# BIOLOGY SCOPE AND SEQUENCE

<table>
<thead>
<tr>
<th>UNIT</th>
<th>MAJOR TOPICS</th>
<th>TEXT LOCATION</th>
<th>TIME</th>
<th>SUGGESTED ACTIVITIES</th>
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</thead>
<tbody>
<tr>
<td>Introductory Work</td>
<td><strong>Chapter 1: Exploring Life</strong></td>
<td>Chapter 1 (All Levels)</td>
<td>10 days</td>
<td>Scientific Method Lab</td>
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<td>UNIT 1: Ecology</td>
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<td>15 days</td>
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<td></td>
<td>* The Biosphere and Biomes</td>
<td>Hon 34.1 -34.5 CP 3.1, Chapter 4.2 pages 90-91, 4.3</td>
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<td>Biomes Project</td>
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<td></td>
<td>* Population Ecology</td>
<td>Hon 36.1-2, 36.4-5 CP Chapter 5.1 &amp; 5.2</td>
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<td>Mercury in Fish Task</td>
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<td></td>
<td>* Communities and Ecosystems</td>
<td>Hon 37.1, 37.2, 37.4, 37.6, 37.9 - 37.13 CP 4.2, pages 92-93, 3.2, 3.3</td>
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<tr>
<td>SCIENCE FAIR</td>
<td>Introduction and Pass Out Materials</td>
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<tr>
<td>UNIT 2: Life of the Cell</td>
<td><strong>The Chemistry of Life</strong></td>
<td>Hon all Chapter 2 CP 2.1, 2.2</td>
<td>8 days</td>
<td>pH Lab</td>
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<tr>
<td></td>
<td>* Elements, Atoms, Molecules</td>
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<td></td>
<td>* Chemical Bonds</td>
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<td>* Water's Life Supporting Properties</td>
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<td>* pH</td>
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| **Molecules of Cells** | * Introduction to organic compounds  
  * Carbs, Lipids, Proteins, Nucleic Acids | Hon all Chapter 3  
 CP 2.3 | 13-15 days | Lipid Lab or Identifying Macromolecule Lab  
 Building Macromolecules |
| **Energy in the Cell** | * Chemical Reactions  
  * Enzymes | Hon 5.5 - 5.8  
 CP 2.4 | 5 days | Enzyme Lab |
| **Tour of the Cell** | * Introduction to the cell  
  * Microscopy  
  * Cell organelles - Structure and Function | Hon all Chapter 4  
 CP all Chapter 7 | 20 days | Microscope Lab  
 Cheek cell lab |
| * Cellular respiration  
  * Fermentation  
  * Overview of Photosynthesis | Hon 6.1 - 6.3, 6.6, 6.12, 6.13, 7.2, 7.3, 7.5  
 CP 9.1 and page 229, 8.1 - 8.2 | 7 days | Respiration or Photosynthesis Lab |
| * Cell Membrane Structure  
  * Passive and Active Transport | Hon 5.10 - 5.20  
 CP 7.3 | 10 days | Osmosis Lab |
| **UNIT 3: Cellular Reproduction and Genetics** | | Approx. 45 days | | |
| **Cell Division** | * Cell Cycle  
  * Mitosis  
  * Meiosis and Crossing Over  
  * Cancer | Hon 8.1 - 8.16  
 CP all chapter 10 and 11.4 | 15 days | Onion Root Tip Mitosis Lab |
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| **Patterns of Inheritance** | Mendel's Laws  
Variations of Mendelian Genetics  
Gene Linkage  
Genetic Diseases  
CP 11.1 - 11.3, 11.5, 14.1, 14.2 | 15 days | Corn Genetics Lab  
Karyotyping Activity |

| **Molecular Biology of the Gene** | * Structure of genetic material  
* DNA Replication  
* Protein Synthesis | Hon 10.1 - 10.16  
CP all Chapter 12 | 15 days | Building DNA molecules  
DNA Extraction Lab |

| **UNIT 4: Concepts of Evolution** | | | 8 days | |

| **How Populations Evolve** | * Darwin’s Theory of Evolution  
* Evidence of Evolution  
* Evolution of Populations | Hon 13.1 - 13.4, 14.8, 13.16  
CP 15.1, 15.3 pages  
380-386, 16.2 pages  
398-399, page 436 | |

| **Tracing Evolutionary History** | * Early Earth and the Origin of Life  
* Geologic Timescale  
* Phylogeny and the Tree of Life | Hon 15.7 - 15.8  
CP pages 421-422, 18.2 | |