



## Basic Biology B: Full Course Summary

Note: If this course is intended to be a Credit Recovery course, the following assumptions apply:

- This course is a core course at the “Basic” level in Connections Academy’s system, which titles courses as Basic, Standard, Honors, or Advanced Placement (AP).
- The student has previously taken this or a similar course but did not achieve a passing grade based on his/her school’s grading scale.
- This course will be modified by the teacher in order to skip over areas in which the student shows understanding of the material, leaving more time to focus on gaps in the student’s knowledge or understanding.
- Because Credit Recovery courses will be shortened and/or modified based on individual student needs, these courses are generally **not** appropriate for students who have **not** previously taken this or a similar course, nor for students wishing to accelerate their high school studies.

If a student wishes to take this course for the first time he/she will be expected to cover all material in the course without the above-noted modifications. Students must discuss this option with the NaCA Admission and Support Representative prior to enrolling in the course for the first time.

### Course Summary

This is the second of two courses that comprise Basic Biology. Throughout the semester, the student will be introduced to additional basic concepts in the field of biology. The Glencoe Science text, *Biology: the Dynamics of Life* provides the basis for the course content.

This course consists of varied curriculum that provides the student the opportunity to use virtual simulations to study the biology of different organisms and present scientific data. The student will study bacteria and viruses, identify the structures of plants, compare and contrast vertebrates and invertebrates, and investigate human body systems.

### Unit 1: Viruses, Bacteria, Protists, and Fungi

We can readily recognize plant and animal diversity because plants and animals are readily visible. However, much of life’s diversity exists in organisms that we do not see every day such as bacteria, protists, and fungi. In this unit you will examine and compare different types of bacteria, protists, and fungi. In addition, you will analyze the characteristics of viruses, nonliving things commonly confused with bacteria.

### Lessons

1. Viruses
2. Archaeobacteria and Eubacteria
3. The World of Protists
4. Algae: Plantlike Protists
5. Slime Molds, Water Molds, and Downy Mildews
6. What Is a Fungus?
7. Virtual Microscope Lab
8. Unit Review
9. Unit Test

## **Unit 2: Plants**

By now you probably know that plants are essential for most life on Earth. Not only do they provide food and energy for most organisms, they also supply life-sustaining gases. In this unit, you will study the characteristics and functions of a vast array of plants and analyze the similarities and differences among them.

### **Lessons**

1. Adapting to Life on Land
2. Survey of the Plant Kingdom
3. Nonvascular Plants
4. Non-Seed Vascular Plants
5. Seed Plants
6. Lab: Researching Trees on the Internet
7. Plant Cells and Tissues
8. Roots, Stems, and Leaves
9. Life Cycles of Mosses, Ferns, and Conifers
10. Flowers and Flowering
11. The Life Cycle of a Flowering Plant
12. Unit Review
13. Unit Test

## **Unit 3: Invertebrates: Part 1**

The majority of animals on Earth are invertebrates, or animals without backbones. These animals can exist almost anywhere on Earth—from the deepest crevices of the ocean floors to the steepest snow-covered mountain tops. In this unit, you will explore the variations that enable invertebrates to adapt to almost any environment and sustain almost any condition.

### **Lessons**

1. Typical Animal Characteristics
2. Body Plans and Adaptations
3. Sponges
4. Cnidarians
5. Flatworms
6. Roundworms
7. Unit Review
8. Unit Test

## **Unit 4: Invertebrates: Part 2**

Invertebrates are grouped according to their different characteristics. Mollusks, segmented worms, arthropods, and echinoderms are all invertebrates, but they exhibit different physical traits. In this unit, you will compare and contrast these different groups of invertebrate organisms.

## **Lessons**

1. Mollusks
2. Segmented Worms
3. Characteristics of Arthropods
4. Diversity of Arthropods
5. Echinoderms
6. Virtual Squid Dissection Lab
7. Unit Review
8. Unit Test

### **Unit 5: Vertebrates: Part 1**

Humans have many biological, social, and cultural ties with other vertebrates, or animals with backbones. Some people keep vertebrates, such as birds, fish, dogs, and cats, as pets. Many people rely on milk, eggs, and leather, which are the products of vertebrates. Some view specific vertebrates, cows for instance, as religious or cultural symbols. In this unit, you will explore the characteristics, adaptations, and behaviors of various types of vertebrates.

## **Lessons**

1. Fishes
2. Amphibians
3. Reptiles
4. Birds
5. Virtual Frog Dissection Lab
6. Unit Review
7. Unit Test

### **Unit 6: Vertebrates: Part 2**

Humans have many biological, social, and cultural ties with other vertebrates, or animals with backbones. Some people keep vertebrates, such as birds, fish, dogs, and cats, as pets. Many people rely on milk, eggs, and leather, which are the products of vertebrates. Some view specific vertebrates, cows for instance, as religious or cultural symbols. In this unit, you will explore the characteristics, adaptations, and behaviors of various types of vertebrates.

## **Lessons**

1. Mammal Characteristics
2. Diversity of Mammals
3. Innate Behavior
4. Learned Behavior
5. Unit Review
6. Unit Test

### **Unit 7: The Human Body: Part 1**

The human body is a complex system of chemicals, organs, vessels, and connectors that enable people to compete in soccer games, solve algebra problems, and make decisions about how to

spend their free time. In this unit, you will analyze the major systems of the human body and examine how they interact with one another.

### **Lessons**

1. Skin: The Body's Protection
2. Bones: The Body's Support
3. Muscles for Locomotion
4. Lab: Does Fatigue Affect the Ability to Exercise?
5. Following Digestion of a Meal
6. Nutrition
7. The Endocrine System
8. Unit Review
9. Unit Test

### **Unit 8: The Human Body: Part 2**

The human body is a complex system of chemicals, organs, vessels, and connectors that enable people to compete in soccer games, solve algebra problems, and make decisions about how to spend their free time. In this unit, you will analyze the major systems of the human body and examine how they interact with one another.

### **Lessons**

1. The Nervous System
2. The Respiratory System
3. The Circulatory System
4. The Urinary System
5. Human Reproductive Systems
6. Unit Review
7. Unit Test

### **Unit 9: Final Review and Exam**

In this unit, you will have the opportunity to prepare for and take the final exam. The final exam may include any material that has been presented throughout the semester. Since this is a comprehensive exam, it may be helpful to organize your notes and answers to questions in your science journal before you begin to review.

### **Lessons**

1. Biology B Final Review
2. Biology B Final Exam

National Connections Academy 1001 Fleet St. 5<sup>th</sup> Floor Baltimore MD 21202

Toll-free 877-804-NACA (6222)

[www.connectionsacademy.com/national](http://www.connectionsacademy.com/national)

nacaadvisor@connectionsacademy.com