain Homeostasis. Students discover that animals have learned responses, and both plants and animals exhibit various innate responses (tropisms in plants; instincts and reflexes in animals) that allow them to respond to their environment.

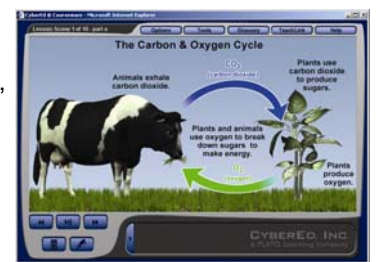


### Topic 2: Living with the Environment

Students discover that each organism has a particular role (producer, consumer, decomposer) and niche in their environment. Students also learn about factors that limit populations and ways organisms have developed relationships of interaction that affect their survival.

### Topic 3: Flow of Energy and Matter in Nature

Explore how energy is transferred in food chains, food webs and energy pyramids. Students learn that matter is cycled in the environment as well as energy. The carbon and oxygen cycle, nitrogen cycle, water cycle, and cycle of living material that occurs during ecological succession show the interconnectedness of life and resilience of nature.



### Topic 4: Biomes and Biodiversity

Investigate adaptations of plants and animals that allow them to survive in Earth's various climates. Students survey the major land (tundra, coniferous forests, deciduous forests, rainforests, grasslands, and deserts) and water (marine and freshwater) biomes. Preserving biodiversity and solutions to environmental problems are also explored.

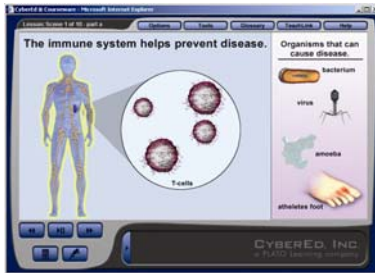
Single/5 335,000, 5Lab/10Net 1,004,000

## 6. Human Health and Reproduction

Human Health and Reproduction reveals how we are born and why we either stay healthy or become ill. Explore how the germ theory of disease led to the identification of pathogens that cause communicable diseases. Preventing disease happens on many fronts - both natural and technological. Health is more than avoiding germs however, and healthy lifestyles can reduce risks of many noncommunicable diseases. Learn the anatomy of the male and female reproductive systems and follow the nine-month process that ends in the birth of a newborn. Explicit details of reproduction are spared, while anatomy and process in development from conception to birth are highlighted.

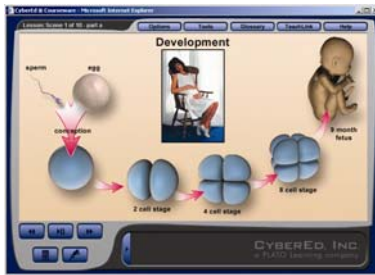
### Topic 1: Immunity and Preventing Disease

Learn about communicable diseases, the pathogens causing them, and ways technology, the immune system, and various methods of hygiene help prevent or cure disease. Students also investigate noncommunicable diseases and how to prevent them.



### Topic 2: Human Reproduction and Development

Study the anatomy of the male and female reproductive systems and learn how they contribute to the development of a human child. Students also follow the important stages as an embryo develops into a newborn. Terminology and processes are highlighted, while the details of intercourse are spared, making this program appropriate for sensitive or younger audiences.



Single ₩167,000, 5Lab/10Net ₩502,000

## 7. Change Over Time

Investigate change over time and learn how fossils provide clues to the past. The fossil record and similar characteristics in embryos tell a story of gradual change. Survey traits that have changed very little over time as well as traits that have changed and enhanced survival in particular habitats. Students will learn how fossils are made and how they can be traced to a point in geologic time. Darwin's theory of evolution by natural selection provides context for understanding how genetic variation and factors in the environment are the driving force for evolution and diversity.

### Topic 1: Fossils and the Geologic Time Scale

Students are presented with the evidence to support change over time. They learn how fossils are made and dated while exploring major developments and extinctions of life on Earth over the geologic time scale.



### Topic 2: Evolution and Natural Selection

Explore how overpopulation, genetic variation, competition for resources, and reproductive success drive natural selection. Students find out how speciation and diversity results from gradual processes over many generations where organisms fill new or available niches.



