DREYFOUS & ASSOCIATES

Course Overview

Earth and Space Science

TABLE OF CONTENTS

Unit 0. Methods of Science

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Understanding Science

Code: C412G0SU00L00

Unit Documents: Lab, Study Guide and Unit Review.

Lesson 1. Understanding Science

Code: C412G0SU00L01

Essential Questions

- What is scientific inquiry?
- How do scientific laws and scientific theories differ?
- What is the difference between a fact and an opinion?

Concepts

- critical thinking
- hypothesis
- inference
- observation
- prediction
- science
- scientific law
- scientific theory
- technology

Lesson 2. Measurement and Scientific Tools

Code: C412G0SU00L02

Essential Questions

- Why is important for scientists to use the International System of Units?
- What causes measurement uncertainty?
- What are mean, median, mode, and range?

Concepts

- description
- explanation
- international system of units (si)
- significant digits

Lesson 3. Case Study: The Iceman's Last Journey

Code: C412G0SU00L03

Essential Questions

- How are independent variables and dependent variables related?
- How is scientific inquiry used in a real-life scientific investigation?

Concepts

- dependent variable
- independent variable
- variable

Unit 1. Mapping Earth

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Mapping Earth

Code: C412G0SU01L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Maps

Code: C412G0SU01L01

Essential Questions

- How can a map help determine a location?
- Why are there different map projections for representing Earth's surface?

Concepts

- international date line
- latitude
- longitude
- map legend
- map scale
- map view
- profile view
- time zone

Lesson 2. Technology and Mapmaking

Code: C412G0SU01L02

Essential Questions

- What can a topographic map tell you about the shape of Earth's surface?
- What can you learn from geologic maps about the rocks near Earth's surface?
- How can modern technology be used in mapmaking?

Concepts

- contour interval
- contour line
- cross section
- elevation
- geologic map
- relief
- slope
- topographic map

Unit 2. Earth's Structure

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Earth's Structure

Code: C412G0SU02L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Spherical Earth

Code: C412G0SU02L01

Essential Questions

- What are Earth's major systems and how do they interact?
- Why does Earth have a spherical shape?

Concepts

- density
- geosphere
- gravity
- sphere

Lesson 2. Earth's Interior

Code: C412G0SU02L02

Essential Questions

- What are the interior layers of Earth?
- What evidence indicates that Earth has a solid inner core and a liquid outer core?

Concepts

- asthenosphere
- core
- crust
- lithosphere
- magnetosphere
- mantle

Lesson 3. Earth's Surface

Code: C412G0SU02L03

Essential Questions

- What are Earth's major landforms and how do they compare?
- What are the major landform regions of the United States?

Concepts

- landform
- mountain
- plain
- plateau

Unit 3. Minerals

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Minerals

Code: C412G0SU03L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. What is a Mineral?

Code: C412G0SU03L01

Essential Questions

- What is a mineral?
- What are the common rock-forming minerals?
- How do minerals form?

Concepts

- crystallization
- lava
- magma
- mineral
- silicate

Lesson 2. How are Minerals Identified?

Code: C412G0SU03L02

Essential Questions

- Why is it necessary to use more than one property for mineral identification?
- What properties can you use to identify minerals?

Concepts

- cleavage
- density
- fracture
- hardness
- luster
- mineralogist
- streak

Lesson 3. Sources and Uses of Minerals

Code: C412G0SU03L03

Essential Questions

- How are minerals used in your daily life?
- Why are minerals a valuable resource?

Concepts

- gemstone
- ore

Unit 4. Rocks

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Rocks

Code: C412G0SU04L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Rocks and the Rock Cycle

Code: C412G0SU04L01

Essential Questions

- How are rocks classified?
- What is the rock cycle?

Concepts

- grain
- lava
- magma
- rock
- rock cycle
- sediment
- texture

Lesson 2. Igneous Rock

Code: C412G0SU04L02

Essential Questions

- How do igneous rocks form?
- What are the common types of igneous rocks?

Concepts

- extrusive rock
- intrusive rock
- volcanic glass

Lesson 3. Sedimentary Rocks

Code: C412G0SU04L03

Essential Questions

- How do sedimentary rocks form?
- What are the three types of sedimentary rocks?

Concepts

- biochemical rock
- cementation
- chemical rock
- clast
- clastic rock
- compaction

Lesson 4. Metamorphic Rocks

Code: C412G0SU04L04

Essential Questions

- How do metamorphic rocks form?
- How do types of metamorphic rock differ?

