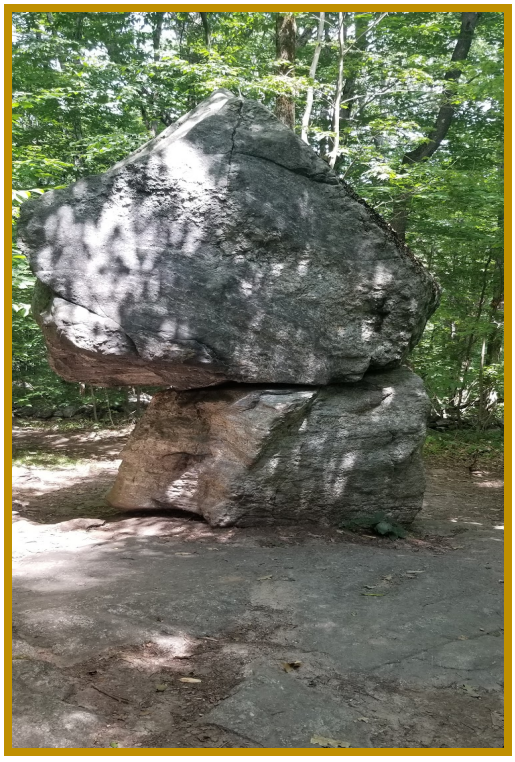
Geology on Wachusett Mountain

Wachusett Mountain is considered, in geologic terms, a monadnock -- a mountain that resisted erosion better than the surrounding land and stands alone above the lower hills.

Millions of years ago, the folding of the earth's crust created what we know today as Wachusett Mountain. When the mountain was young, it may have stood as high as 22,000 feet above sea level! Fast forward to thousands of years ago when icy glaciers pushed down from the north and buried the mountain under a mile of ice. After the glaciers melted, the acts of weathering caused parts of the mountain to break into piles of rock creating unique habitats which provided shelter for animals and a rich soil base for sustaining animal and plant life. The combined impacts of glaciers, weathering and erosion helped shape the mountain we see today. Wachusett Mountain remains as the highest point in eastern Massachusetts at 2,006 feet above sea level.



How Did These Two Boulders Get Stacked One Upon the Other?

Thousands of years ago a glacier (ice sheet) moved across New England pushing rocks and sediment. As the glacier traveled it carried large and small boulders with it, often for many miles. When the glacier melted, the boulders it was carrying were randomly dropped at new locations. Boulders that have been transported by a glacier are called ***glacial erratics***. Balance Rock is an example of a glacial erratic.
These two boulders were pushed on top of each other by a large sheet of moving ice and have been balancing on top of each other for thousands of years! Balance Rock is evidence of the glacial activity which helped shape Wachusett mountain.

