

# Geology and Landforms of Boulder County

(One class, 50 to 60-minute program)

**NOTE:** This outline is a suggested program template. Please tailor your program to be appropriate for your group. See the VN Webpage for geology activities & resources:

[www.bouldercountypenspace.org/naturalhistory](http://www.bouldercountypenspace.org/naturalhistory)

**Title:** Story in the Rocks – The Geology & Landforms of Boulder County

**Theme:** Boulder County has incredible diversity of geology and landforms because of mountain-building forces and the effects of weathering and erosion.

**Introduction (VNs) (8 -10 min.)**

- 1. What are some of the different landforms we can see in Boulder County?** Present examples with pictures/posters (e.g. plains, foothills, mesas, buttes, peaks, ridges, glacial cirques, rivers, creeks, lakes)
- 2. How do landforms change over time?** Forces of uplift, weathering, and erosion (**geology panels**)
  - Weathering: The breakdown of rocks into smaller pieces (freeze-thaw & chemical weathering)
  - Erosion: The movement of soil and rock from one place to another. (gravity, wind, moving water, and moving ice)
- 3. How has the landscape in Colorado changed over time?** (300 million years ago to present: Ancestral Rockies – Pangaea – Dinosaurs – Cretaceous Seaway – Modern Rockies – Ice Age – Present)
  - Posters from *Ancient Denvers* (300 million years ago to present)

**Geology Activities (12 min. per station)**

Divide the class into 3 groups to rotate through the three stations.

**Station 1:** Uplift and erosion

Geology panels to introduce uplift and erosion

**Erosion Activity**

**Station 2:** The three types of rocks (igneous, sedimentary, metamorphic)

Rock samples, Rock Cycle Diagram, & **Rocks Rock Activity**

- Where can you find each type of rock in Boulder County? (igneous & metamorphic: mountains & foothills; sedimentary: foothills & plains)

**Station 3:** Sedimentary rock layers

Changes in Colorado landscape over time (*Ancient Denvers* posters)

**Forming the Flatirons Activity**

**Conclusion (VNs)**

There are many places in Boulder County to observe and enjoy our diverse geology and landforms!