STANDARD I: The student will understand concepts dealing with the nature of science.

OBJECTIVE
1. Analyze the methods of science used to identify and solve problems.

ELIGIBLE CONTENT
- Use process skills to interpret data from graphs, tables, and charts.
- Identify and distinguish between controls and variables in a scientific investigation.
- Identify safe laboratory procedures when handling chemicals, using Bunsen burners, and using laboratory glassware.
- Identify and use appropriate Systeme International (SI) units for measuring dimensions, volume, and mass.
- Define and identify examples of hypotheses.
- Order the proper sequence of steps within the scientific process.
- Select appropriate laboratory glassware, balances, time measuring equipment, and optical instruments to conduct an investigation.

STANDARD II: The student will understand concepts dealing with matter.

OBJECTIVE
1. Trace the transfer of matter and energy through biological systems.

ELIGIBLE CONTENT
- Identify, define, and distinguish among producers (autotrophs), consumers, and decomposers (heterotrophs).
- Trace the flow of energy through food chains, food webs, and energy pyramids.
- Identify the reactants and products associated with photosynthesis and cellular respiration and the purpose of these two processes.
- Describe the carbon, nitrogen, and water cycles—including transpiration and respiration.

STANDARD II: The student will understand concepts dealing with matter.

OBJECTIVE
2. Relate particle motion to the states of matter (solids, liquids, and gases).

ELIGIBLE CONTENT
- Identify states of matter in terms of molecular (particle) movement, density, and kinetic energy associated with each phase/state of a given type of matter.

STANDARD II: The student will understand concepts dealing with matter.

OBJECTIVE
3. Apply information from the periodic table and make predictions using the organization of the periodic table.
ELIGIBLE CONTENT
- Determine the number of protons, neutrons, electrons, and mass of an element using the periodic table.
- Use the periodic table to identify and locate metals, nonmetals, metalloids, and noble gases.
- Use data about the number of electrons in the outer electron shell of an atom, including simple dot diagrams, to determine its stability/reactivity and be able to predict ionic charge resulting from reactions.

STANDARD II: The student will understand concepts dealing with matter.

OBJECTIVE
4. Identify how factors affect rates of physical and chemical changes.

ELIGIBLE CONTENT
- Demonstrate knowledge that some factors and substances can affect the rate at which physical and chemical changes occur in living and nonliving systems—such as the digestive process.

STANDARD III: The student will understand concepts of the diversity of life.

OBJECTIVE
1. Distinguish among the taxonomic groups by major characteristics.

ELIGIBLE CONTENT
- Recognize the correct sequence or taxonomic classification of organisms from the most inclusive level to the least inclusive level—may include use of a chart to compare two species and to identify the classification level at which one species no longer shares common characteristics with other species.
- Classify organisms into the five kingdoms based on recognizing two or more characteristics associated with organisms in a given kingdom.
- Recognize properly written scientific names using binomial nomenclature.

STANDARD III: The student will understand concepts of the diversity of life.

OBJECTIVE
2. Differentiate structures, functions, and characteristics of plants.

ELIGIBLE CONTENT
- Identify various plants as being vascular or nonvascular and describe the basic mechanisms by which vascular and nonvascular plants sustain themselves.
- Identify the distinguishing characteristics of angiosperms and gymnosperms in terms of their structures and reproduction.
- Identify reproductive structures and their functions in angiosperms.
- Demonstrate knowledge of which characteristics/traits would be best suited for plants growing in different environments and/or exposed to different pests.

STANDARD III: The student will understand concepts of the diversity of life.

OBJECTIVE
3. Differentiate structures, functions, and characteristics of animals.

ELIGIBLE CONTENT
- Distinguish characteristics of vertebrates and invertebrates in terms of a broad but basic range of physical and reproductive traits.
- Explain how animals are adapted to their environment—such as protective coloration, mimicry, claws, beaks, etc.
STANDARD IV: The student will understand concepts of heredity.

OBJECTIVE
1. Recognize heritable characteristics of organisms.