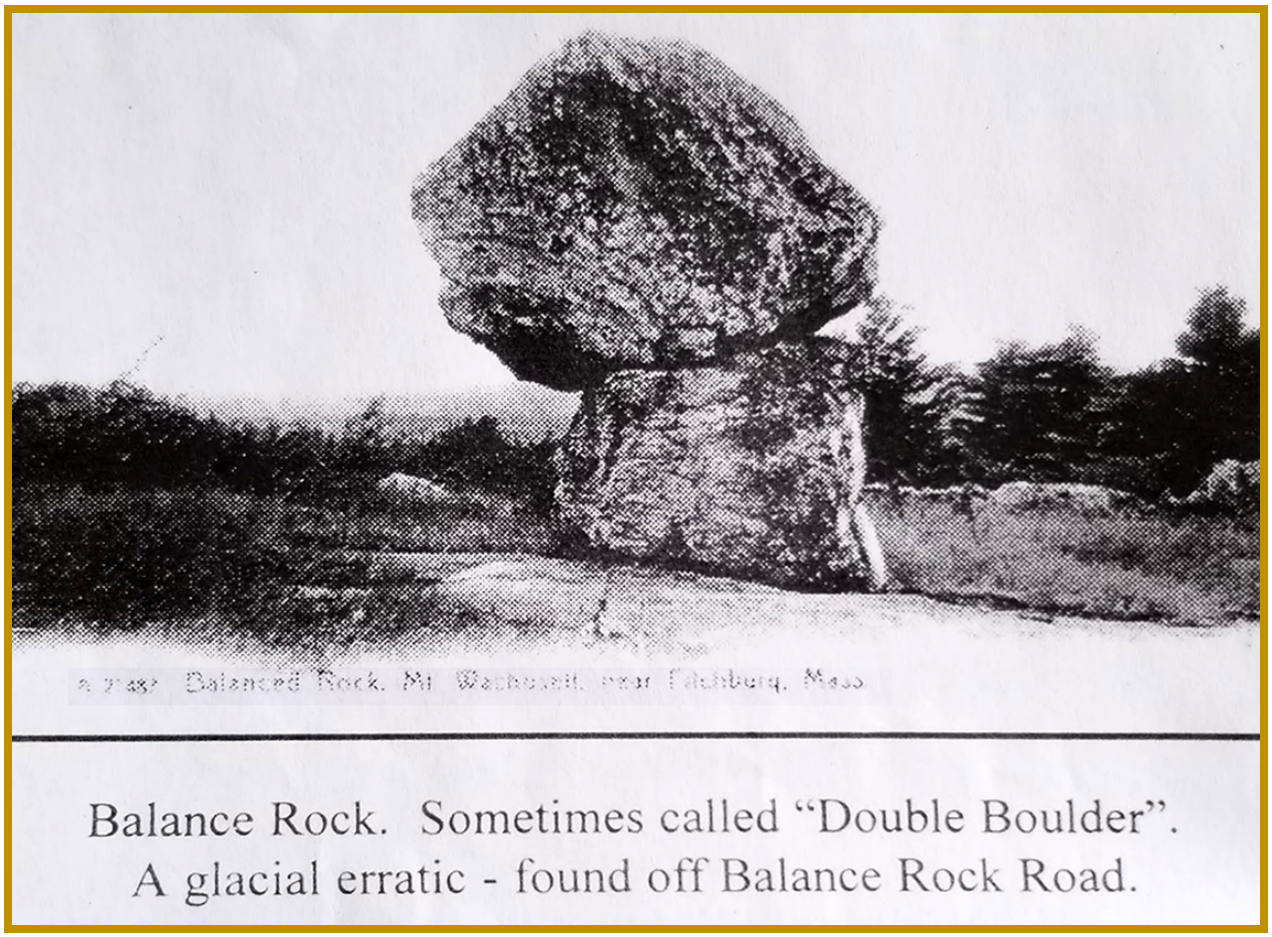
Activity ideas for Balance Rock Trail

(Suggested uses- a science journal entry or as discussion prompts for small groups)

Up Close with Balance Rock

Observations: Make a list of all the different colors and textures you see up close on the rocks. What do you think some of them represent? Do you find the same ones on each rock? Why or why not? What are some other ways the rocks are different or the same? Describe anything special that you recognize about Balance Rock.

Try This: Find a way for you and a partner to see each other through the rocks?



Looking Back: What are some differences you notice from this picture taken of Balance Rock in the 1800's compared to what you see at Balance Rock today?

Think Ahead: Imagine you could return to these rocks in the future. What changes would you expect to see in:

1 year? 100 years? 1,000 years? 10,000 years? 1,000,000 years?

Gather More Evidence:
Look for other examples of glacial erratics (huge boulders dropped by ice sheets) up in the woods or close to the trail.

- How does their size compare to Balance Rock?

Glacial till is scattered all over the mountain in the form of rubble or broken pieces of stone. Hundreds of years ago, Native Americans, farmers and enslaved people played a part in clearing the till to build stone walls. It is estimated that New England and New York combined still have close to 120,000 miles of stone walls. (Source)

- Locate some of the stone walls along the trail and estimate how far the wall might extend all the way to its end.
- What info did you and your partners use to make your estimate?

Related Vocabulary

Monadnock- a mountain that resisted erosion better than the surrounding land and stands alone above the lower hills.

Glacier - a slowly moving thick mass or river of ice formed on mountains or near the poles when fallen snow gets compacted into ice over many centuries

Glacial Erratic- boulders that have been transported by a glacier

Glacial Drift- material deposited by a glacier. (two types- till and stratified)

Glacial Till - unsorted, unstratified rubble or broken pieces of stone dragged and dropped by melting ice

Stratified Drift - sorted and stratified debris (sand and gravel) deposited from glacial meltwater.