

Volcanoes & Geology unit study

A homeschool curriculum built around volcanoes and geology — plate tectonics, rocks, deep time and natural hazards, for K-12 learners.

GRADE BANDS K-2 · 3-5 · 6-8 · 9-12

FULL GUIDE <https://handsdowneducation.com/homeschool/volcanoes>

How to use this planner

The six weeks below are sequenced from the guide's sample week: five weeks that each take one core subject through the topic, then a showcase week that turns the portfolio into a final product. Run each activity at the level your child is at (the grade band notes tell you how), keep the output, and by week six you have a portfolio that shows the unit end to end.

Pace is yours. A week here is three to five working sessions; a topic that is going well can take two calendar weeks, and one that has run dry can be closed early. Tick the box when a week's output is in the portfolio.

Six-week scope and sequence

Wk	Focus	Key activity	Portfolio output	Done
1	Reading & Writing through volcanoes & geology	Read Pliny the Younger's eyewitness account of Vesuvius — the oldest surviving volcano report — then write a modern news bulletin from the same eruption.	Portfolio entry: the week's reading & writing piece, dated, with one line from your child on what they found out.	☐
2	Math through volcanoes & geology	Use the logarithmic Volcanic Explosivity Index to compare famous eruptions, and calculate how many Mount St. Helens equal one Tambora.	Portfolio entry: the week's math piece, dated, with one line from your child on what they found out.	☐
3	Science through volcanoes & geology	Build a layered sedimentary column in a jar, then identify three rock samples by testing hardness and reaction to vinegar.	Portfolio entry: the week's science piece, dated, with one line from your child on what they found out.	☐
4	Social Studies through volcanoes & geology	Map the Ring of Fire against population density and explain why people keep living on the most dangerous ground available — volcanic soil is extraordinarily fertile.	Portfolio entry: the week's social studies piece, dated, with one line from your child on what they found out.	☐
5	Art through volcanoes & geology	Draw a labeled cross-section of a stratovolcano, accurate enough to teach from — technical illustration as a study method.	Portfolio entry: the week's art piece, dated, with one line from your child on what they found out.	☐
6	Showcase and review	Choose one final product that pulls the unit together — a presentation, an exhibit, a field guide or a short documentary — and give the week to making it. Finish with a portfolio review: lay every week's output on the table and let your child narrate what changed in what they know about volcanoes & geology.	The final product plus a one-page unit summary in your child's words, filed with the portfolio.	☐

Running it at your child's level

K-2 learners do the classic baking-soda eruption (with the chemistry named honestly), sort rocks by look and feel, and learn what's under the ground they stand on.

Teens can work with real seismic data, study eruption prediction and its genuine uncertainty, and explore the geochemistry that distinguishes magma types.

A sample week, subject by subject

Reading & Writing

Read Pliny the Younger's eyewitness account of Vesuvius — the oldest surviving volcano report — then write a modern news bulletin from the same eruption.

Math

Use the logarithmic Volcanic Explosivity Index to compare famous eruptions, and calculate how many Mount St. Helens equal one Tambora.

Science

Build a layered sedimentary column in a jar, then identify three rock samples by testing hardness and reaction to vinegar.

Social Studies

Map the Ring of Fire against population density and explain why people keep living on the most dangerous ground available — volcanic soil is extraordinarily fertile.

Art

Draw a labeled cross-section of a stratovolcano, accurate enough to teach from — technical illustration as a study method.

Common questions

Isn't the baking-soda volcano a cliché?

It is — and it teaches acid-base reaction, not volcanism. Worth doing once, honestly labeled: the mechanism is chemistry, while real eruptions are pressure and gas.

We live nowhere near a volcano.

Every location has geology worth reading: road cuts, riverbeds and local building stone all record a history. Volcanoes are the hook; the rock cycle is everywhere.

How does this connect to other subjects?

Through deep time (which reframes all history), the geography of hazard and settlement, and the chemistry of minerals and magma.

Turn this into a full, standards-aligned curriculum

Generate a complete plan around volcanoes & geology for your child's grade and pace — free to try, no account required.
<https://handsdowneducation.com/curriculum/generate>