Concepts

- contact metamorphism
- foliated
- metamorphism
- nonfoliated rock
- plastic deformation
- regional metamorphism

Unit 5. Weathering and Soil

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Weathering and Soil

Code: C412G0SU05L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Weathering

Code: C412G0SU05L01

Essential Questions

- How does weathering break down or change rock?
- How do mechanical processes break rocks into smaller pieces?
- How do chemical processes change rocks?

Concepts

- chemical weathering
- mechanical weathering
- oxidation
- weathering

Lesson 2. Soil

Code: C412G0SU05L02

Essential Questions

- How is soil created?
- What are soil horizons?
- Which soil properties can be observed and measured?
- How are soils and soil conditions related to life?

Concepts

- biota
- climate
- decomposition
- horizon
- organic matter
- parent material
- pore
- soil
- topography

Unit 6. Erosion and Deposition

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Erosion and Deposition

Code: C412G0SU06L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. The Erosion-Deposition Process

Code: C412G0SU06L01

Essential Questions

- How can erosion shape and sort sediment?
- How are erosion and deposition related?
- What features suggest whether erosion or deposition created a landform?

Concepts

- deposition
- erosion

Lesson 2. Landforms Shaped by Water and Wind

Code: C412G0SU06L02

Essential Questions

- What are the stages of stream development?
- How do water erosion and deposition change Earth's surface?
- How do wind erosion and deposition change Earth's surface?

Concepts

- abrasion
- delta
- dune
- loess
- longshore current
- meander

Lesson 3. Mass Wasting and Glaciers

Code: C412G0SU06L03

Essential Questions

- What are some ways gravity shapes Earth's surface?
- How do glaciers erode Earth's surface?

Concepts

- glacier
- landslide
- mass wasting
- moraine
- outwash
- talus

- till

Unit 7. Plate Tectonics

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Plate Tectonics

Code: C412G0SU07L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. The Continental Drift Hypothesis

Code: C412G0SU07L01

Essential Questions

- What evidence supports continental drift?
- Why did scientists question the continental drift hypothesis?

Concepts

- continental drift
- pangaea

Lesson 2. Development of a Theory

Code: C412G0SU07L02

Essential Questions

- What is seafloor spreading?
- What evidence is used to support seafloor spreading?

Concepts

- magnetic reversal
- mid-ocean ridge
- normal polarity
- reversed polarity
- seafloor spreading

Lesson 3. The Theory of Plate Tectonics

Code: C412G0SU07L03

Essential Questions

- What is the theory of plate tectonics?
- What are the three types of plate boundaries?
- Why do tectonic plates move?

Concepts

- convection
- convergent plate boundary
- divergent plate boundary
- lithosphere
- plate tectonics
- ridge push
- slab pull
- subduction

- transform plate boundary

Unit 8. Earth Dynamics

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Earth Dynamics

Code: C412G0SU08L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Forces that Shape Earth

Code: C412G0SU08L01

Essential Questions

- How do continents move?
- What forces can change rocks?
- How does plate motion affect the rock cycle?

Concepts

- compression
- isostasy
- shear
- strain
- subsidence
- tension
- uplift

Lesson 2. Landforms at Plate Boundaries

Code: C412G0SU08L02

Essential Questions

- What features form where two plates converge?
- What features form where two plates diverge?
- What features form where two plates slide past each other?

Concepts

- fault zone
- ocean trench
- transform fault
- volcanic arc

Lesson 3. Mountain Building

Code: C412G0SU08L03

Essential Questions

- How do mountains change over time?
- How do different types of mountains form?

Concepts

- fault-block mountain
- folded mountain
- uplifted mountain

Lesson 4. Continent Building

Code: C412G0SU08L04

Essential Questions

- What are two ways continents grow?
- What are the differences between interior plains, basins, and plateaus?

Concepts

- basin
- plains
- plateau

Unit 9. Earthquakes and Volcanoes

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Earthquakes and Volcanoes

Code: C412G0SU09L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Earthquakes

Code: C412G0SU09L01

Essential Questions

- What is an earthquake?
- Where do earthquakes occur?
- How do scientists monitor earthquake activity?

Concepts

- earthquake
- epicenter
- fault
- focus
- primary wave
- secondary wave
- seismic wave
- seismogram
- seismologist
- seismometer
- surface wave

Lesson 2. Volcanoes

Code: C412G0SU09L02

Essential Questions

- How do volcanoes form?
- What factors contribute to the eruption style of a volcano?
- How are volcanoes classified?

Concepts

- cinder cone
- composite volcano
- hot spot
- lava
- magma
- shield volcano
- viscosity
- volcanic ash
- volcano

Unit 10. Clues to Earth's Past

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Clues to Earth's Past

Code: C412G0SU10L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Fossils

Code: C412G0SU10L01

Essential Questions

- What are fossils and how do they form?
- What can fossils reveal about Earth's past?