Single ₩167,000, 5Lab/10Net ₩502,000

Interactive Life Science Full set(24Title)  
Single ₩1,851,000, 5Lab/10Net ₩5,554,000



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문의사항을 전화 또는  
E-mail(dw87@dongwonav.co.kr)로  
남겨주시면 즉시 회신하여 드리겠습니다.  
TEL 02-313-0930 FAX 02-364-1590  
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## Animal Dissection Series



A virtual alternative to traditional dissections, this comprehensive program includes six animals: crayfish, earthworm, frog, perch, pig, and rat.

Students select a dissection tool and make the appropriate incision. If done correctly, a video displays the step being performed in the lab. Hints are available. The dissection is scored and the results can be printed or emailed.

### **The Dissection Series includes:**

Six animals: frog, fetal pig, rat, earthworm, perch & crayfish

An interactive dissection of each animal

Over 100 video demonstrations

Over 450 large scale high-quality photographs

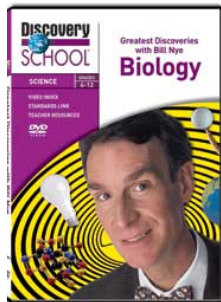
A randomized quiz for each animal

Complete 6 Animal Dissection Unit

**Single User \$836,000**

## Greatest Discoveries with Bill Nye: Biology

Join Bill Nye as he delves into the Greatest Discoveries in Biology. This program explains how the early use of microscopes and Anton Van Leeuwenhock's accidental discovery set the stage for studying microorganisms. It explores 19th century research breakthroughs and covers cell division, sex cell division, and cell differentiation.



Learn how the discovery of mitochondria has helped us understand reproduction, ancestral lines, and cancer; how cells convert sugars, fats, and proteins into energy in the Krebs Cycle; and how they communicate through neurotransmitters and hormones.

Explore the process of photosynthesis and how the discovery of the ecosystem process bridged biology with physics, chemistry, and other fields of science that describe the environment.

**DVD \$130,000 / Length: 45 min.**

## Greatest Discoveries with Bill Nye: Genetics

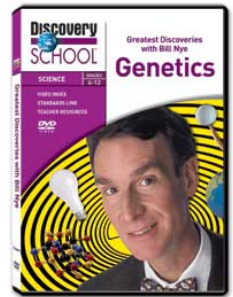
It took 150 years to progress from Mendel's experiments with peas to the complete sequencing of the human genome. Host Bill Nye explores why certain traits are passed through families and species.

He discusses the process by which scientists came to understand that inherited information is passed according to rules.

Featuring discoveries related to DNA and its breakthrough as the chemical basis of genetic information, as well as a set of instructions for making the essential proteins of life. Nye also explains that RNA is the messenger that carries the instructions from living cells to enable protein production.

Nye visits FBI headquarters in Washington, D.C., where DNA becomes personal. The discovery that DNA sequences are unique to each individual ushered in the era of criminal forensics, playing an important role in courtrooms ever since.

**DVD \$130,000 / Length: 45 min.**

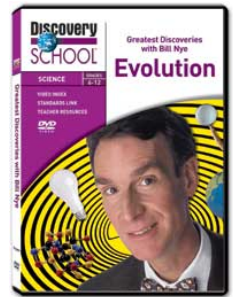


## Greatest Discoveries with Bill Nye: Evolution

Explore the history of paleontology, beginning at the site of an asteroid that may have brought about the demise of the dinosaurs. Visit Bob Ballard, who discovered new deep-sea life forms, and Douglas Erwin, who demonstrates how fossils provide a vivid snapshot of prehistoric life.

Explore Linnaeus' 1735 species classification system and a dramatic re-creation of Darwin's development of his 19th-century theory of evolution.

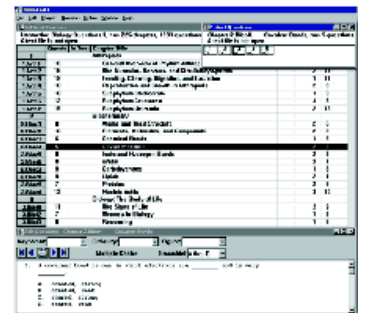
**DVD \$130,000 / Length: 45 min**



## MicroTest Bank - Biology

Assess your students' progress using Biology programs with the powerful test-generating program, MicroTest III.

Includes 1,300 questions from the Biology course. Now designing and printing tests and quizzes is easy!



