

## 2011-2012 WHRO VideoClassroom Preview

<b>Series Title:</b>	<b>Core Biology</b>
<b>Curriculum Area:</b>	<b>Science</b>
<b>Grades:</b>	<b>7-12</b>
<b># of Programs/Length:</b>	<b>4/30:00 minute programs</b>

Biology, the science of life, is among the oldest of scientific disciplines. Beginning 2500 years ago in ancient Greece with the founding of Botany and Zoology, Biology in the 21st century has grown to include Environmental Sciences, Microbiology and Genetics. These are key disciplines to understanding our modern world. Core Biology is an innovative, conceptual approach to the study of Biology. Discoveries, concepts and laws are laid out in chronological order, each naturally building on the last. Stunning micro-cinematography and graphics bring this remarkable series to life.

### 1.) Animal Sciences (15:00 Preview Segment)

An exciting ride through the world of animal classification, physiology, behavior, and communication. Today the Animal Sciences, Zoology, form the knowledge basis for such diverse disciplines as human physiology and nutrition ... Genetics and animal breeding ... And the exciting field of wildlife ecology. For the first time the scientific discoveries that provide insight into the nature of animal classification, physiology and behavior are brilliantly brought together in one program. Arranged chronologically, each discovery is presented with clear graphics and brilliant High Definition footage.

Segments:

- 350 B.C. – Aristotle Founds Zoology
- 1735 – Carlos Linnaeus Begins The Modern Description Of Life
- 1796 - Comparative Anatomy
- 1826 – All Animal Life Begins With An Egg
- 1838 - The Cellular Basis Of Life
- 1859 - The Theory Of Evolution
- 1969 – The Five Kingdoms Of Life
- 1973 –The Science Of Animal Behavior
- 1998 – Principles Of Animal Communication

### 2.) Environmental Sciences

The wonders of ecology and ecosystems revealed. A seminal moment in mankind's history occurred when in 1949 Aldo Leopold announced the concept of a land ethic: "We are all part of the greater interconnected whole of plants animals and microorganisms." Out of this pronouncement was born the new science of environmental studies. Since then, great strides have been made in understanding the web of life, and our dependence on the health of the environment we live in. Core Biology: Environmental Sciences is the story of the creation of this new biological discipline, which includes the study of ecosystems and the blossoming of the environmental system.

Segments:

- 1920 – Biomes
- 1928 – The Theory Of Plant Succession
- 1949 – Ecology
- 1953 – Ecosystems
- 1957 – Ecology's Concept Of Niche
- 1969 – The Five Kingdoms Of Life
- 1979 – Gaia Hypothesis
- 1986 – Biodiversity

### 3.) Microbiology & Genetics

No biological sciences have more promise for the future of mankind than genetics and microbiology. Microbiology, which includes genetics, is the story of understanding how the cell works. All life is cellular life ... All animal and plant tissue is made up of cells ... All infectious diseases are caused by invading cells ... Cell division is the process of creating all complex life ... And all genetic material is contained within the cell. The many cellular processes and the remarkable micro-world are presented in stunningly clear micro-videography in Core Biology: Microbiology and Genetics.

Segments:

- 1673 – Anton Leeuwenhoek Describes Microscopic Life

1838 – The Cellular Basis Of Life  
1866 – Mendel's Laws Of Inheritance  
1878 – Germ Theory Of Disease  
1884 – The Structure Of Cells  
1884 – Mitosis And Cell Division  
1905 – Meiosis  
1911 – Genes  
1967 – The Symbiotic Cell

#### **4.) Plant Sciences**

Jared Diamond's central thesis in his bestselling book, *Guns, Germs and Steel*, is that the fate of human societies has always depended upon their skills as farmers ... This is what the plant sciences have always been about. Plant sciences or botany! No biological science has transformed society more than the successive waves of agricultural revolutions – new ways of growing more food. It started with the domestication of cereal crops – wheat, rice and corn. And in the 20th century, the green revolution has allowed nearly 7 billion people to live on the planet. The story of botany leads from the founding of agriculture and medicinal plants to understanding plant physiology and reproduction to the founding of genetics to finally understanding the miracle of photosynthesis. Plant sciences or botany! No biological science has transformed society more than the successive waves of agricultural revolutions – new ways of growing more food. It started with the domestication of cereal crops – wheat, rice and corn. And in the 20th century, the green revolution has allowed nearly 7 billion people to live on the planet. The story of botany leads from the founding of agriculture and medicinal plants to understanding plant physiology and reproduction to the founding of genetics to finally understanding the miracle of photosynthesis.

Segments:

323 B.C. – Theophrastus Founds Botany  
1682 - Plant Physiology  
1694 - How Plants Reproduce  
1838 - The Cellular Basis Of Plant Life  
1866 - Mendel's Laws Of Inheritance  
1886 - Nitrogen-Fixing Of The Pea Family Is Explained  
1946 – Photosynthesis  
1969 – The Five Kingdoms Of Life