Unit: Theories of Evolution

Content Standard: Understand that science is limited to the study of concrete aspects of the world and universe.

State Curriculum Standard: 3.1.10 C Explain concepts and processes of the theory of evolution.

3.1.12 C Assess and apply patterns in science and technology.

3.3.10 D Explain the mechanisms of the theory of evolution.

3.3.12 D Analyze the theory of evolution.

3.7.10 C Apply understandings about the nature of scientific and technological knowledge.

Course Content	Student Performance	Resources	Assessments
 A. Darwin. Voyage of the beagle Patterns of diversity The Galapagos Islands B. Ideas That Shaped Darwin's Thinking. Hutton and geological change Lyell's principles of geology Lamarck's theory of evolution Population growth C. Darwin's Case. Origin of species Inherited variation and artificial selection Natural selection Evidence of evolution 	 Read Chapter 15 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations 	 Biology (Prentice Hall, 2006) text pp. 369 to 391 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and Visual Aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Evolution

Content Standard: Understand the evolution of populations.

State Curriculum Standard: 3.1.10 C Explain concepts and processes of the theory of evolution.

3.1.12 C Assess and apply patterns in science and technology.
3.3.10 D Explain the mechanisms of the theory of evolution.
3.3.12 D Analyze the theory of evolution.

Course Content	Student Performance	Resources	Assessments
 A. Genes and Variation. Gene pool Sources of genetic variation Single-gene and polygenic traits B. Evolution as Genetic Change. Natural selection on single-gene traits Natural selection on polygenic traits Genetic drift Evolution vs. Genetic equilibrium C. The Process of Speciation. 	 Read Chapter 16 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations 	 Biology (Prentice Hall, 2006) text pp. 393 to 410 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion
 Isolating mechanisms Testing natural selection in nature Speciation in Darwin's finches Studying evolution since Darwin 			

Unit: Classification

Content Standard: **Explain how living things are organized for study.**

Describe Binomial Nomenclature.

Explain Linnaeus's system of classification. Identify principle behind cladistic analysis.

Name the six kingdoms of life.

Describe the three-domain system of classification.

State Curriculum Standard: 3.3.10 A Explain the causes of similarities and differences among living things.

Course Content	Student Performance	Resources	Assessments
 A. Finding Order in Diversity. Why classify? Assigning scientific names Linnaeus's system of classification B. Modern Evolutionary Classification. Which similarities are most important? Evolutionary classification Evolution using cladograms Similarities in DNA and RNA C. Kingdoms and Domains. Six kingdom system vs. three domain system 	 Read Chapter 18 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations Observe specimen in jars 	 Biology (Prentice Hall, 2006) text pp. 447 to 461 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD. Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Microorganisms

Content Standard: Identify and characterize microorganisms by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
 A. Bacteria. Classifying prokaryotes Identifying prokaryotes Metabolic diversity Growth and reproduction Importance of bacteria B. Viruses Structure of a virus Viral infection Retro viruses Viruses and living cells C. Diseases Caused by Bacteria and Viruses. Bacterial disease in humans Bacterial disease in animals Controlling bacteria Viral disease in humans Viral disease in animals Viral disease in plants Viroids and prions 	 Read Chapter 19 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides 	 Biology (Prentice Hall, 2006) text pp. 471 to 490 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study Guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Microorganisms

Content Standard: Identify and characterize protists by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
 D. The Kingdom Protista. What is a protist Evolution of protists Classification of protists E. Protozoans (Animallike Protist). Zooflagellates Sarcodines Ciliates Sporozoan Protozoan and disease F. Algae (Plantlike Protists). Euglenophytes Chrysophytes Diatoms Dioflagellates Red algae Brown algae Green algae Human uses of algae 	 Read Chapter 20 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides 	 Biology (Prentice Hall, 2006) text pp. 497 to 520 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Microorganisms

Content Standard: Identify and characterize protists by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
G. Funguslike Protists. Slime molds Water molds and the potato famine H. Fungus. Characteristics of fungus Structure of fungus Classification of fungus Fungus as decomposers Fungus as parasites Symbiotic relationships	 Read Chapter 20 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations 	 Biology (Prentice Hall, 2006) text pp. 497 to 520 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD. 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Plants

Content Standard: Describe the evolutionary patterns of vascular and non-vascular plants through examining their similarities and differences.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.1.10 C Explain the concepts and processes of the theory of evolution.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
 A. Introduction to Plants. Characteristics of a plant What plants need to survive Evolution of plants B. Bryophytes. Describe the adaptations of bryophytes Identify three groups of bryophytes C. Seedless and Vascular Plants. Explain how vascular tissue is important Describe the three phyla of spore-bearing plants. 	 Read Chapter 22 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View slides 	 Biology (Prentice Hall, 2006) text pp. 551 to 572 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD. 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information

Unit: Plants

Content Standard: Describe the evolutionary patterns of vascular and non-vascular plants through examining their similarities and differences.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.1.10 C Explain the concepts and processes of the theory of evolution.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
 D. Seed Plants. Describe the reproductive adaptations of seed plants Describe the evolution of seed plants Identify the four groups of gymnosperms E. Angiosperms-Flowering Plants. Identify the characteristics of angiosperms Explain the difference between monocots and dicots Describe the different life spans of angiosperms F. Specialized Tissues in Plants. Describe the organs and tissues of vascular plants Identify the specialized cells of vascular tissue 	 Read Chapter 22 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides 	 Biology (Prentice Hall, 2006) text pp. 551 to 572 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD. 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab Report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Plants

Content Standard: Describe the evolutionary patterns of vascular and non-vascular plants through examining their similarities and differences.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.1.10 C Explain the concepts and processes of the theory of evolution.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

Course Content	Student Performance	Resources	Assessments
 G. Roots. Describe the 3 types of roots Identify the tissues and structures of a mature root Describe the functions of a root H. Stems. Describe the 3 main functions of a stem Contrast monocots and dicots 	 Read chapter 23 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides 	 <u>Biology</u> (Prentice Hall, 2006) text pp. 579 to 602 <u>Biology</u> (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guide Video tapes/DVD. 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion
 I. Leaves. Describe how the structure of a leaf helps a leaf to carry out photosynthesis Describe how gas exchange takes place J. Transport in Plants. Explain how water is transported throughout a plant 			

Unit: Plants

Content Standard: Describe the evolutionary patterns of vascular and non-vascular plants through examining their similarities and differences.