Use the ready made tests or create your own by incorporating any of the following features:

- Add or change up to 15,000 questions of your own
- Print tests in either single- or dual-column format
- Include multiple choice, true/false, matching, short answer & fill in the blank questions

Include illustrations, charts, mathematical equations, & scientific symbols to one or a group of questions

**CD-Rom \$372,000**

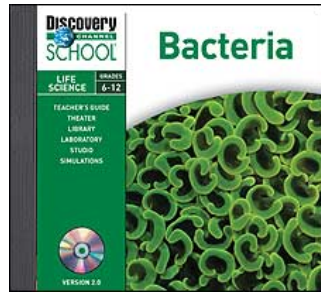
# Discovery Channel School: Life Science Bundle

## 1. Bacteria

How can something so small play such a big role in our lives?

This interactive CD-ROM lets students explore the interaction between microscopic bacteria and humans. Build a colony of bacteria, write about the issue of biological warfare, learn about the overuse of antibiotics, or read encyclopedia articles about bacteria. Have students do a database activity with gram-positive and gram-negative bacteria.

**CD-ROM \$111,000**

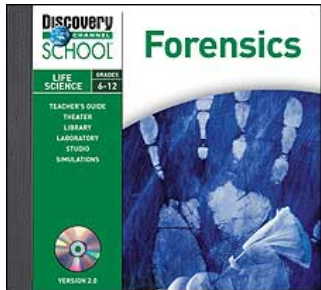


## 2. Forensics

Become a crime scene investigator. You'll sort data and run tests to determine the chemical makeup of evidence and decide on the importance of items. Video

Adventures include Crime Scenes, DNA, Forgery, Mummies, and Arson.

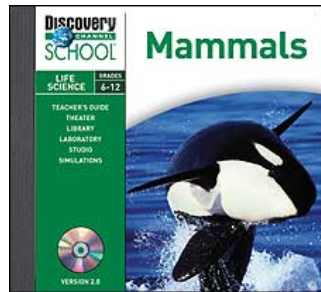
**CD-ROM \$111,000**



## 3. Mammals

Got milk? If a species nurses its young and has hair on its body, it's a mammal—among the world's most interesting animal groups. Expand your student's understanding of mammals with this interactive CD-ROM. Visit the Laboratory to observe and write about mammals, watch documentary footage about mammals at the Discovery Theater, or go to the Library to do research. Video Adventures including Introducing Mammals, Bears, Modern Whale Hunters, African Cats, and Wolves.

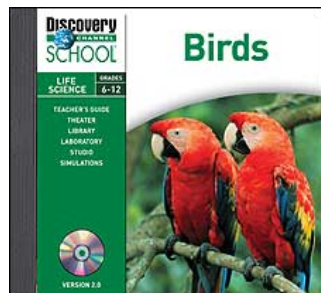
**CD-ROM \$111,000**



## 4. Birds

Birds are even more fascinating when your students can learn about them on this incredible, interactive CD-ROM. Students can visit the Library to read more about predatory and tropical birds. Explore 10,000-mile migrations in the Laboratory. Create a multimedia presentation about the evolution of birds.

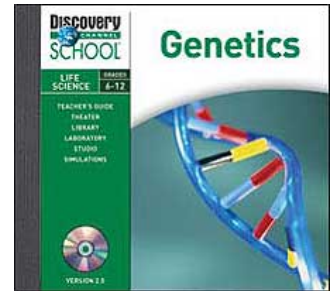
**CD-ROM \$111,000**



## 5. Genetics

Genetics goes far beyond the lab. If the Punnett square—and monohybrid crosses—didn't interest your class, this interactive CD-ROM will. Build a model of meiosis, analyze data related to genetic diseases, write about the ethics of cloning, or solve a crime using the science of forensics! When you bring the modern uses of genetics to your kids, you can cover some of its ethical controversies in your class.

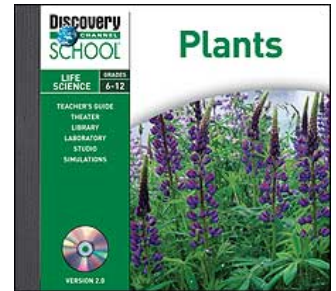
**CD-ROM \$111,000**



## 6. Plants

Explore the integral role plants play in our lives as food and medicine. Video Adventures include Plant Reproduction, Plants in Space, Rainforest Plants, Trees, and Survival in Extremes.

