
Rock Cycle Adventures



Purpose: Students will play a game to illustrate the processes involved in the rock cycle.

Objectives:

Students will:

- Model the cycling of earth's materials by participating in the rock cycle game.
- Record their individual process as a mineral by taking notes in a journal during the game and by writing a story of their adventures after the game has ended.

Materials:

- Rock cycle diagram
- 5 color-coded rock cycle sign (sedimentary, magma, metamorphic, sediment, & igneous)
- Adventure envelopes with color-coded scenario cards
- Notebooks for recording adventures (not provided)

Time Required: 45 minutes

Appropriate grades: 6th-8th

NGSS and Common Core Standards:

MS-ESS2-1: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

CCSS.ELA-LITERACY.W.6-8.3: Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

Activity:

Introduction	<ol style="list-style-type: none">1. Begin by introducing the rock cycle (see background info and rock cycle diagram). Pull examples of each of the three rocks from the student kits (see rock key activity for types and descriptions) to describe the rocks each process creates. Students should be familiar with concepts like weathering, erosion, compaction, cementation, deposition, cooling, crystallization, subduction, uplift, and tectonic plate movements.2. Set up each of the 5 color-coded rock cycle signs, along with the envelopes containing the small scenario cards of the same color, in various areas of the classroom (or outside). On each scenario card is a bit
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	of a story, describing what happens to that student as a mineral and sends them on their way to another place in the cycle.
Body	<ol style="list-style-type: none"> 3. Break students up into 5 groups and assign each group a rock type (sedimentary, magma, metamorphic, sediment, or igneous). Instruct students to stand by the sign with their rock type on it, and record this rock type in their journals. 4. Instruct students to choose a card, read what it says (the process transforming that mineral) and go to the envelope it says to journey to – leaving the card in the color-coded envelope! All the while, students need to take notes on their journey, what happens to them, and where they end up. 5. Let the game go as long as you like, enough to let students experience various areas of the rock cycle.
Closure	<ol style="list-style-type: none"> 6. At the end, have students use their notes to write a story of their adventures, embellishing parts with detailed descriptions of what it would feel like to be weathered, compressed, compacted, erupted, etc. <p><i>Note: Like the study of geology, the stories the students will uncover may be fragmented. There may be gaps that don't flow together smoothly. It is important that the students use their information as pieces of the puzzle; in writing their story, they may have to fill in a few sections of their journey.</i></p>

Modifications:

- **Elementary:**
 - Instead of having each individual student pull their own cards, pull each card as a class and move a random object around the cycle (from station to station) to illustrate the movement of minerals.
- **High School:**
 - Instruct students to research local geologic history and incorporate aspects of the local history into their creative story.

