

## Odysseys Geological Journey Through Time



Odyssey the blue-furred otter adjusted his cool sunglasses as he gazed out over Lake Jocassee. On this special day, he was joined by a group of 5th graders from Tallulah Falls School on a cool geological expedition. Their leader, Mr. Franklin, had promised an exciting adventure through Earth's history.

"Alright, everyone," Mr. Franklin called out, "today we're going to explore how the Earth has changed over millions of years, right here in the Jocassee Gorges!" Odyssey led the group to an exposed rock face near the shoreline. Mr. Franklin pointed out the striking patterns in the rock. "This is Henderson Gneiss, the major rock type we see around the lake," he explained. "It has a fascinating history." "What kind of history?" asked Fern, one of the students. "Well," Mr. Franklin began, "this rock started as magma deep within the Earth. Over time, it cooled and crystallized into an igneous rock. But that was just the beginning of its journey!" Odyssey chattered excitedly, remembering what he'd learned about metamorphic rocks. Mr. Franklin nodded, "That's right, Odyssey! These rocks underwent intense heat and pressure, transforming them into the gneiss we see today. This process is called metamorphism."

The group hiked further, reaching a viewpoint overlooking the lake. Mr. Franklin pointed out some interesting features of the rock face. "See those straight lines cutting across the rock? Those are planar fractures or joints. They're weak points where water can seep in."

"What happens when water gets in there?" Rico, another student, asked.

"Great question!" Mr. Franklin replied. "When water freezes in these cracks, it expands, making the cracks bigger over time. This freeze-thaw process is one way these rocks weather and break down."

As they walked along the shore, Odyssey spotted something glinting in the sunlight. "Look!" he exclaimed, pointing with his webbed paw. "Ah, those are quartz veins," Mr. Franklin explained. "They formed when hot, mineral-rich fluids flowed through cracks in the rock and then cooled, leaving behind these grey streaks of quartz."

The students were fascinated by how much history was recorded in the rocks around them. Mr. Franklin continued, "While we can't see fossils here because of the intense metamorphism these rocks underwent, we can still learn a lot about Earth's past from them." He pulled out a globe and some puzzle pieces shaped like continents. "For instance, by studying rocks like these and comparing them to rocks in other parts of the world, geologists have pieced together the story of how continents have moved over time."

As the day went on, they observed more geological features, including a recent landslide. "This shows us how the landscape is always changing," Mr. Franklin explained. "Weathering, erosion, and events like landslides constantly shape the Earth's surface."

Odyssey gestured towards the lake, and Mr. Franklin nodded. "Exactly! The water in the lake is slowly eroding the shoreline too. These processes happen over hundreds or thousands of years, gradually shaping the landscape we see today."

As the day came to an end, the students were buzzing with excitement about all they'd learned. Odyssey watched proudly as they boarded their bus, chattering about metamorphic rocks, weathering processes, and the ever-changing Earth.

Mr. Franklin turned to Odyssey with a smile. "Thanks for your help today, Odyssey. You're a natural geology assistant!" Odyssey chattered happily, already looking forward to the next adventure in the fascinating world of the Jocassee Gorges' geology.

For miles and miles away Odyssey could hear the children singing "Lake Jocassee (Lake Jocassee) We Love You (we love you), We Promise To Protect You (we promise to protect you), From Now On (from now on)!" Odyssey thought to himself..... "What a delightful sound to lull me to sleep for some much-needed rest."