# Secondary Earth Science Labs Index

These Earth Science labs are numbered according to the chapter that they relate to. I've included the chapter titles of the book I currently use (Feather, Snyder, Zike, 2005, Earth Science, Glencoe McGraw Hill). The numbering of the labs I use is as follows: The first number in the triplet indicates is it for my grade nine earth science, the second number of the triplet indicates the chapter number it is related to, and the third number of the triplet indicates what part of the chapter is to be completed before doing the lab.

Download the lab worksheet (with adobe reader) by clicking on the file number below, or at http://circle.adventist.org/files/nadspiritual/earthsci/

**The Nature of Science**
9-1-1a Understanding Scientific Words
9-1-1d Problem Solving & the Scientific Method
9-1-1e The Law of Probability
9-1-2b Converting SI Units
9-1-2c Determining Length, Area, & Volume
9-1-2e Mass, Weight, & Temperature

**Matter**
9-2-1c Atoms & Elements
9-2-2a Electrical Charges
9-2-2c Forms of Matter
9-2-3a Density & Buoyancy
9-2-3e States of Matter

**Minerals**
9-3 Intro Minerals: Building Blocks of the Earth
9-3-1b Crystal Structure and Formation
9-3-1c Two Types of Crystal Formation
9-3-2a Mineral Identification Experiment
9-3-3b Removal of Waste Rock
9-3-3c Mineral Resources & Identification

**Rocks**
9-4-1b The Rock Cycle
9-4-2a Gas Production in Magma
9-4-2b Igneous Rock
9-4-3a Metamorphic Processes
9-4-3b What do Metamorphic Rocks Form From?
9-4-4c Sedimentary Rock Formation & Concretions
9-4-4e Sedimentary Rocks

**Earth's Energy and Mineral Resources**
9-5-1c Efficiency of fossil Fuels
9-5-1e Fossil Fuels
9-5-2b Solar Energy Collector
9-5-3a Using Biomass
9-5-3c Experiment: Coal Types & Energy Use

**Views of Earth**
9-6-1b Landform Profile of the United States
9-6-1c Common Landforms in the United States
9-6-2a Determining Latitude by Use of Sextant
9-6-2c Time Zones
9-6-3a Comparing Maps
9-6-3b Determining Elevation
9-6-3c Reading Topographic Maps
9-6-3d Interpreting Topographic Maps

**Weathering and Soil**
9-7-1b Mechanical Weathering of Rocks
9-7-1d Chemical Weathering
9-7-2c Soil Characteristics
9-7-2d Soil Transport & Soil Types
9-7-3c Soil Infiltration by Groundwater

**Erosional Forces**
9-8-1b Mass Movements
9-8-2e Glacial Erosion
9-8-2f Glaciers Shape Our Earth & Affects Sea
9-8-3c Wind Erosion Not in index

**Water Erosion and Deposition**
9-9-1b How Stream Velocity & Shape Affects Erosion
9-9-1f River Erosion & Deposition
9-9-2a Capillary Action & Permeability
9-9-2c Artesian Wells & Limestone Reactions
9-9-2cc The Power of Water
9-9-3d Waves, Currents, & Coastal Features

**Plate Tectonics**
9-10-1b Continental Drift
9-10-2b Sea-Floor Spreading
9-10-3b Plate Tectonics-The Puzzle of the Continents
9-10-3e How Convection Currents Operate

**Earthquakes**
9-11- Killer Quake
9-11-1b Faulting & Folding
9-11-2b Seismic-risk Map of the United States
9-11-2c Locating an Earthquake
9-11-3b Earthquake-Safe Structures Two

**Volcanoes**
9-12-1d Locating Active Volcanoes
9-12-1dd The Volcano Watcher (no Bible reference)
9-12-2c Models of Volcanic Cone Types
9-12-3b Volcano's Deadly Warning (No Bible reference)

**Clues to Earth's Past**
9-13-1c Carbon Impressions-a Type of Fossil
9-13-1e Mold Fossil Formation
9-13-2b Law of Superposition
9-13-2d Determining Relative Ages
9-13-3a Evidences: The Record and The Flood

9-13-3d Radioactive Decay

**Atmosphere**
9-15-1c Air Properties
9-15-1e Air Pressure
9-15-2a How a Barometer Works
9-15-2b Three Types of Energy Transfer
9-15-2d The Hydrologic Cycle: Water in Motion
9-15-3b Wind Conditions and Systems
9-15-3c Heating Differences of Soil and Water

**Weather**
9-16 Hurricanes
9-16-1b Determination of relative Humidity
9-16-1e Clouds
9-16-2b Air Fronts and Weather
9-16-2c Isobars & Thunderstorms
9-16-2cc Hurricane
9-16-3b Reading a Weather Map
9-16-3bb Forecasting Movement of Weather Systems

**Climate**
9-17-1c Radiant Energy & Climate
9-17-2b Microclimates
9-17-3d The Greenhouse Effect & Seasons
9-17-3h The Greenhouse Effect

**Ocean Motion**
9-18-1c Salt Concentration in Ocean Water
9-18-2c Ocean & Fresh Water Flotation Differences & Density Currents
9-18-3a Air Motion & Waves
9-18-3b Tidal Range

**Oceanography**
9-19-1b Ocean-floor Profile
9-19-1c Physical Oceanography
9-19-2c The Great Barrier Reef Australia
9-19-3c Plakton & Cleaning up Oil Spills

**Our Impact on land**
9-20-1b Human Population Growth Rate
9-20-2a A Model Landfill
9-20-3a Learning how you can Conserve
9-20-3b Conservation-Recycling

**Our Impact on Water and Air**
9-21-1b Water Purification & Hard Water Detection
9-21-1d Water Use & Being Aware of Our Nuclear Neighbor
9-21-2d Acid Rain: The Invisible Treat
9-21-2f What's in the Air?

**Exploring Space**
9-22-1a Part of the Electromagnetic Spectrum
9-22-1c Different Light Paths in Reflecting & Refracting Telescopes
9-22-2b Rockets & Refraction of Light
9-22-2c Video Racing for the moon America's Glory in Space

9-22-3c Simulation of Gravity in a Space

**The Sun - Earth - Moon System**
9-23-1b Earth's Roundness & Magnestism
9-23-1e The Earth's Spin
9-23-2b Direct Observations of the Moon
9-23-2c Motions & Size of Earth & Moon Cause Eclipses
9-23-2f The Earth-Moon System
9-23-3b Exploration of the Moon

**The Solar System**
9-24-1b Newton's First Law of Motion
9-24-1c Planetary Orbits
9-24-2d Venus-The Greenhouse Effect
9-24-2e Astronomical Distances
9-24-2ee Video-Mars Exploration
9-24-3f Making a Scale Drawing of the Solar System
9-24-4c Relating Gravitational Force and Orbits

**Stars and Galaxies**
9-25-1a Star Positions
9-25-1c Apparent & Absolute Magnitude
9-25-1d Spectral Analysis
9-25-2c Tracing Movement of Sunspots
9-25-2d Determination of Sun's Diameter
9-25-3b Star Colors
9-25-3c Supernova & H-R Star Diagrams
9-25-4b The Location of Earth in the Milky Way Galaxy
9-25-4e Model of Expanding Universe & Constellations

If you have questions concerning these labs, please feel free to contact Steve Atkins at satkins@andrews.edu