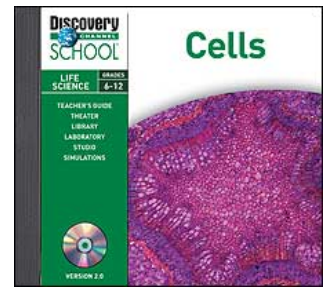
**CD-ROM \$111,000**



## 7. Cells

Discover the diversity of single-celled organisms, then compare them to complex plant and animal cells. Video Adventures include: Cells; Blood Cells; Skin; Fighting Cancer; and Cells from Hell.

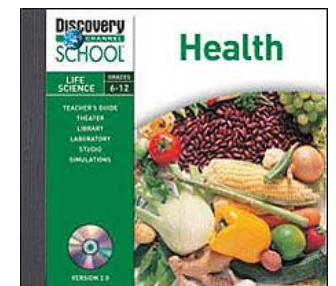
**CD-ROM \$111,000**



## 8. Health

How healthy are we in the U.S.? Investigate disease patterns, genetics, and environmental factors using a database and sorting program. Video Adventures include: Teen Brains, Healthy Skin, Nutrition, Hormones, and Leukemia.

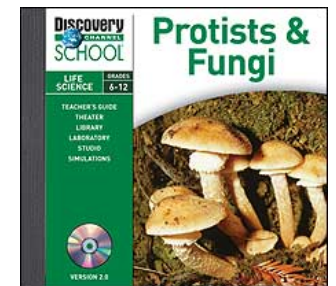
**CD-ROM \$111,000**



## 9. Protists & Fungi

Discover what fungi and plants have in common using a Venn diagram. Dig up the connection between appearance and toxicity in mushrooms. Video Adventures: Symbiosis, Malaria, Fungus Farmers, Protozoa, and Molds and People.

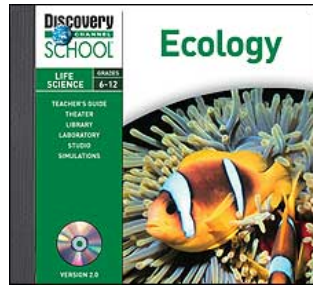
**CD-ROM \$111,000**



## 10. Ecology

The Grand Canyon and Yosemite. Rainforests and deserts. Predators and prey. These diverse subjects are all explored in depth in this must-have interactive CD-ROM that makes ecology eminently interesting. Let your students view five Video Adventures. Research ecosystems and biomes in the online World Book Library. Perform a number of hands-on explorations, including species, habitat, and niches. Create multimedia presentations on a range of ecological topics, and much more!

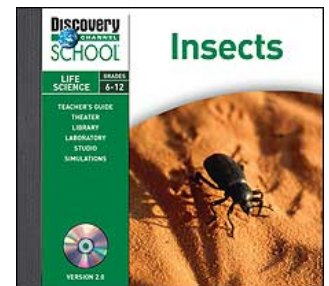
**CD-ROM \$111,000**



## 14. Insects

Learn insect behaviors and characteristics, and explore the role they play in an ecosystem. Video Adventures include Social Insects, Insect Locomotion, Insect Evolution, and Deadly Insects.

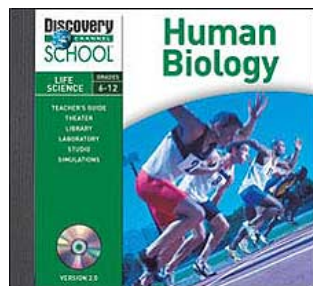
**CD-ROM \$111,000**



## 11. Human Biology

Try this interactive CD-ROM for your biology unit. It offers tons of great stuff about what makes the human body click. Let your students watch Video Adventures on Introducing Human Biology, plus four others. Are they feeling nervous? They won't be after exploring the Nervous System, Endocrine System, Respiratory System, Bones, Skin, and Muscles. Research articles on everything from anemia to zygotes. Do seven hands-on lab experiments.

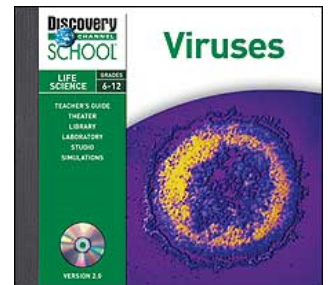
**CD-ROM \$111,000**



## 15. Viruses

How do you get students involved in something they can't even see? Let this interactive CD-ROM help with 25 minutes of stunning video clips and amazing footage. Visit the Laboratory and create a Venn diagram about different viral properties, go to the Studio to create a multimedia presentation with music and sound effects, and watch and learn about the nature of viruses at the Discovery Theater.

