

## BIOLOGY IN A BOX

<http://eeb.bio.utk.edu/biologyinbox/default.htm>

### What is Biology in a Box?

A fun and challenging way for entire schools to enhance their life sciences curriculum at all grade levels, and to encourage student interest in STEM (science, technology, engineering, and mathematics) disciplines. The program employs a hands-on, inquiry-based approach to teach the wonders of the living world, as well as introducing the scientific methods and math skills we use to understand that world

Each thematic unit has exercises that are designed to enrich science curriculum content for students from the elementary grades through high school, with exercises often having separate versions for both lower and higher grades, though most exercises are easily tailored to fit any grade level. The goal of each unit is to pique the interest of even low-ability students on a particular biological theme. The more advanced activities in a thematic unit, furthermore, have been designed as curriculum enrichment for very bright students who need a challenge.

The program is especially valuable to teachers in schools that have limited resources for extra materials. The materials needed for completion of the exercises, presented in each thematic trunk, are totally reusable and are generally not commercially available. It is also an excellent program for schools with a limited science faculty, since no prior knowledge of the subject matter is needed for a teacher to explore a box theme with his or her students.

### The Vols Teach Instructional Materials Library Inventory Includes the Following Units:

<b>Unit 1: Fossils</b>	The fossil record, identification of fossils, fossil dating methods, change in organisms over time
<b>Unit 2: Of Skulls &amp; Teeth</b>	Functional anatomy, the skeletal system, diet types, adaption
<b>Unit 3: Fur, Feathers, Scales: Insulation</b>	Insulating mechanisms of various organisms (mammals, birds, and reptiles), thermodynamics
<b>Unit 4: Simple Measures</b>	Physical properties of objects (mass, volume, density, etc), Newtonian physics
<b>Unit 5: It's in Your Genes</b>	DNA, Mendelian genetics, mechanisms of inheritance, probability, interaction between genes
<b>Unit 6: Animal Kingdom</b>	Biodiversity, taxonomy (classification) of organisms, relationships between groups of organisms
<b>Unit 7: Backyard Naturalist</b>	A closer look at organisms of Tennessee, learning to identify animal signs such as scats, tracts, bird songs, etc.
<b>Unit 8: Everything Varies</b>	Variability in the natural world, basic statistics (such as the mean, median, mode, standard deviation, and variance), comparing populations
<b>Unit 9: Forestry</b>	The trees of Tennessee, and their wildlife and economic importance
<b>Unit 10: Behavior</b>	Animal Behavior, sensory capabilities, the scientific method, mimicry and protective coloration, animal communication, analyzing behavior, learning and memory, environmental stimuli and behavioral responses