Concepts

- carbon
- cast
- catastrophism
- fossil
- mold
- paleontologist
- trace fossil
- uniformitarianism

Lesson 2. Relative-Age Dating

Code: C412G0SU10L02

Essential Questions

- What does relative age mean?
- How can the positions of rock layers be used to determine the relative ages of rocks?

Concepts

- correlation
- inclusion
- index fossil
- relative age
- superposition
- unconformity

Lesson 3. Absolute-Age Dating

Code: C412G0SU10L03

Essential Questions

- What does absolute age mean?
- How can radioactive decay be used to date rocks?

Concepts

- absolute age

- half-life
- isotope
- radioactive decay

Unit 11. Geologic Time

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Geologic Time

Code: C412G0SU11L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Geologic History and the Evolution of Life

Code: C412G0SU11L01

Essential Questions

- How was the geologic time scale developed?
- What are some causes of mass extinctions?
- How is evolution affected by environmental change?

Concepts

- eon
- epoch
- era
- geographic isolation
- land bridge
- mass extinction
- period

Lesson 2. The Paleozoic Era

Code: C412G0SU11L02

Essential Questions

- What major geologic events occurred during the Paleozoic era?
- What does fossil evidence reveal about the Paleozoic era?

Concepts

- cenozoic era
- coal swamp
- inland sea
- mesozoic era
- paleozoic era
- supercontinent

Lesson 3. The Mesozoic Era

Code: C412G0SU11L03

Essential Questions

- What major geologic events occurred during the Mesozoic era?
- What does fossil evidence reveal about the Mesozoic era?

Concepts

- dinosaur
- plesiosaur

- pterosaur

Lesson 4. The Cenozoic Era

Code: C412G0SU11L04

Essential Questions

- What major geologic events occurred during the Cenozoic era?
- What does fossil evidence reveal about the Cenozoic era?

Concepts

- glacial groove
- holocene epoch
- ice age
- mega-mammal
- pleistocene epoch

Unit 12. Earth's Atmosphere

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Earth's Atmosphere

Code: C412G0SU12L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Describing Earth's Atmosphere

Code: C412G0SU12L01

Essential Questions

- How did Earth's atmosphere form?
- What is Earth's atmosphere made of?
- What are the layers of the atmosphere?
- How do air pressure and temperature change as altitude increases?

Concepts

- atmosphere
- ionosphere
- ozone layer
- stratosphere
- troposphere
- water vapor

Lesson 2. Energy Transfer in the Atmosphere

Code: C412G0SU12L02

Essential Questions

- How does energy transfer from the Sun to Earth and the atmosphere?
- How the air circulation patterns within the atmosphere created?

Concepts

- conduction
- convection
- radiation
- stability
- temperature inversion

Lesson 3. Air Currents

Code: C412G0SU12L03

Essential Questions

- How does uneven heating of Earth's surface result in air movement?
- How are air currents on Earth affected by Earth's spin?
- What are the main wind belts on Earth?

Concepts

- jet stream
- land breeze

- polar easterlies
- sea breeze
- trade winds
- westerlies
- wind

Lesson 4. Air Quality

Code: C412G0SU12L04

Essential Questions

- How do humans impact air quality?
- Why do humans monitor air quality standards?

Concepts

- acid precipitation
- air pollution
- particulate matter
- photochemical smog

Unit 13. Weather

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Weather

Code: C412G0SU13L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Describing Weather

Code: C412G0SU13L01

Essential Questions

- What is weather?
- What variables are used to describe weather?
- How is weather related to the water cycle?

Concepts

- air pressure
- dew point
- humidity
- precipitation
- relative humidity
- water cycle
- weather

Lesson 2. Weather Patterns

Code: C412G0SU13L02

Essential Questions

- What are two types of pressure systems?
- What drives weather patterns?
- Why is it useful to understand weather patterns?
- What are some examples of severe weather?

Concepts

- air mass
- blizzard
- front
- high-pressure system
- hurricane
- low-pressure system
- tornado

Lesson 3. Weather Forecasts

Code: C412G0SU13L03

Essential Questions

- What instruments are used to measure weather variables?
- How are computer models used to predict the weather?

Concepts

- computer model
- doppler radar
- isobar
- surface report
- upper-air report

Unit 14. Climate

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Climate

Code: C412G0SU14L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Climates of Earth

Code: C412G0SU14L01

Essential Questions

- What is climate?
- Why is one climate different from another?
- How are climates classified?

