

## Earth's Crust / Lithosphere

The following activities are part of a series of science modules created by the Center for Inquiry-Based Learning (CIBL) for North Carolina science classrooms. These modules align with the North Carolina Essential Science Standards. Each activity places students in the role of investigator, leaving some choices open-ended. The materials and activities are available only with prior professional development. These exercises are designed for students to deepen their understanding of underlying concepts and the scientific process.

| 6 <sup>th</sup> Grade Modules           | 7 <sup>th</sup> Grade Modules       | 8 <sup>th</sup> Grade Modules      |
|---|-------------------------------------|------------------------------------|
| Cycling of Matter & Population Dynamics | Atmosphere                          | 8 <sup>th</sup> Grade Life Science |
| Earth's Crust / Lithosphere             | Bodyworks                           | Chemistry                          |
| Energy and Waves                        | Machines, Energy, Forces and Motion | Change Through Time                |
| Solar System                            | Genetics, Cells and Systems         | Hydrosphere                        |

Please provide feedback at [cibl@ciblearning.org](mailto:cibl@ciblearning.org).

### Table of Contents

|   |    |
|---|----|
| Structure of the Earth.....                                   | 3  |
| Plate Tectonics .....   | 9  |
| Where the Action Is.....                                      | 13 |
| Moving Plates .....   | 21 |
| STEM Engineering Earthquake Challenge: Shakin' All Over ..... | 25 |
| Igneous Rocks .....   | 31 |
| Sedimentary Rocks.....  | 37 |
| Metamorphic Rocks .....                                       | 43 |
| The Rock Cycle: An Interactive Exploration.....               | 49 |
| Soil/Water Challenge .....                                    | 51 |

#### READ CAREFULLY BEFORE USING EARTH'S CRUST / LITHOSPHERE.

ANY USER OF THIS UNIT PERMANENTLY RELEASES ALL CLAIMS OF ANY TYPE OR NATURE IN ANY WAY ASSOCIATED WITH ITS USE.

As a condition of using **Earth's Crust / Lithosphere**, the user **assumes any and all risks** attendant to these activities and materials, including claims resulting from uses in any way resulting from or associated with activities or materials therein. The user is responsible for safety, health and welfare during activities. The user **waives** any and all claims that may result from its use, and **releases and holds harmless** the Center for Inquiry-Based Learning from any and all claims, demands, causes of action or damages which may accrue on account of bodily or personal injury, property damage, or death arising from the use of **Earth's Crust / Lithosphere**.

## **NC Essential Science Standards Covered by this Unit**

**6.E.2 Understand the structure of the earth and how interactions of constructive and destructive forces have resulted in changes in the surface of the Earth over time and the effects of the lithosphere on humans.**

- 6.E.2.1 Summarize the structure of the earth, including the layers, the mantle and core based on the relative position, composition and density.
- 6.E.2.2 Explain how crustal plates and ocean basins are formed, move and interact using earthquakes, heat flow and volcanoes to reflect forces within the earth.
- 6.E.2.3 Explain how the formation of soil is related to the parent rock type and the environment in which it develops.
- 6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil quality and stewardship.

**This teacher's guide is available online.**

Go to <http://ciblearning.org/lesson-materials> and click on "Grade 6 Earth's Crust / Lithosphere."

**Enter the password: lith6sci**

Copyright © 2017 by Center for Inquiry-Based Learning. All rights reserved.

Teachers may make photocopies of the support documents for classroom use.