ELIGIBLE CONTENT
- Identify physical traits that are passed from parents to offspring.
- Recognize how genetic traits including diseases and disorders are passed from one generation to the next—may include family pedigrees and monohybrid Punnett squares.
- Identify what happens to the DNA code when a mutation occurs and identify the major causes of mutations.
- Recognize and evaluate the harms and benefits that result when mutations occur.

STANDARD IV: The student will understand concepts of heredity.

OBJECTIVE
2. Explain how the DNA molecule transfers genetic information from parent to offspring.

ELIGIBLE CONTENT
- Describe the relationships among DNA, genes, and chromosomes.
- Describe in basic terms the structure and function of DNA.
- Define the genetic purpose for meiosis from generation to generation.
- Define and distinguish between dominant and recessive genes and how each is expressed in parents and offspring.

STANDARD V: The student will understand concepts of cells.

OBJECTIVE
1. Distinguish relationships among cell structures, functions, and organization in living organisms.

ELIGIBLE CONTENT
- Define and identify representations of diffusion and osmotic systems and what substances are transported by these processes—may include graphic representations.
- Recognize differences between active and passive transport of substances and the energy requirements associated with these transport systems.
- Identify and define similarities and differences between plant and animal cells.
- Classify organisms as prokaryotic or eukaryotic; identify and define similarities and differences between prokaryotic and eukaryotic cells.
- Describe cell locomotion by means of cilia and flagella and recognize some organisms that depend on one or the other of these means of locomotion.
- Identify cell organelles and define functions of cell organelles—may include graphic representations.
- Distinguish and identify examples of cellular organization at the cell, tissue, organ, system, and organism level.

STANDARD V: The student will understand concepts of cells.

OBJECTIVE
2. Differentiate between mitosis and meiosis.

ELIGIBLE CONTENT
- Define, contrast, and compare mitosis and meiosis—may include events needed to prepare the cell for these processes.
- Describe the purpose of mitotic and meiotic divisions during different life stages of organisms—such as asexual and sexual reproduction and growth and repair.
STANDARD VI: The student will understand concepts of interdependence.

OBJECTIVE
1. Demonstrate an understanding of factors that affect the dynamic equilibrium of populations and ecosystems.

ELIGIBLE CONTENT
- Describe the harmful/beneficial consequences of introducing a non-native species into an ecosystem.
- Identify species that are competing for resources and predict outcomes of that competition.
- Identify and define biotic and abiotic components of different environments.
- Determine how viruses, bacteria, and parasites affect the dynamic equilibrium of populations.
- Identify human activities that affect the dynamic equilibrium of populations and ecosystems.
- Identify factors and relationships—such as predator/prey—that affect population dynamics and ecosystems.
- Explain why diversity within a species is important and how heritable traits ensure survival.

STANDARD VII: The student will understand concepts of energy.

OBJECTIVE

ELIGIBLE CONTENT
- Describe how energy—mechanical, electrical, chemical, light, sound, and heat—can be transformed from one form to another.
- Show understanding that energy transformations result in no net gain or loss of energy, but that in energy conversions less energy is available due to heat loss during the transformations.
- Apply the concept of conservation and transformation of energy within and between organisms and the environment—such as food chains, food webs, and energy pyramids.

STANDARD VIII: The student will understand concepts of force and motion.

OBJECTIVE
1. Relate Newton’s three laws of motion to real-world applications.

STANDARD VIII: The student will understand concepts of force and motion.

OBJECTIVE
2. Relate force to pressure in fluids.