Concepts

- climate
- microclimate
- rain shadow
- specific heat

Lesson 2. Climate Cycles

Code: C412G0SU14L02

Essential Questions

- How has climate varied over time?
- What causes seasons?
- How does the ocean affect climate?

Concepts

- drought
- El Niño/Southern Oscillation
- ice age
- interglacial
- monsoon

Lesson 3. Recent Climate Change

Code: C412G0SU14L03

Essential Questions

- How can human activities affect climate?
- How are predictions for future climate change made?

Concepts

- deforestation
- global climate model
- global warming
- greenhouse gas

Unit 15. Earth's Water

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Earth's Water

Code: C412G0SU15L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. The Water Planet

Code: C412G0SU15L01

Essential Questions

- Why is water important to life?
- How is water distributed on Earth?
- How is water cycled on Earth?

Concepts

- condensation
- evaporation
- hydrosphere
- specific heat
- transpiration
- water cycle

Lesson 2. The Properties of Water

Code: C412G0SU15L02

Essential Questions

- What makes water a unique compound?
- How does water's structure determine its unique properties?
- How does water's density make it important to life on Earth?

Concepts

- adhesion
- cohesion
- polarity

Lesson 3. Water Quality

Code: C412G0SU15L03

Essential Questions

- Why is water quality important?
- How is water quality tested and monitored?

Concepts

- bioindicator
- nitrate
- nonpoint-source pollution
- point-source pollution

- remote sensing
- turbidity
- water quality

Unit 16. Oceans

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Oceans

Code: C412G0SU16L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Composition and Structure of Earth's Oceans

Code: C412G0SU16L01

Essential Questions

- Why are the oceans salty?
- What does the seafloor look like?
- How do temperature, salinity, and density affect ocean structure?

Concepts

- abyssal plain
- brackish
- salinity
- seawater

Lesson 2. Ocean Waves and Tides

Code: C412G0SU16L02

Essential Questions

- What causes ocean waves?
- What causes tides?

Concepts

- neap tide
- sea level
- spring tide
- tidal range
- tide
- tsunami

Lesson 3. Ocean Currents

Code: C412G0SU16L03

Essential Questions

- What are the major types of ocean currents?
- How do ocean currents affect weather and climate?

Concepts

- coriolis effect
- gyre
- ocean current
- upwelling

Lesson 4. Environmental Impacts on Oceans

Code: C412G0SU16L04

Essential Questions

- How does pollution affect marine organisms?
- How does global climate change affect marine ecosystems?
- Why is it important to keep oceans healthy?

Concepts

- coral bleaching
- harmful algal bloom
- marine

Unit 17. Freshwater

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Freshwater

Code: C412G0SU17L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Glaciers and Polar Ice Sheets

Code: C412G0SU17L01

Essential Questions

- How do glaciers affect sea level?
- How does ice and snow cover affect climate?
- How do human activities affect glaciers?

Concepts

- alpine glacier
- freshwater
- ice core
- ice sheet
- sea ice

Lesson 2. Streams and Lakes

Code: C412G0SU17L02

Essential Questions

- What are streams and lakes?
- What is a watershed?
- How do human activities affect streams and lakes?

Concepts

- estuary
- lake
- runoff
- stream
- watershed

Lesson 3. Groundwater and Wetlands

Code: C412G0SU17L03

Essential Questions

- What is groundwater?
- Why are wetlands important?
- How do human activities affect groundwater and wetlands?

Concepts

- aquifer
- groundwater
- permeability

- porosity
- water table
- wetland

Unit 18. Natural Resources

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Natural Resources

Code: C412G0SU18L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Energy Resources

Code: C412G0SU18L01

Essential Questions

- What are the main sources of nonrenewable energy?
- What are the advantages and disadvantages of using nonrenewable energy resources?
- How can individuals help manage nonrenewable resources wisely?

Concepts

- nonrenewable resource
- nuclear energy
- reclamation
- renewable resource

Lesson 2. Renewable Energy Resources

Code: C412G0SU18L02

Essential Questions

- What are the main sources of renewable energy?
- What are the advantages and disadvantages of using renewable energy resources?
- What can individuals do to encourage the use of renewable energy resources?

Concepts

- biomass energy
- geothermal energy
- hydroelectric power
- solar energy
- wind farm

Lesson 3. Land Resources

Code: C412G0SU18L03

Essential Questions

- Why is land considered a resource?
- What are the advantages and disadvantages of using land as a resource?

- How can individuals help manage land resources wisely?

Concepts

- deforestation
- ore

Lesson 4. Air and Water Resources

Code: C412G0SU18L04

Essential Questions

- What is it important to manage air and water resources wisely?
- How can individuals help manage air and water resources wisely?