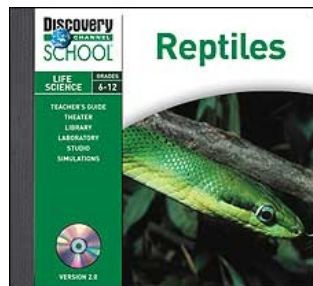
**CD-ROM \$111,000**



## 12. Reptiles

This interactive CD-ROM can take your class on reptile journeys as they watch original Discovery Channel videos. Lead them into the enchanting Florida Everglades and South America's steamy rainforests, then trek to Africa's Nile River and Southeast Asia. Compare human and lizard locomotion, observe and write about a snake at lunch, and create a video or slideshow presentation of your favorite reptiles.

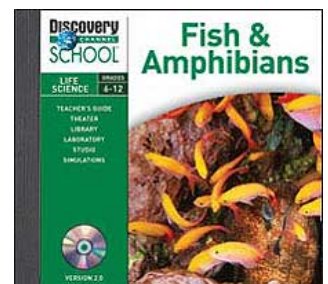
**CD-ROM \$111,000**



## 16. Fish & Amphibians

Discover the differences between fish and amphibians, and their relationship in the marine ecosystem. Video Adventures include Sharks, Salmon, Mudskippers, Frogs, and Catching Food.

**CD-ROM \$111,000**



## 17. Invertebrates

Dive into the ocean to observe which marine animals are vertebrates and which are invertebrates. Are there other types of animals as well? Video Adventures include Spiders, Octopus, Jellyfish, and Giant Squid.

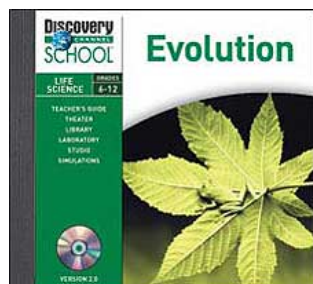
**CD-ROM \$111,000**



## 13. Evolution

On the evolutionary scale, we are but a grain of sand in all the deserts of the world. This CD-ROM brings evolution into perspective. Video Adventures include Introducing Evolution, Adaptations and the Galapagos, Darwin, Elephant Evolution, and Fossil Hunter.

**CD-ROM \$111,000**

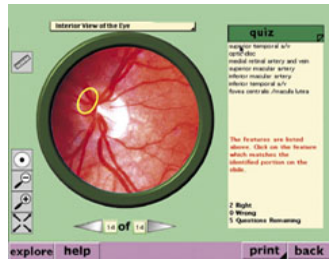


**Life Science Bundle /17CDs \$1,334,000**

## Animal Cells & Tissues

*Provide your class with a "virtual" library of interactive microscope slide images*

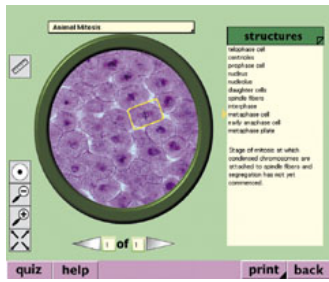
Features a comprehensive set of interactive microscope slide images that offer a detailed view of the fascinating world of animal cells and tissues. These engaging images can be magnified, manipulated and measured - just like with a traditional microscope - and are accompanied by supporting text and video clips. The program also offers the flexibility to choose from either tutorial, assessment or lecture modes. Features dozens of magnifiable images of live and prepared specimen material which include Invertebrates, Insect Structures, Vertebrate Tissues, Frog Development and Human Sex Indicators including Human Male/Female Chromosomes, Squamous Epithelium, and Peripheral Blood Film. Includes three video loops of Hydra, Planaria & Daphnia.



## Mitosis & Meiosis(Plant & Animal)

*View dramatic microscopic images of cell division on your computer!*

Features dozens of dual-magnification images providing a detailed overview of mitosis and meiosis in both plants and animals. Includes stunning microphotography, complemented by authoritative reference text. Mitotic stages are represented by magnified imager which allows students to observe clear cytologic detail in the onion root tip and whitefish blastodisc. Meiosis is illustrated using the lily and grasshopper testis.

