



Switched-On

SCHOOLHOUSE® 2012 EDITION

Curriculum Catalog

Earth Science

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Course Overview

Earth Science is a high school science course that explores Earth's structure, interacting systems, and place in the universe. The course uncovers concepts and processes found in:

- astronomy – Earth's place in and interaction with space,
- geology – physical structure and dynamic processes,
- meteorology – atmosphere, weather and climate, and
- oceanography – oceans and marine life.

Students will have the opportunity to evaluate and explore many scientific concepts by participating in interactive lab sessions, conducting hands-on activities, and completing projects designed to improve the understanding of Earth and its dynamic functions.

Upon completion of the course, students should be able to do the following:

- Gain increased awareness about where Earth came from, how Earth functions and sustains life, and how the many systems and processes of Earth rely on and balance one another.
- Improve scientific evaluation skills and apply them to the study of Earth's physical geography and dynamic processes.
- Discover tools that allow for the study of Earth and its further exploration.

UNIT 1: DYNAMIC STRUCTURE OF EARTH	
Assignment Titles	
1. Course Overview	14. Quiz 2: Earth's Dynamic Internal Structure
2. Introduction to Earth Science	15. The Spheres of Earth
3. Project: Research a Career	16. Project: Sphere Interaction Lab
4. A Unique Planet	17. Geochemical Cycles: Cycles of Earth Materials
5. Project: Earth Comparisons	18. Biogeochemical Cycles: Cycles of Life Materials
6. Quiz 1: Introduction to Earth Science	19. Flow of Energy in Ecosystems
7. Layers of the Earth	20. Project: Flow of Energy
8. Project: Building a Model of the Earth	21. Quiz 3: Earth's Dynamic External Structure
9. Continental Drift	22. Special Project
10. Plate Tectonics	23. Review
11. Project: Mantle Convection	24. Test
12. Plate Boundaries	25. Alternate Test
13. Project: Plate Boundaries	26. Glossary and Credits

UNIT 2: FORCES AND FEATURES OF EARTH	
Assignment Titles	
1. Force of Earthquakes	12. Using Geologic Maps
2. Measuring The Force of Earthquakes	13. Using Topographic Maps
3. Features of Earthquakes	14. Project: Mapping
4. Project: Earthquake Features Lab	15. Project: Create a Topographic Map
5. Quiz 1: Earthquakes	16. Quiz 3: Identifying Features of Earth
6. Force of Volcanoes	17. Special Project
7. Impact of Volcanoes	18. Review
8. Prediction of Volcanoes	19. Test
9. Features of Volcanoes	20. Alternate Test
10. Project: Volcanic Features Lab	21. Glossary and Credits
11. Quiz 2: Volcanoes	

UNIT 3: FEATURES OF EARTH'S CRUST
Assignment Titles

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|-----------------------------------|-----------------------------|
| 1. Minerals | 11. Quiz 2 |
| 2. Project: Crystal Systems | 12. Renewable Resources |
| 3. Mineral Identification | 13. Nonrenewable Resources |
| 4. Project: Identifying a Mineral | 14. Project: Nuclear Energy |
| 5. Quiz 1 | 15. Quiz 3 |
| 6. Igneous Rocks | 16. Special Project |
| 7. Sedimentary Rocks | 17. Review |
| 8. Metamorphic Rocks | 18. Test |
| 9. The Rock Cycle | 19. Alternate Test |
| 10. Project: Identifying a Rock | 20. Glossary and Credits |

UNIT 4: SHAPING EARTH'S CRUST
Assignment Titles

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|--------------------------------|---|
| 1. Weathering | 10. Quiz 2: Weathering and Erosion |
| 2. Erosion | 11. Destructive Forces |
| 3. Soil Formation | 12. Constructive Forces |
| 4. Project: Soil Particles | 13. Quiz 3: Destructive and Constructive Forces |
| 5. Quiz 1: Shaping the Surface | 14. Special Project |
| 6. Rivers and Waves | 15. Review |
| 7. Gravity and Glaciers | 16. Test |
| 8. Project: Ice Erosion | 17. Alternate Test |
| 9. Wind | 18. Glossary and Credits |