ELIGIBLE CONTENT
- Relate force to pressure in fluids. (Note: Formulas will be provided, where needed, to calculate fluid force in closed systems.)
- Apply the concept of fluid pressure to biological systems—such as in strokes, aneurysms, the bends, blood pressure, lung function, equalization of pressure on the eardrum, and turgor pressure.
<table>
<thead>
<tr>
<th>CONTENT STANDARDS</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA COURSE OF STUDY SCIENCE</td>
<td>PROCESS AND APPLICATION</td>
<td>STANDARD I OBJECTIVE 1</td>
</tr>
<tr>
<td><strong>1.</strong> Understand fundamental assumptions about the universe upon which the scientific enterprise is based.</td>
<td>SE: 4-5, 6-11, 32-33, 42</td>
<td></td>
</tr>
<tr>
<td>- Concern with natural phenomena</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operation of the universe that is discoverable and understandable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Linkage of natural causes with natural effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operation of the universe that is consistent and predictable</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Discuss science as a body of knowledge and an investigative process.</td>
<td>SE: 6-11, 33-43 Minilab 33 Skill Handbook 887-889 TWE: MIN 35 CE 35 CD 38 PO 42</td>
<td>STANDARD I OBJECTIVE 1</td>
</tr>
<tr>
<td>- Unified, open-ended structure of observations set in a testable framework of ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Common purpose and philosophy among the science disciplines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Limited scope and certainty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Simple solutions, comprehensive results, clearest and reliable explanations, accurate basis for predictions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Identifying and framing the question carefully</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Forming a hypothesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Identifying and managing variables effectively</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Developing a practical and logical procedure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Presenting conclusions based on investigation/previous research</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong> Exhibit behaviors appropriate to the scientific enterprise consistently.</td>
<td>SE: 33-34, 35 Investigation 406-407, 856-857 Appendix H 929 Appendix I 930-931 TWE: 25T RT 42 AL 44-45</td>
<td>STANDARD I OBJECTIVE 1</td>
</tr>
<tr>
<td>CONTENT STANDARDS ALABAMA COURSE OF STUDY SCIENCE</td>
<td>PAGE REFERENCES</td>
<td>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------</td>
<td>---------------------------------------------------</td>
</tr>
</tbody>
</table>
| 5. Demonstrate correct care and safe use of instruments, equipment, and living organisms. | SE: 44
*Investigation* 120-121, 338-339, 452-453, 716-717
*Appendix H* 929
*Appendix I* 930-931
TWE: 25T
AL 44-45 | STANDARD I OBJECTIVE 1 |
| 6. Demonstrate the ability to choose, construct, and/or assemble appropriate equipment for scientific investigations. | SE: *Investigation* 36-37, 148-149, 258-259, 616-617
*Minilab* 122
TWE: AL 154-155, 546-547, 620-621 | STANDARD I OBJECTIVE 1 |
*Minilab* 47, 367, 433
*Thinking Lab* 102, 281, 494 | STANDARD I OBJECTIVE 1 |
| • Observing
• Classifying
• Measuring with appropriate units and significant figures
• Inferring
• Predicting
• Solving problems
• Interpreting data
• Designing experiments
• Formulating hypotheses
• Communicating | SE: 39
*Investigation* 148-149, 178-179, 204-205
*Review (Lab Interpretation)* 165
*Thinking Lab* 219
TWE: FCQ 39
CD 201
AL 208-209 | STANDARD I OBJECTIVE 1 |
| 8. Use mathematical models, simple statistical models, and graphical models to express patterns and relationships determined from sets of scientific data. | SE: *Investigation* 204-205
*Thinking Lab* 218 | STANDARD I OBJECTIVE 1 |
| 9. Solve for unknowns by manipulating variables. | SE: *Review (Lab Interpretation)* 165
*Investigation* 204-205
*Thinking Lab* 218
TWE: CD 201
AC 207 | STANDARD I OBJECTIVE 1 |
<table>
<thead>
<tr>
<th>CONTENT STANDARDS ALABAMA COURSE OF STUDY SCIENCE</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
</table>
| **10. Use written and oral communication skills to present and explain scientific phenomena and concepts individually or in collaborative groups using technical and non-technical language.** | SE: *Biology, Technology, and Society* 49  
*Global Connections* 99  
*Investigation* 148-149, 178-179, 616-617  
TWE: AS 37, 235, 659  
PR 58  
AL 74-75  
SJ 620 | STANDARD I OBJECTIVE 1 |
| **11. Choose appropriate technology to retrieve relevant information from the Internet such as electronic encyclopedias, indices, and databases.** | SE: *Biology, Technology, and Society* 162-163, 416-417  
*Global Connections* 292-293  
TWE: PR 17, 41, 358  
IC 55, 179  
PO 396  
*Note: Although not specifically suggested in some of the above activities, Internet resources could be used.* | STANDARD I OBJECTIVE 1 |
