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# 8th Grade Science Syllabus

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## ***Unit 1: Dynamic Earth***

### **The Theory of Plate Tectonics:**

- 1:1: What's Inside Earth
- 1:2: 'Round-n-'Round We Go: Convection Currents
- 1:3: Drifting Away: Continental Drift
- 1:4: Under the Deep Blue Sea: Sea-Floor Spreading
- 1:5: Earth's Moving Plates

### **Processes That Shape the Earth**

- 1:6: Volcanoes: Mountains of Fire
- 1:7: There She Blows: Volcanic Eruptions and Plate Boundaries
- 1:8: Volcanic Landforms
- 1:9: Musical Plates: Using Real-Time Data to Study Earthquakes
- 1:10: Earth's Crust in Motion: Stress, Faults, and Folds
- 1:11: Earthquakes: The Rolling Earth
- 1:13: Did You Feel That? Locating an Epicenter
- 1:14: The Weathering Process
- 1:15: Shake it Up: Modeling Weathering
- 1:16: Take it on the Run: Erosion and Deposition
- 1:17: Water Erosion and Deposition
- 1:18: Running Water: Runoff and Streams
- 1:19: Glaciers: Ice Masses on the Move

### **Rocks and Minerals:**

- 1:20: Minerals
- 1:21: Mineral Properties
- 1:22: How Minerals Form
- 1:23: Mineral Crystals
- 1:24: This Planet Rocks: Classifying Rocks
- 1:25: Rocks of Fire: Igneous Rocks
- 1:26: It's Sedimentary My Dear Watson: Sedimentary Rocks
- 1:27: Sedimentary Rock Formation
- 1:28: Room For Change: Metamorphic Rocks
- 1:29: The Rock Cycle

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### **Geologic Time and The Fossil Record of Earth's Past:**

- 1:30: Fossils: Clues to Earth's Past
- 1:31: Fossil Safari
- 1:32: Investigating Geologic time
- 1:33: Fossil Fuels
- 1:34: Darwin's Voyage: Natural Selection and Evolution

### ***Unit 2: Introduction to Thermodynamics and Chemistry***

#### **Introduction to Thermodynamics:**

- 2:1: Bring on the Heat: Temperature and Thermal Energy
- 2:2: Heat Wave
- 2:3: Where Does All of the Heat Go?
- 2:4: Thermal Energy and States of Matter
- 2:5: Some Like it Hot: Thermal Expansion

#### **Properties and Changes of Matter:**

- 2:6: The Fact of the Matter is...
- 2:7: Physical and Chemical Changes
- 2:8: Sometimes Matter Can Be So Dense!
- 2:9: Skating on Thin Ice!

#### **Atoms and the Periodic Table:**

- 2:10: Atoms: The Building blocks of Matter
- 2:11: It's Elementary: Atoms, Elements & the Periodic Table
- 2:12: Using the Periodic Table of the Elements
- 2:13: Families of the Periodic Table
- 2:14: Taking Charge of Atoms

#### **Chemical Bonds, Chemical Reactions and Compounds:**

- 2:15: These Elements Now Become Compounds
- 2:16: The Name is Bond, Chemical Bond
- 2:17: Modeling Chemical Bonding
- 2:18: Chemical Equations & the Conservation of Mass
- 2:19: A Balancing Act: Balancing Chemical Equations
- 2:20: Endothermic and Exothermic Reaction
- 2:21: Types of Chemical Reactions

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### **Mixtures, Solutions and Acids/Bases:**

- 2:22: Mix it Up!
- 2:23: All Mixed Up! Separating Mixtures
- 2:24: Special Types of Solutions: Acids and Bases
- 2:25: Using a Natural Indicator to Test for Acids & Bases
- 2:26: That's One Powerful Solution: Measuring pH
- 2:27: Acid-Base Reactions
- 2:28: Testing Antacids: An Application of Neutralization

### ***Unit 3: Environmental Science***

#### **Principles of Ecology:**

- 3:1: What Makes an Ecosystem?
- 3:2: The Plight of Mono Lake
- 3:3: Biomes of the World
- 3:4: What's the Relationship?
- 3:5: Energy Roles in an Ecosystem
- 3:6: Constructing Food Chains
- 3:7: Food Webs
- 3:8: Energy Pyramids and Food Webs
- 3:9: Do You Cycle Too?

#### **Natural Resources:**

- 3:10: How Resourceful Are You?
- 3:11: Energy Resources
- 3:12: Let the Sun Shine

#### **Human Impact on the Natural World:**

- 3:13: Pollution of the Environment
- 3:14: Don't Dump on Me! Limiting Solid Waste
- 3:15: Recycling Matters
- 3:16: The Effects of Acid Rain
- 3:17: And Then There Were None! Conserving Wildlife
- 3:18: This Land is Your Land
- 3:19: Turning Up the Heat! The Greenhouse Effect
- 3:20: Amphibians: An Indicator of Environmental Quality
- 3:21: Environopoly: Designing an Environmental Game