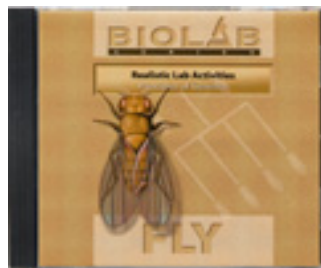


CD-ROM ₩89,000

## BIOLAB - FLY

*An interactive approach to the genetics of Drosophila*

Introduce your class to Mendelian genetics with a realistic computer simulation. Your students will identify the genotype of a pair of fruitflies, build a Punnett square and predict the characteristics of their offspring. Then, they'll actually breed the two parent flies to verify their prediction! The students will then use the genetic principles learned to conduct other experiments that explore how 26 specific genetic traits are transmitted.



CD-ROM ₩89,000

## BIOLAB - Cat

Provides a detailed overview of the feline anatomy to include external features, musculature, internal organs and the skeletal system. With a click of the mouse, your students will access an interactive anatomy providing them with a unique view of the specimen.

CD-ROM ₩89,000

## Biology & Chemistry of Living Things

*Conduct virtual experiments on key chemical reactions & processes in living cells!*

Your class will gain a better understanding of living things and how they function through a detailed overview of the fundamental principles of chemistry. In the virtual lab, they'll explore how enzymes respond to changing environments and how they affect chemical reactions in living cells. They'll also explore the energy requirements of living organisms; the activity of biological catalysts; and the structure and function of the "molecules of life"—carbohydrates, proteins, lipids and nucleic acids. Fully narrated, animated tutorial provides complete coverage of the key biochemistry concepts which are essential to all life processes. Students can test their comprehension using the unique assessment function which features practice and test modes. Also included is a teacher's resource section which allows you to create customized lessons, tests and presentations.

CD-ROM ₩149,000

## Key to Kingdoms & Phyla

*Learn as you investigate taxonomic relationships for the Five Kingdoms of life*

An invaluable biodiversity resource as both a reference and teaching tool! Contains a vast database of over 300 images complete with extensive background information. The unique, random-access architecture allows your students to make use of this information at any level, using any taxonomic characteristic to identify any unknown organism. Also serves as a powerful learning tool that allows students to explore taxonomy quickly and easily - without prior knowledge of the five kingdoms.

CD-ROM ₩119,000

## Plants

*A comprehensive look at plants*

Access a wealth of information on forms from every major group of vascular and nonvascular plants. Includes details on plant microanatomy; external and internal structures; life cycles; and processes such as growth, transpiration and photosynthesis. Unique "Topic Locator" allows your students to find specific information quickly and easily. Contains over 200 images covering over 75 different plants. Also contains unique animation graphics detailing photosynthesis.



CD-ROM ₩119,000

## Virtual Plant

*Observe and control plant growth - in a "virtual" garden!*

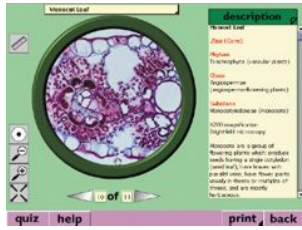
Perform experiments in hours that would normally take weeks to complete! By growing their own "virtual" plant, your students will learn about all aspects of plant structure and function, including xylem, phloem, photosynthesis, geotropism and phototropism. Interactive program allows students to vary environmental factors such as light and carbon dioxide to control the growth and behavior of their plant while they gain invaluable insight into plant biology.

CD-ROM ₩119,000

## Plant Diversity

### *Explore the microanatomy of plants!*

Outfit your class with a complete set of interactive microscope slide images on CD-ROM. These stunning photos can be magnified, manipulated and measured - just like with a traditional microscope! The images are accompanied by supporting reference text and can be operated from either tutorial, assessment, or lecture modes. Offers scores of live and prepared specimen material at two resolution options, including Plant Cytology, Lower Plant Life Histories, Plant Adaptations, Angiosperm Microanatomy and Monocot and Dicot Structure. **CD-ROM ₩89,000**



## Microanatomy of Insects

### *An interactive view of the world of insects!*

Learn about insect structure and function with this comprehensive set of interactive digital microscopic slide images. These fascinating images can be magnified, manipulated and measured - just like with a traditional microscope! Each image is accompanied by supporting reference text and callouts. Images and text can be printed for use in presentations, reports, tests and handouts. Your students will view the external and internal microanatomy of a host of insect types from eight different orders. In the process, they will discover how insects walk, breathe, fly, see, sense and reproduce!

