

Brush Rake Trail Nature Hike

To find Brush Rake Trail, take chairlift 4 to the top of the mountain. After getting off the lift, turn left and follow signs for Brush Rake Trail. The hike is a 1.7 mile loop, the last of it returning on the road. It should take 1 ½ - 2 hours to complete. Please remember to bring water, go at your own pace, and enjoy the beautiful mountain air and scenery!

1. The majority of our water comes from melting mountain snow with summer thunderstorms providing additional moisture. This brook is fed by snow-melt that runs off or soaks into the soil to emerge later from ground seeps and springs. Because this brook is west of the Continental Divide, its water flows into the Colorado River in Utah by way of the Animas and San Juan Rivers.
2. We've all seen downed logs before, but have you ever stopped to think about their importance in the forest? Logs provide habitat for lots of animals living in the forest, such as ants, termites, mice, pillbugs, millipedes, snakes and salamanders. If you want to check them out, find a small log and very carefully roll it over. After investigating, roll it back so those animals still have a home.
3. Complex geological processes have formed the San Juan Mountains over eons. This rock outcrop is shale, a sedimentary type of rock formed by the deposit of clay eroded from the Ancestral Rocky Mountains about 300 million years ago. In front of you is Engineer Mountain, 12,968 high. The horizontal bands of rock that form the

base of Engineer Mountain are also sedimentary. The vertical columns of rock at the top of Engineer Mountain were formed by the cooling of molten rock that was forced between the sedimentary layers at least 40 million years ago.

4. Although you may not see many animals in this forest, we can often find evidence that they are here. Here you see evidence of a small mammal – the holes in the ground could be homes of pocket gophers, chipmunks, or even golden mantled ground squirrels. While you're walking, look for other evidence of animals, such as tracks in the mud, chewed leaves or twigs, and scat (a.k.a. animal droppings!)
5. In front of you is Grayrock Peak, 12,501 feet high. The structure of Grayrock is similar to Engineer Mountain. On the lower flanks of the mountain you can see groves of light green aspen trees and stands of darker green spruce and fir. Although aspen trees produce copious seeds, aspen here in the west reproduce almost entirely from the roots. Because of this, an entire hillside like the one in front of you may be a single genetic organism. Aspens also grow best after a disturbance such as a fire and may dominate an area for many years.
6. The forest at this elevation is made up primarily of Engelmann spruce and sub-alpine fir. How can you tell them apart? The easiest way is to check the needles. Spruce needles are sharp to the touch and

square in cross-section – you can roll them between your thumb and forefinger. Fir needles are flat and friendly – not sharp to the touch. In addition, spruce cones hang down from the branches and last all winter; fir cones stand straight up on the branches and disintegrate during the winter. Both of these trees have narrow crowns made up of short branches – they are adapted to easily shed the heavy snow loads of this deep snow country.

7. Brush Rake Trail, where you're walking, is a multi-use trail. You may see mountain bikers here as well as other hikers. Other trails in San Juan National Forest may also be used by motorcycles and horseback riders. Remember to always be courteous to other trail users, and 'share the trail'.
8. Stop and listen. Close your eyes, and cup your hands around your ears. How many different birds, or just natural sounds can you hear? Many times we hear more birds than we can actually see. Common birds at this elevation include: gray jays, mountain chickadees, northern flickers and stellar's jays.
9. The mountains in front of you are called the West Needles Mountains, or sometimes, the Twilight Peaks. The peaks you see are all above 13,000 feet. These mountains were formed about 65-70 million years ago by violent faulting and thrusting that caused ancient rocks deep in the earth to be

pushed up through the overlying layers of sedimentary rock. The remains of those sedimentary rocks have eroded away leaving the 1.75 billion year old rock we see today. The rock outcrops at the bottom of the peaks were smoothed by glacial ice that extended all the way to the north edge of Durango 20,000 years ago. The glacier had melted by 12,000 years ago.

10. The “moss” draped on the branches of the trees here is not moss at all, but a lichen. Lichens are colonies of two organisms – a fungus and an algae – that live together. The fungus provides support and some minerals; the algae produces the carbohydrates that they both need. A lichen gets its nutrients and moisture from the air. A lichen is not a parasite although it seems to grow best on dead or unhealthy trees. Those kinds of trees provide more opportunities for exposure to the air, sunlight and moisture than trees with thicker crowns. A good way to remember the composition of a lichen is the verse: *“Freddy fungus and Alice algae took a like’n to each other.”*
11. The Boneyard – Where do old ski lifts, rollers and snow guns go when they retire? To the boneyard, of course! Although not necessarily ‘natural’, this old equipment is interesting to look at, and think about how things were done ‘in the old days’! Please be sure to stay off the equipment, as it is very dangerous to climb on.
12. Just like the log we saw earlier in the hike, standing dead trees, or snags, also have an

important role in the forest. Many wildlife species use them for nesting, roosting, perching, or even territorial displays. Woodpeckers, for example, find that they are a good source of insects to eat. Raccoons might use the hollow insides for a den. Bears might do the same in very large snags. Bald eagles may use them for a perfect nesting site. Look closely at this snag for evidence of animals, including insects!

13. A forest is constantly changing. Trees die and become snags or downed logs, and as they decompose, they return nutrients to the soil for new growth to appear. The seedlings seen here found a perfect spot in the sun to germinate and grow. As they get larger, the stronger ones will out-compete the others, and grow to be large trees we see around us. Using the clues we gave you at station #6, can you tell if these are fir or spruce seedlings?

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