

# How the red in Red Mountain came to be

**Dear Science Mine:** Why is Red Mountain red?

— *A Butte resident*

**Answer:** Red Mountain is one of the three peaks that form the skyline of the Highland Mountains south of Butte. These mountains are up-lifted blocks of very ancient sedimentary rocks (around 1 billion years old) that were once deposited as sand and mud in a large depression that occupied most of present-day western Montana. Many thousands of feet of sediment accumulated in this depression — the Belt Basin— and the rocks became what geologists call the Belt Supergroup.



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Within the Belt Supergroup, many distinct formations have been named. The rocks that make up Red

Mountain belong primarily to the Greyson Formation, a dark-colored mudstone that has largely been altered to slate. During the long time that the original sediments were subjected to deep burial, lithified to form rock, and finally uplifted to form mountains, the rocks underwent numerous chemical changes that formed new minerals in the rocks.

In the Greyson Formation, a large amount of iron sulfide accumulated to form such minerals as pyrite. When the iron sulfide minerals weather, the iron “rusts,” or oxidizes, turning the rock various shades of red.

Thus, Red Mountain is red because of the weathering of the iron-sulfide minerals within its rocks.

If you hike the trail leading up to the fire tower, you will have good opportunity to examine the Greyson Formation; although, it is not the only kind of rock present on the mountain. It is dark-colored where its broken surfaces are fresh, but stained red where it has been weathered by air and water.

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