| **12. Analyze the advantages and disadvantages of widespread use of and reliance on technology.** | SE: 33  
*Biotechnology* 138, 271  
*Considering the Environment* 162-163  
*Issues* 244-245, 297-298  
*Minilab* 269  
TWE: MS 34  
SJ 269 | |
| **13. Practice responsible use of technology systems, information, and software such as following copyright laws.** | | |
| **14. Evaluate technology-based options for lifelong learning.** | | |
| **15. Identify the uses of technology in scientific applications.** | SE: 33, 44-45, 268-270, 288-289, 291-295  
*Biotechnology* 162, 299, 383, 606  
TWE: CD 45 | STANDARD I OBJECTIVE 1 |
*Skill Review* 766  
*Note: Calculators/computers not specifically called for but appropriate.* | STANDARD V OBJECTIVE 1 |
<table>
<thead>
<tr>
<th>CONTENT STANDARDS</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA COURSE OF STUDY SCIENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRUCTURE AND FUNCTION OF LIVING SYSTEMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Cell</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 17. Identify the basis of the cell theory. | SE: 90-91  
*Minilab 91*  
*Summary 114*  
TWE: WAS 91 | STANDARD V OBJECTIVE 1 |
*Summary 140*  
TWE: USCT 125  
PO 132  
DVB 136  
CD 395 | STANDARD V OBJECTIVE 1 |
| 19. Analyze the process by which cells become specialized even though DNA is identical in every cell within an organism. | SE: 172, 522-524  
*Thinking Lab 523* | STANDARD V OBJECTIVE 1 |
| 20. Relate cellular functions to specialized structures within cells.  
• Active and passive transport of materials (osmosis, diffusion)  
• Energy capture and release  
• Protein synthesis  
• Waste disposal  
• Information feedback  
*Minilab 100*  
*Investigation 104-105*  
TWE: CD 127  
RE 156  
SJ 160 | STANDARD V OBJECTIVE 1 |
| 21. Analyze factors that can affect cellular activities.  
• Molecular factors  
• Environmental factors  
• Structural factors | SE: 177-178, 261-263, 522-523  
*Investigation 36-37, 148-149*  
*Thinking Lab 156*  
TWE: DVB 523 | STANDARD V OBJECTIVE 1 |
| 22. Differentiate among cells undergoing the stages of mitosis and meiosis. | SE: 172-177, 183-187, 188  
*Investigation 178-179*  
TWE: AL 176-177  
CD 185  
UST 188  
DI 190 | STANDARD V OBJECTIVE 2 |
<table>
<thead>
<tr>
<th><strong>CONTENT STANDARDS</strong></th>
<th><strong>PAGE REFERENCES</strong></th>
<th><strong>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALABAMA COURSE OF STUDY SCIENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Matter, Energy, and Organization in Living Systems</strong></td>
<td>SE: 9, 13, 119-122, 313, 580-583, 786</td>
<td>STANDARD II OBJECTIVE 1</td>
</tr>
<tr>
<td>23. Identify the levels of organization of living things.</td>
<td>TWE: DE 8, PO 122, RE 123</td>
<td></td>
</tr>
<tr>
<td>• Cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tissues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Organs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Organisms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Analyze the flow of matter and energy through different trophic levels and between organisms and the physical environment.</td>
<td>SE: 17-18, 788-791</td>
<td>STANDARD II OBJECTIVE 1</td>
</tr>
<tr>
<td>• Food chain</td>
<td>TWE: PO 790, UST 791, DI 794</td>
<td></td>
</tr>
<tr>
<td>• Food web</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Food pyramid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Describe selected biogeochemical cycles.</td>
<td>SE: 791-792, 795</td>
<td>STANDARD II OBJECTIVE 1</td>
</tr>
<tr>
<td>• Water</td>
<td>TWE: CD 790, CE 792, SJ 792</td>
<td></td>
</tr>
<tr>
<td>• Carbon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nitrogen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Phosphorus</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIVERSITY AND ADAPTATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biological Evolution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identifying theoretical bases</td>
<td>TWE: DI 316, DQ 318, AL 318-319, RT 323, EX 323</td>
<td></td>
</tr>
<tr>
<td>• Identifying types of adaptations to environmental conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identifying theoretical mechanisms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Identify species by comparing molecular and anatomical evidence.</td>
<td>SE: 370-375, Minilab 377, Investigation 378-379, Thinking Lab 380</td>
<td>STANDARD III OBJECTIVE 1</td>
</tr>
<tr>
<td></td>
<td>TWE: AL 370, STS 373, MC 373, PO 375, SJ 377</td>
<td></td>
</tr>
<tr>
<td>CONTENT STANDARDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALABAMA COURSE OF STUDY SCIENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAGE REFERENCES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 28. Use taxonomic groupings to differentiate structures, life cycles, and major characteristics of each kingdom.
- **Nonvascular plants**
- **Vascular plants**
- **Gymnosperms**
- **Angiosperms**
- **Invertebrates**
- **Vertebrates**
- **Protista**
- **Fungi**
- **Monera (Bacteria)**

