

# 2011 – 2012 Curriculum Guide for Seventh and Eighth Grade Earth Science

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## Organization and Content

- A Framework for Earth Science
  - Philosophy of science, contrasting biblical and naturalistic frameworks for science
  - Limitations of science
  - The authority of the bible and worldview development
  - A young-earth creationist worldview
  - Overview of earth sciences
  - How worldview defines scientific theories
  - Evidences for various motions of the earth
- The Celestial Sphere
  - Stars, constellations, galaxies, black holes, and quasars
  - Telescopes and other astronomical instruments
  - Features of the sun, the sun's structure, and solar energy
  - Planetary properties, comparing the planets, descriptions of the planets
  - Origin theories of the solar system
  - Asteroids, comets, meteors, their origins, ultimate fates
  - Description of the earth's moon, its motions, solar and lunar eclipses, and theories for the moon's origin
  - History of space exploration, space programs, space stations, reasons for manned space missions, future of space exploration
- The Atmosphere
  - Structure, energy in the atmosphere, measurable conditions in the atmosphere
  - Water entering the atmosphere, humidity and clouds, precipitation, dew, frost
  - Air mass formation, movement and weather
  - Global and local winds
  - Origin of winds
  - Thunderstorms, tornadoes, and hurricanes
  - Simple and complex weather instruments, weather data reporting systems, weather data analysis and prediction
- The Lithosphere
  - The earth's interior structure, and the earth's history from creationary and evolutionary perspectives
  - Minerals and ores, basic chemical descriptions, and identifying minerals
  - Descriptions and occurrences of native minerals
  - Sedimentary, igneous, and metamorphic rocks
  - Fossils and sedimentary rocks creationary and uniformitarian rock cycles
  - The uniformitarian geologic column
  - Fossil fuels
  - Describing mountains, types of mountains and their formation
  - Earthquakes, where and how they occur, how they are measured and located
  - Kinds of volcanoes, their emissions, their structures, and their locations

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- Hydrothermal fluids, types of hydrothermal minerals, harnessing geothermal energy
- Weathering, soils, mass wasting, and stream erosion
- The Hydrosphere
  - Composition of seawater
  - Tides, waves, and currents
  - Beach erosion
  - Seafloor topography
  - Ocean exploration
  - Formation and movement of glaciers, types of glaciers, glacial erosion and deposition
  - The ice age
  - The ground water system
  - The water cycle, the storage and movement of ground water
  - Erosion by ground water
  - Caves and Karst topography

### Laboratory

- Investigation activities