**CD-ROM ₩89,000**

## From Egg to Tadpole

### *Follow the remarkable journey to life!*

Your class will be amazed by this dramatic video chronology of the tadpole's development. Using time-lapse photography to compress events that take hours or even days into mere seconds, the students will view the major events of the embryogenesis of the African toad *Xenopus*. The spectacular video covers the initial cycle of cell division; gastrulation; neurulation; elongation of the embryo and its escape from the egg membrane; and the ultimate transformation of the simple embryo into a tadpole. Easy-to-understand video is a must for every life science and biology class! 20 minutes. **VIDEO ₩89,000**



## Human Disease - Common Health Problems

### *View the microanatomy of disease!*

Provide your class with a comprehensive set of interactive digital microscope slide images which can be magnified, manipulated and measured - just like with a traditional microscope! These stunning photos are accompanied by supporting reference text. The unique program can be operated in either tutorial, assessment, or lecture modes. Features scores of dual-resolution microscope images of live and prepared material including Normal and Diseased tissues involving Cervical Cancer, A Cirrhosis, Breast Cancer, Appendicitis, Pneumonia, Leukemia, Mononucleosis, Anemia, Myocardial Infarction, Atherosclerosis, and Lyme Disease including Vector and Spirochete. Also includes microscopic images of Vectors such as the Flea, Head Louse, Bed Bug

and Tick; Parasites to include Tapeworm, and Liver Fluke; and AIDS-opportunistic organisms including *Pneumocystis* and *Cryptosporidium*. **CD-ROM ₩89,000**

## Building Food Webs

### *An easy-to-understand, fun exploration of this vital concept*

Now your students can create and customize their own food webs - on their computer! Interactive program allows them to observe the impact of a change in one population on all others in a web. They'll also discover the transfer and loss of biomass and energy between organisms. By manipulating a host of variables, your class will quickly and easily learn about and understand the different factors that affect real food webs - simple or complex - in the environment.

**CD-ROM ₩119,000**



## AP Biology : Diffusion & Osmosis

### *Model osmosis & diffusion—in your lab and on your computer!*

Using a realistic, interactive lab environment, your students will recreate the activities from the hands-on investigation on their computer! They'll conduct the following interactive simulations— 1a. Diffusion 1b. Osmosis 1c. Water Potential 1d. Calculation of Water Potential from Experimental Data 1e. Onion Cell Plasmolysis Comprehensive, narrated tutorials provide extensive background information on all of the key concepts related to osmosis and diffusion while the unique "Take-A-Test" feature allows your students to assess their comprehension.

**CD-ROM ₩149,000**



## AP Biology : Cell Respiration

### *Measure the rate of cell respiration*

Your students will use the supplies in a simulated lab environment to measure the rate of cell respiration in ungerminated versus germinated seeds under various conditions and then determine the ideal conditions for cellular respiration. Features a detailed series of tutorials covering cell respiration as well as a unique assessment section for testing comprehension.

**CD-ROM ₩149,000**



## AP Biology : Transpiration

### *Accurately measure water loss in plants—in the lab and on the computer!*

Your students will measure transpiration in plants under various environmental conditions. They'll also prepare microscope slides of thin sections of a stem to study its organization and identify the structures used by plants to transport water and nutrients from the roots to the leaves—all on their computer! They'll conduct the following simulations— 9a. Transpiration 9b. Structure of a stem Features exhaustive coverage of plants, their structure and function as well as a unique tutorial section featuring practice and test modes.

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# Plant Hort Science

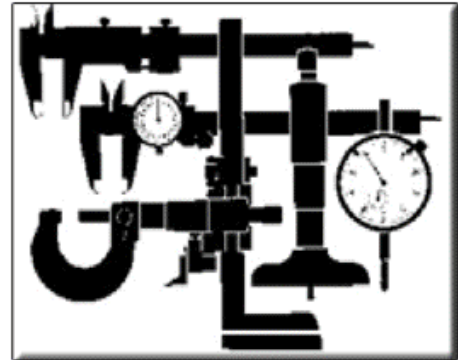
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## Landscape, Environment & Ecology



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