UNIT 5: SEMESTER REVIEW AND EXAM
Assignment Titles

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|---------------|-------------------|
| 1. Review (1) | 3. Exam |
| 2. Review (2) | 4. Alternate Exam |

UNIT 6: EARTH'S WATER
Assignment Titles

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|--|---|
| 1. The Water Cycle | 12. Ocean Water |
| 2. Project: Water Purification | 13. Experiment: Fresh Water vs. Saltwater |
| 3. Water Basics | 14. Waves and Tides |
| 4. Water Distribution | 15. Currents |
| 5. Project: Water Conservation | 16. Quiz 3 |
| 6. Quiz 1 | 17. Special Project |
| 7. Groundwater | 18. Review |
| 8. Experiment: Porosity and Permeability | 19. Test |
| 9. Lakes and Rivers | 20. Alternate Test |
| 10. Glaciers and Ice Caps | 21. Glossary and Credits |
| 11. Quiz 2 | |

UNIT 7: EARTH'S ATMOSPHERE
Assignment Titles

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|--------------------------------------|-------------------------------------|
| 1. Importance of the Atmosphere | 11. Alternate Project: Barometers |
| 2. Structure of the Atmosphere | 12. Quiz 2: Earth-Sun Relationships |
| 3. Project: Layers of the Atmosphere | 13. Air Pollution |
| 4. Quiz 1: The Atmosphere | 14. Project: Greenhouse Effect |
| 5. Atmospheric Cycles | 15. Quiz 3: Human Relationship |
| 6. Solar Interaction | 16. Special Project |
| 7. Project: Solar Energy | 17. Review |
| 8. Alternate Project: Temperature | 18. Test |
| 9. Air Pressure and Winds | 19. Alternate Test |
| 10. Project: Air Circulation | 20. Glossary and Credits |

UNIT 8: EARTH'S WEATHER AND CLIMATE
Assignment Titles

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|---------------------------------------|---|
| 1. Weather and Climate | 12. Project: Research Your Climate |
| 2. Project: Weather or Climate? | 13. Quiz 2: Causes of Weather and Climate |
| 3. Clouds and Precipitation | 14. Weird Weather |
| 4. Project: Clouds and Weather | 15. Measuring Weather |
| 5. Project: Clouds and Rain | 16. Project: Predict the Weather |
| 6. Air Masses and Fronts | 17. Quiz 3: Predicting Weather |
| 7. Quiz 1: Weather Factors of the Sky | 18. Special Project |
| 8. Solar Power | 19. Review |
| 9. Project: Control the Weather | 20. Test |
| 10. Geographical Effects | 21. Alternate Test |
| 11. Climate Regulation and Change | 22. Glossary and Credits |

UNIT 9: ASTRONOMY
Assignment Titles

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|---------------------------------------|-----------------------------------|
| 1. Earth's Place in the Solar System | 10. Galaxies |
| 2. Project: Scale of the Solar System | 11. Project: Identifying Galaxies |
| 3. Planetary Motion | 12. Quiz 2: Stars and Galaxies |
| 4. Ability To Orbit | 13. Special Project |
| 5. Project: Newton's Law | 14. Review |
| 6. Earth's Motion, Seasons, and Moon | 15. Test |
| 7. Quiz 1: Solar System | 16. Alternate Test |
| 8. Characteristics of Stars | 17. Glossary and Credits |
| 9. Structure of the Sun | |

UNIT 10: SEMESTER REVIEW AND EXAM
Assignment Titles

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|---------------|-------------------|
| 1. Review (1) | 3. Exam |
| 2. Review (2) | 4. Alternate Exam |