State Curriculum Standard: 3.1.10A Explain the causes of similarities and differences found among living things.

3.1.10C Explain the concepts and processes of the theory of evolution.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

 K. Reproduction with Cones and Seeds. Identify the reproductive structures of gymnosperms and angiosperms L. Seed Development and Germination. Describe the development of seeds and fruits Explain how seeds are dispersed M. Plant Propagation and Agriculture. Identify forms of plant vegetation sections Read Chapter 24 of text Complete study guide sections Complete study guide sections Complete assigned laboratory investigations Complete assigned laboratory investigations Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides Student discussions Homework assignments Teacher observation and anecdotal information Student discussion 	Course Content	Student Performance	Resources	Assessments
Identify the major food-	 K. Reproduction with Cones and Seeds. Identify the reproductive structures of gymnosperms and angiosperms Seed Development and Germination. Describe the development of seeds and fruits Explain how seeds are dispersed M. Plant Propagation and Agriculture. Identify forms of plant vegetative propagation 	 Read Chapter 24 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations 	 Biology (Prentice Hall, 2006) text pp. 609 to 626 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information

Unit: Invertebrates

Content Standard: Identify and characterize invertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 A. Introduction to the Animal Kingdom. List characteristics all animals share Describe the functions that animals carry out Summarize trends in animal evolution B. Sponges. Describe what a sponge is Identify the various structures of a sponge and their functions C. Cnidarians Basic characteristics of cnidarians Explain the two body plans of cnidarians Classify cnidarians into 3 classes 	 Read Chapter 23 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 Biology (Prentice Hall, 2006) text pp. 657 to 675 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Invertebrates

Content Standard: Identify and characterize invertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 D. Flatworms, Roundworms and Annelids. Identify basic features of each type of worm Discuss roundworms and human disease Classification of worms into three phyla and various classes E. Mollusks. Identify basic characteristics of mollusks Explain feeding in mollusks Describe the structures of mollusks and their functions Classify mollusks into the three main classes 	 Read Chapter 27 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 <u>Biology</u> (Prentice Hall, 2006) text pp. 683 to 708 <u>Biology</u> (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information

Unit: Invertebrates

Content Standard: Identify and characterize invertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relationship with humans.

State Curriculum Standard: 3.1.10A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 F. Arthropods. List characteristics of arthropods Describe growth and development Explain classification including subphyla and classes G. Echinoderms. List characteristics of echinoderms Explain the functions of the water-vascular system Explain classification of echinoderms 	 Read Chapter 28 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 Biology (Prentice Hall, 2006) text pp. 715 to 738 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Vertebrates

Content Standard: Identify and characterize vertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relation ship with humans.

State Curriculum Standard: 3.1.10A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 A. The Chordates. List characteristics that all chordates share Identify 3 subphyla of chordates List the characteristics of vertebrates B. Fishes. Describe the basic characteristics of fish Explain evolution of fishes List ways that a fish is well suited for life in the water Classify fish into major groups 	 Read Chapter 30 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 Biology (Prentice Hall, 2006) text pp. 767 to 789 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information Student discussion

Unit: Vertebrates

Content Standard: Identify and characterize vertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relation

ship with humans.

State Curriculum Standard: 3.1.10 A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 C. Amphibians. Describe the characteristics of amphibians Describe how amphibians are adapted for life on land and water Explain evolution Describe the structures of amphibians and their functions Classify amphibians into three orders D. Reptiles. List characteristics of reptiles Explain evolution of reptiles Describe how reptiles are suited to life on land Classify reptiles into four main orders 	 Read Chapter 31 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 Biology (Prentice Hall, 2006) text pp. 797 to 814 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guides Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information

Unit: Vertebrates

Content Standard: Identify and characterize vertebrates by kingdom, phylum, class, order, family, genus and species and demonstrate their relation

ship with humans.

State Curriculum Standard: 3.1.10A Explain the causes of similarities and differences found among living things.

3.3.10 A Explain the structural and functional similarities and differences found among living things.

3.3.12 A Explain the relationship between structure and function at all levels of organization.

Course Content	Student Performance	Resources	Assessments
 E. Birds. List characteristics of all birds Explain evolution of birds List ways that birds are adapted for flight Discuss the diversity of bird classification F. Mammals. Describe the characteristics of mammals Describe the structures of mammals and their functions Classify mammals into 3 major groups according to characteristics Classify placental mammals into the major orders 	 Read Chapter 32 of text Complete study guide sections Complete assigned laboratory investigations Participate in small group and class discussions Demonstrate evaluative and critical thinking skills in both oral and written format View and summarize video presentations View prepared slides View jarred specimen 	 Biology (Prentice Hall, 2006) text pp. 821 to 832 Biology (Prentice Hall, 2006) Study Guide Textbook supplementary materials Teacher-developed handouts and study guide Video tapes/DVD Posters and visual aides 	 Quizzes/Tests Projects/Presentations Video follow-up activities Study guide Lab report evaluations Homework assignments Teacher observation and anecdotal information