

# The changing earth

## STEM road map for middle school, grade 8

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### Summary

What if you could challenge your eighth graders to help people recognise the inherent risks of living in a region that's prone to flooding, earthquakes and volcanoes? With this volume in *STEM road map curriculum series*, you can!

*The changing earth* outlines a journey that will steer your students towards authentic problem-solving while grounding them in integrated STEM disciplines. Like the other volumes in the series, this book is designed to meet the growing need to infuse real-world learning into F–12 classrooms.

This interdisciplinary, six-lesson module uses project- and problem-based learning to introduce the powerful idea that Earth is shaped by ongoing geologic processes that can alter our landscape in a short time. The module also helps students appreciate the nature and process of science, including the roles of evidence, conjecture and modelling. Students will learn about the rock cycle, including how its driven by the Sun's energy and heat from Earth's core. To support this goal, students will do the following:

- learn that Earth is a dynamic system, shaped by many geological processes that are driven by energy from the Sun and internally from Earth
- build a model to explain the evidence suggesting that Earth's surface has changed in the past and will continue to change the future
- evaluate claims based on provided evidence
- use mathematics content and skills to collect and analyse data to support or refute a claim and use appropriate graphics and tables to summarise data
- create a museum display to explore the geology of an area in North America or Great Britain. Students' displays will include scale models of influential rock formations in their assigned area and posters about topics such as geology's impact on culture and community.

The *STEM road map curriculum series* is anchored in the Next Generation Science Standards, the Common Core State Standards and the Framework for twenty-first century learning. In-depth and flexible, *The changing earth* can be used as a whole unit or in part to meet the needs of districts, schools and teachers who are charting a course toward an integrated STEM approach.

## Other resources

- *Human impacts on our climate: STEM road map for middle school, grade 6* (NST2113)
- *Amusement park of the future: STEM road map for the middle years* (NST5923)
- *Construction materials: STEM road map for high school* (NST5938)
- *Harnessing solar energy: STEM road map for primary school* (NST5954)
- *Transportation in the future: STEM road map for primary school* (NST5961)
- *Wind energy: STEM road map for primary school* (NST5978)