Applied General Science II-Grades 11, 12

Unit: **Earth's Surface**

Content Standard: **Students will examine, identify, evaluate, and analyze views and surfaces of the earth.**

State Curriculum Standard: **3.1.12A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.**
3.1.12B Apply concepts of models as a method to predict and understand science and technology.
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.2.12B Evaluate experimental information for appropriateness and adherence to relevant science processes.
3.2.12C Apply the elements of scientific inquiry to solve multi-step problems.
3.5.12A Analyze and evaluate earth features and processes that change the earth.
3.7.12B Evaluate appropriate instruments and apparatus to accurately measure materials and processes.

Course Content	Student Performance	Resources	Assessments
A. Overview of Earth Science. B. Formation of Earth, C. Earth's major spheres. D. Global view. E. Map projection. F. Types of maps. G. Earth's systems. H. People and the environment. I. Scientific inquiry.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapter 1 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Earth's Materials**

Content Standard: **Students will examine, identify, evaluate, and analyze the formation and characteristics of the minerals and rocks of the earth.**

State Curriculum Standard: **3.1.12A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.**
3.1.12B Apply concepts of models as a method to predict and understand science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.5.12A Analyze and evaluate earth features and processes that change the earth.
3.5.12B Analyze the availability, location, and extraction of Earth's resources.

Course Content	Student Performance	Resources	Assessments
A. Mineral composition. B. Mineral formation. C. Mineral groups. D. Properties of minerals. E. Rock types. F. Rock cycle. G. Igneous rocks. H. Sedimentary rocks. I. Metamorphic rocks. J. Classification.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapters 2.2, 2.3, 3 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Plate Tectonics and Historical Geology**

Content Standard: **Students will examine, identify, evaluate, and analyze plate tectonics through the geologic time scale.**

State Curriculum Standard: **3.1.12B Apply concepts of models as a method to predict and understand science and technology.**
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.4.12A Apply concepts about the structure and properties of matter.
3.5.12A Analyze and evaluate earth features and processes that change the earth.

Course Content	Student Performance	Resources	Assessments
A. Continental drift. B. Earth's major plates. C. Types of plate boundaries. D. Movement at plate boundaries. E. Evidence of plate tectonics. F. Causes of plate motion. G. Earth's geologic history. H. Relative dating. I. Fossil formation. J. Fossil order.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapters 9, 12.1, 12.2, 12.4 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper • Field trip to Delaware Water Gap Recreation Area • Field trip to Beltzville State Park	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Earthquakes**

Content Standard: **Students will examine, identify, evaluate, and analyze the characteristics, structure, and effects of earthquakes.**

State Curriculum Standard: **3.1.12A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.**
3.1.12B Apply concepts of models as a method to predict and understand science and technology.
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.5.12A Analyze and evaluate earth features and processes that change the earth.

Course Content	Student Performance	Resources	Assessments
A. Causes of earthquakes. B. Earthquake waves. C. Locating earthquakes. D. Measuring earthquakes. E. Seismic vibrations. F. Tsunamis. G. Landslides and fires. H. Predicting earthquakes. I. Layers of the earth. J. Effects of earthquakes.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapter 8 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Volcanoes**

Content Standard: **Students will examine, identify, evaluate, and analyze the features of and factors that effect volcanoes and volcanic eruptions.**

State Curriculum Standard: **3.1.12A Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.**
3.1.12B Apply concepts of models as a method to predict and understand science and technology.
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.5.12A Analyze and evaluate earth features and processes that change the earth.

Course Content	Student Performance	Resources	Assessments
A. Factors affecting eruptions. B. Volcanic material. C. Types of volcanoes. D. Volcanic landforms. E. Plutons. F. Origin of magma. G. Convergent plate boundaries. H. Divergent plate boundaries. I. Intraplate igneous activity. J. Effects of volcanoes.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapter 10 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Oceanography**

Content Standard: **Students will examine, identify, evaluate, and analyze the physical and biological aspects of the ocean.**

State Curriculum Standard: **3.1.12B Apply concepts of models as a method to predict and understand science and technology.**
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.5.12A Analyze and evaluate earth features and processes that change the earth.
3.5.12B Analyze the availability, location, and extraction of earth's resources.
3.5.12C Analyze atmospheric energy transfers.
3.5.12D Analyze the principles and history of hydrology.

Course Content	Student Performance	Resources	Assessments
A. Ocean floor exploration. B. Ocean floor features. C. Types of sea floor sediments. D. Energy resources. E. Ocean salinity. F. Ocean temperature. G. Ocean density. H. Ocean layering. I. Marine organism classification. J. Hydrothermal vents. K. Productivity. L. Surface circulation. M. Deep ocean circulation. N. Waves. O. Tides. P. Wave impacts.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapters 14, 15, 16 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Meteorology**

Content Standard: **Students will examine, identify, evaluate, and analyze the atmosphere and the factors interacting within.**

State Curriculum Standard: **3.1.12B Apply concepts of models as a method to predict and understand science and technology.**
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.5.12A Analyze and evaluate earth features and processes that change the earth.
3.5.12C Analyze atmospheric energy transfers.

Course Content	Student Performance	Resources	Assessments
A. Composition of atmosphere. B. Earth-Sun relationships. C. Energy transfer as heat. D. Solar radiation. E. Temperature variation. F. Air pressure. G. Factors affecting wind. H. Cyclonic winds/ I. El Nino and La Nina. J. Air masses. K. Weather fronts. L. Cyclones. M. Thunderstorms. N. Tornadoes. O. Hurricanes.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapters 17, 19, 20 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work

Applied General Science II-Grades 11, 12

Unit: **Astronomy**

Content Standard: **Students will examine, identify, evaluate, and analyze the characteristics of our solar system and universe.**

State Curriculum Standard: **3.1.12B Apply concepts of models as a method to predict and understand science and technology.**
3.1.12C Assess and apply patterns in science and technology.
3.1.12D Analyze scale as a way of relating concepts and ideas to one another by some measure.
3.2.12A Evaluate the nature of scientific and technological knowledge.
3.4.12D Analyze the essential ideas about the composition and structure of the universe.

Course Content	Student Performance	Resources	Assessments
A. Formation of solar system. B. Planets. C. Asteroids. D. Comets. E. Meteoroids. F. Telescopes. G. Radiation. H. Sun structure. I. Sun interior. J. Solar activity. K. Characteristics of stars. L. Star evolution.	• Take notes from instructional presentations • Complete all assigned reading activities • Complete all assigned laboratory investigations • Collection and analysis of data • Participate constructively in assigned group activities • Participate constructively in class and group discussions • Demonstrate evaluative and critical thinking skills in both oral and written format • Thoughtfully view and analyze all video presentations	• Earth Science (Prentice Hall 2006)-Chapters 23, 24.2, 24.3, 25 • Textbook supplementary materials • Teacher developed notes and handouts • Video tapes and DVDs • Maps, charts and graphs • Websites • Library services • Posters/visual aids • Guest speaker • Newspaper • Field trip to planetarium	• Objective tests • Essay tests • Projects/presentations • Video follow-up activities • Quizzes • Homework • Class work