Earth and Space Science

General Curriculum Outline

(Instructors reserve the right to modify and adapt the outline as needed.)

Numbers is “()” correlate to the textbook chapters.

# Introduction to Science (1)

## Scientific Method

## Safety

## Measurements

# Introduction to Earth Science (1)

## Spheres and Systems (1)

## Geologic Timeline (21, 22, 23, 24)

## Layers of the Earth and Atmosphere (17, 11)

## Convection, Energy Transfer, and Density (17, 11, 3, 4)

# Minerals (4)

## Atoms and Atomic Bonds

## Definition

## Specific Gravity

## Crystal Shapes

## Identification

# Rocks (5, 6)

## The Rock Cycle

## Types of Rock

### Igneous

#### Properties

#### Identification

#### Uses

### Sedimentary

#### Properties

#### Processes that form sediment.

#### Identification

#### Historical Geology

#### Uses

### Metamorphic

#### Properties

#### Processes that form them.

#### Identification

#### Uses

### Rock Record

# Plate Tectonics (17)

## Fundamentals

### Convection Cells

### Plate Boundaries

### Interactions and products of interactions.

## Earthquakes (19)

### Seismic Waves and properties.

### Locating

### Human effects

### Examples

### Side-Effects

#### Tsunamis

#### Mass Movements

## Volcanism (18)

### Properties of Magma and Magma Types

### Types of Volcanoes

### Location

### Effects

# Astronomy (28, 29, 30, 31)

## Solar System Geometry (28)

## Objects of the Solar System (29)

### Sun (28)

#### Composition

#### Layers

#### Fusion

#### Activity Cycle

### Earth/Moon System (28)

#### Relationships

#### Rotation/Revolution/Orbits

#### Tides

#### Lunar Phases

#### Eclipses

### Earth/Sun System (28)

#### Seasons

#### Tropics

#### Heating of the Earth

### Planets (29)

#### Kepler’s Laws

#### Retrograde Motion

#### Astronomical Distances

#### Inner and Outer Planets

##### Compositional differences

##### Atmosphere

#### Additional Objects

##### Meteorites/Asteroids

### Formation of the Solar System (30, 31)

#### Nebular Theory

### Stars (30, 31)

#### Wavelength

#### Doppler Effect

#### Life Cycle of a Star

#### Measuring Distances

##### Parallax

#### Binary Star System

#### HR Diagrams

##### Magnitude and Luminosity

##### Life Cycle/Evolution of Stars

##### Spectra and Composition

#### Galaxies

##### Constellations

##### Milky Way

##### Galaxy Classification

##### Big Bang Theory

# Atmosphere (11)

## Layers of the Atmosphere

## Radiation, Conduction, Convection

## Gasses and O-Zone

### Percentage Composition

## Temperature Vs. Heat

### Scales

### Condensation and Dew Point

### Vertical Column

### Humidity

## Clouds (11,12)

### Formation

### Types

## Precipitation (11, 12, 13)

### Types

# Meteorology (12)

## Air Masses

## Global Winds

### Coriolis Effect

### Trade Winds

### ITCZ

### Jet Stream

## Fronts

### Types

### Pressure Systems

## Tools

### Weather and Analysis

# Nature of Storms (13)

## Thunderstorms

## Tornadoes

## Hurricanes

## Drought

## Global Warming

# Climate (14)

# Hydrosphere (15, 16)

## Water Cycle

## Water Shed

## Oceans

### Salinity

### Layers

### T/S Diagrams

### Currents

### Wave Characteristics

## Costal Features

### Types of

### Ocean and Continental Crusts

### Interactions with Humans