

Geology in the Gorge

From the Himalayas to the deepest, darkest depths of the Mariana Trench, humans have been fascinated for centuries with how our planet came to be and what makes it “tick.”

With such a revealing specimen in our own backyard, the New River Gorge is the subject of ACE’s hands-on geology curriculum. The first half of the day includes interactive lessons that examine the erosion and evolution that has exposed formations and our planet’s geological character in this thousand-foot gorge. Students learn the natural history of the New River Gorge, the factors that cause change and how geology affects ecosystems and economies.

Part two of our day takes on a very different sort of discovery. Students have the opportunity to climb the very cliffs our planet spent millions of years compressing into rock. It’s a tactile experience that drives home how our planet seems so unchanging but is in fact evolving all the time.

Objectives/Understandings:

- Make observations and measurements to identify materials based on their properties.
- Analyze and interpret data on the distribution of fossils and rocks.
- Explore and collect data to provide evidence of geologic timescale of Earth.
- Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.
- Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems.
- Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Sample Itinerary:

- Introduction (20 minutes)
- Triangulate location (30 minutes)
- Story of the New River Gorge (20 minutes)
- Measurements of geology (30 minutes)
- Geotechnical Engineering (60 minutes)
- Fossil hunting (30 minutes)
- Energy debate (30 minutes)
- Rock climbing (3 hours)