- **SE:** 376-381, 395-399, 401-409, 410-415, 422-430, 431-442, 450-462, 463-474
- **Appendix A:** 892-909
- **TWE:** UTI 381, PO 381

#### STANDARD III
**OBJECTIVE 1**

### 29. Discuss the relationships among organisms as the basis for biological systems of classification.

- **SE:** 366-375, 376-378
- **TWE:** UTI 371, PO 374

#### STANDARD III
**OBJECTIVE 1**

### 30. Understand why natural selection and genetic drift affect populations rather than individuals.

- **SE:** 322-323, 344-345
- **History Connection:** 286-287
- **TWE:** CFU 323, RT 323

#### STANDARD VI
**OBJECTIVE 1**

### 31. Describe the use of isotopic dating in determining the geologic age of fossils.

- **SE:** Biotechnology 331

### HEREDITY AND REPRODUCTION

#### Molecular Basis of Heredity

32. Recognize heritable characteristics of organisms.
- **Physical structure**
- **Chemical composition**
- **Behavior**

- **SE:** 196-197, 198, 226, 278, 339-340
- **TWE:** HC 238, DI 278

#### STANDARD IV
**OBJECTIVE 1**

33. Explain the transfer of information from parents to offspring through genes within DNA molecules.
- **Mitosis**
- **Meiosis**
- **Protein synthesis**

- **SE:** 172-177, 183-190, 237-238, 250-256
- **Investigation 258-259**
- **TWE:** AL 176-177, MC 189, RT 190

#### STANDARD IV
**OBJECTIVE 2**

34. Apply Mendel’s laws to determine possible combinations of offspring.
- **Monohybrid cross**
- **Dihybrid cross**

- **SE:** 199-206, 207-208
- **Investigation 204-205**
- **TWE:** BR 200, CD 201, FCQ 206