Concepts

- acid precipitation
- photochemical smog

Unit 19. Exploring Space

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Exploring Space

Code: C412G0SU19L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Observing the Universe

Code: C412G0SU19L01

Essential Questions

- How do scientists use the electromagnetic spectrum to study the universe?
- What types of telescopes and technology are used to explore space?

Concepts

- electromagnetic spectrum
- radio telescope
- refracting telescope
- reflecting telescope

Lesson 2. Early History of Space Exploration

Code: C412G0SU19L02

Essential Questions

- How are rockets and artificial satellites used?
- Why do scientists send both crewed and unscrewed missions into space?
- What are some ways that people use space technology to improve life on Earth?

Concepts

- lunar
- project apollo
- rocket
- satellite
- space probe
- space shuttle

Lesson 3. Recent and Future Space Missions

Code: C412G0SU19L03

Essential Questions

- What are goals for future space exploration?
- What conditions are required for the existence of life on Earth?
- How can exploring space help scientists learn about Earth?

Concepts

- astrobiology
- extraterrestrial life

Unit 20. The Sun-Earth-Moon System

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. The Sun-Earth-Moon System

Code: C412G0SU20L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. Earth's Motion

Code: C412G0SU20L01

Essential Questions

- How does Earth move?
- Why is Earth warmer at the equator and colder at the poles?
- Why do the seasons change as Earth moves around the Sun?

Concepts

- equinox
- orbit
- revolution
- rotation
- rotation axis
- solstice

Lesson 2. Earth's Moon

Code: C412G0SU20L02

Essential Questions

- How does the Moon move around Earth?
- Why does the Moon's appearance change?

Concepts

- Maria
- Phase
- Waning phase
- Waxing phase

Lesson 3. Eclipses and Tides

Code: C412G0SU20L03

Essential Questions

- What is a solar eclipse?
- What is a lunar eclipse?
- How do the Moon and the Sun affect Earth's oceans?

Concepts

- lunar eclipse
- penumbra
- solar eclipse
- tide

- umbra

Unit 21. The Solar System

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. The Solar System

Code: C412G0SU21L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. The Structure of the Solar System

Code: C412G0SU21L01

Essential Questions

- How are the inner planets different from the outer planets?
- What is an astronomical unit and why is it used?
- What is the shape of a planet's orbit?

Concepts

- asteroid
- astronomical unit
- comet
- period of revolution
- period of rotation

Lesson 2. The Inner Planets

Code: C412G0SU21L02

Essential Questions

- How are the inner planets similar?
- Why is Venus hotter than Mercury?
- What kind of atmospheres do the inner planets have?

Concepts

- greenhouse effect
- terrestrial planet

Lesson 3. The Outer Planets

Code: C412G0SU21L03

Essential Questions

- How are the outer planets similar?
- What are the outer planets made of?

Concept

- Galilean moons

Lesson 4. Dwarf Planets and Other Objects

Code: C412G0SU21L04

Essential Questions

- What is a dwarf planet?

- What are the characteristics of comets and asteroids?
- How does an impact crater form?

Concepts

- impact crater
- meteor
- meteorite
- meteoroid

Unit 22. Stars and Galaxies

At the end of this unit the student will have answered the essential questions found in the following lessons.

Lesson 0. Stars and Galaxies

Code: C412G0SU22L00

Unit Documents: Lab, Standardized Test Practice, Study Guide and Unit Review.

Lesson 1. The View from Earth

Code: C412G0SU22L01

Essential Questions

- How do astronomers divide the night sky?
- What can astronomers learn about stars from their light?
- How do scientists measure the distance and the brightness of objects in the sky?

Concepts

- apparent magnitude
- astronomical unit
- light year
- luminosity
- spectroscope

Lesson 2. The Sun and Other Stars

Code: C412G0SU22L02

Essential Questions

- How do stars shine?
- How are stars layered?
- How does the Sun change over short periods of time?
- How do scientists classify stars?

Concepts

- chromosphere
- convection zone
- corona
- hertzsprung-russell diagram
- nuclear fusion
- photosphere
- radiative zone
- star

Lesson 3. Evolution of Stars

Code: C412G0SU22L03

Essential Questions

- How do stars form?
- How does a star's mass affect its evolution?

- How is star matter recycled in space?

Concepts

- black hole
- nebula
- neutron star
- supernova
- white dwarf

Lesson 4. Galaxies and the Universe

Code: C412G0SU22L04

Essential Questions

- What are the major types of galaxies?
- What is the Milky Way, and how is related to the solar system?
- What is the Big Bang theory?

Concepts

- Big Bang theory
- dark matter
- doppler shift
- galaxy