#### STANDARD V
**OBJECTIVE 1**

#### STANDARD IV
**OBJECTIVE 2**
<table>
<thead>
<tr>
<th>CONTENT STANDARDS</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA COURSE OF STUDY SCIENCE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 35. Identify the genetics in commonly inherited disorders.  
  • Sex-linked disorders  
  • Sex-influenced disorders | SE: 278-279, 280, 282, 285-287  
  Thinking Lab 218  
  History Connection 286-287  
  TWE: PR 282 | STANDARD V OBJECTIVE 1  
  STANDARD IV OBJECTIVE 2 |
| 36. Analyze factors in the population that cause genetic mutations in an organism and/or its offspring.  
  • Radiation  
  • Chemicals  
  • Chance | SE: 261-263, 267  
  Minilab 263  
  TWE: AL 266-267  
  PO 292 | STANDARD IV OBJECTIVE 1 |
| 37. Predict positive and negative outcomes of biotechnology.  
  • Genetic alteration  
  • Selective breeding  
  • Cloning  
  • Treatments for disease | SE: 269-270, 291-296  
  Biology, Technology, and Society 243-244, 297-298  
  Issues 244-245, 506-507  
  Minilab 269  
  Biotechnology 298, 507  
  TWE: SJ 269  
  EN 291 | |
| ORGANISMS AND ENVIRONMENTS | | |
| Interdependence of Organisms | | |
| 38. Relate the biotic and abiotic factors of the environment. | SE: 19, 786-787, 792, 795-805  
  TWE: AV 19  
  DI 786  
  MO 795  
  SJ 797  
  CFU 805 | STANDARD VI OBJECTIVE 1 |
| 39. Discuss factors that affect the dynamic equilibrium of ecosystems.  
  • Disasters  
  • Climate changes  
  • Introduction of new species  
  • Activities of organisms  
  • Succession | SE: 6-11, 24-25, 804-805, 814-820, 845, 846-848, 851-856  
  Minilab 855  
  TWE: UAA 6 | STANDARD VI OBJECTIVE 1 |
| 40. Describe biomes. | SE: 821-836  
  Minilab 830  
  Biology, Technology, and Society 837-838  
  TWE: MIN 823  
  PR 824  
  EN 825  
  SJ 830 | |
### CONTENT STANDARDS

**ALABAMA COURSE OF STUDY SCIENCE**

<table>
<thead>
<tr>
<th>41. Explain different relationships among living organisms.</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Competition</td>
<td><strong>SE:</strong> 13-15, 767-769, 788, 792-794</td>
<td>STANDARD VI OBJECTIVE 1</td>
</tr>
<tr>
<td>- Symbiosis (mutualism, commensalism, parasitism)</td>
<td><strong>TWE:</strong> DE 767, CE 768</td>
<td></td>
</tr>
<tr>
<td>- Producer/consumer/decomposer (autotrophs, heterotrophs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Predator/prey (mimicry, camouflage)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>42. Describe structure and characteristics of viruses as they relate to living systems.</th>
<th>PAGE REFERENCES</th>
<th>CORRESPONDING ALABAMA HIGH SCHOOL GRADUATION EXIT EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>SE:</strong> 390-394, 770 <strong>Global Connections</strong> 392-393</td>
<td>STANDARD VI OBJECTIVE 1</td>
</tr>
<tr>
<td></td>
<td><strong>TWE:</strong> PR 390, MIN 391, UAA 391, STS 392, CD 770</td>
<td></td>
</tr>
</tbody>
</table>

### Codes Used for TWE Pages

- **AC** Activity
- **AL** Alternative Lab
- **AS** Assessment
- **AV** Audiovisual
- **BR** Brainstorming
- **CD** Concept Development
- **CE** Chalkboard Example
- **CFU** Check for Understanding
- **DE** Demonstration
- **DI** Discussion
- **DQ** Discussion Question
- **DVB** Different Viewpoints in Biology
- **EN** Enrichment
- **EX** Extension
- **FCQ** Figure Caption Question
- **HC** Health Connection
- **IC** Internet Connection
- **MC** Math Connection
- **MIN** Meeting Individual Needs
- **MO** Model
- **MS** Misconception
- **PO** Portfolio
- **PR** Project
- **RE** Reinforcement
- **SJ** Student Journal
- **RT** Reteach
- **STS** Science, Technology, and Society
- **UAA** Using an Analogy
- **USCT** Using Science Terms
- **UST** Using the Table
- **UTI** Using the Illustration
- **WAS** Writing About Science