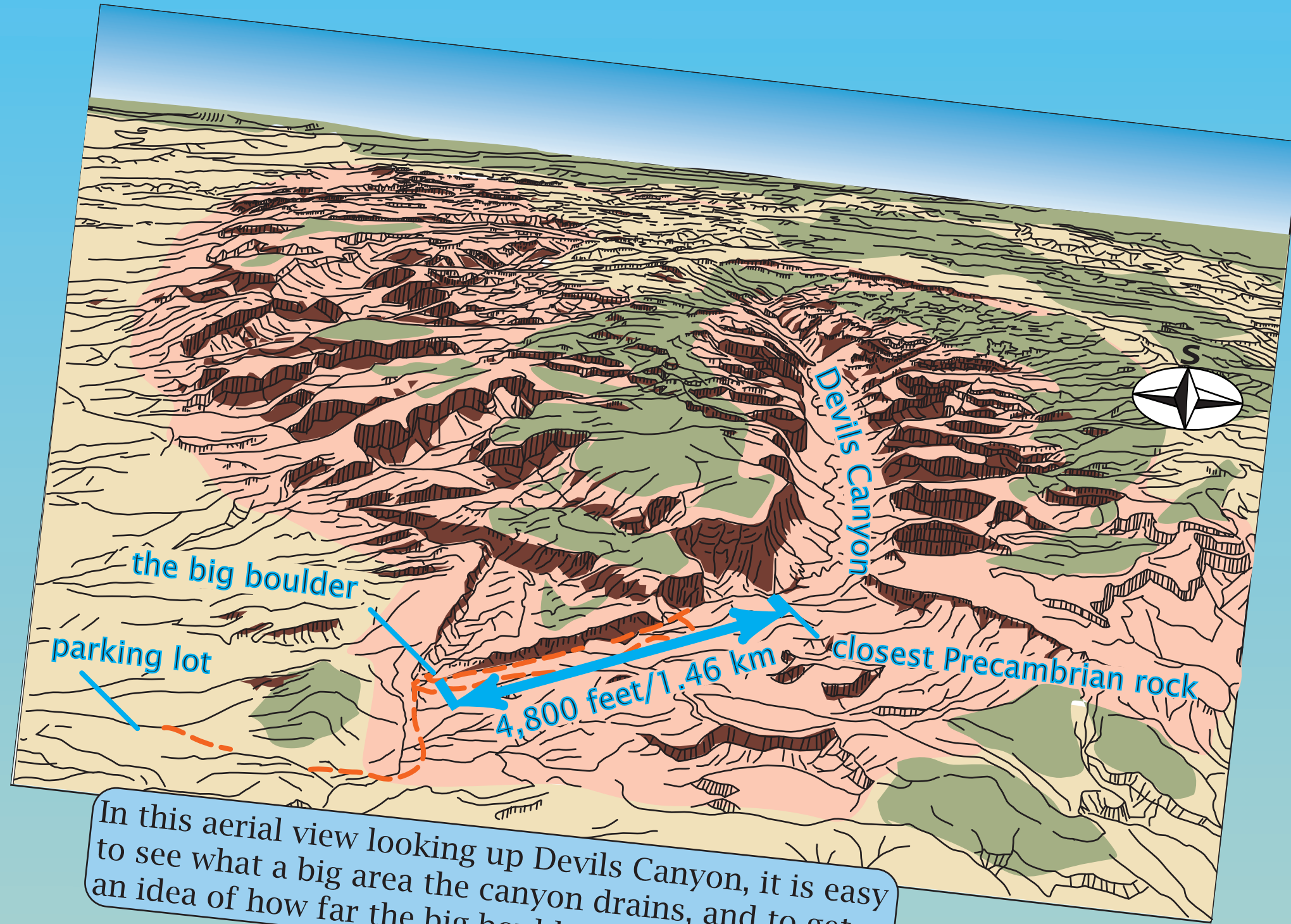
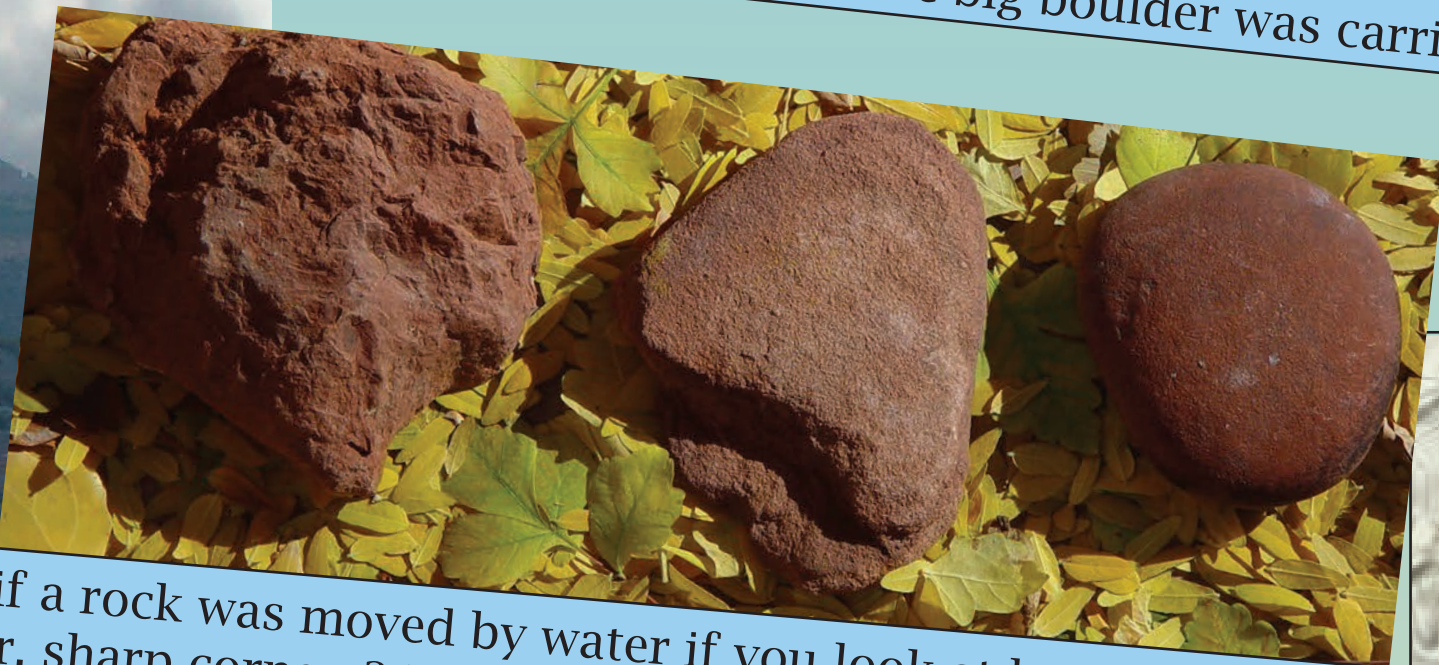


18. Flash Floods Unleash Nature's Raw Power

Flash floods are very common in the desert where thunderstorms rain down a lot of water faster than it can sink into the ground. Flash flood waters race down canyons, carrying mud, rocks, and torn up plants. If there is a lot of mud, the floods turn into mud flows. A flash flood can happen in just one valley or in many, depending on the size of the storm. Flash floods don't usually last long, just an hour or two from start to finish, but they cause more erosion than years of quiet weathering.



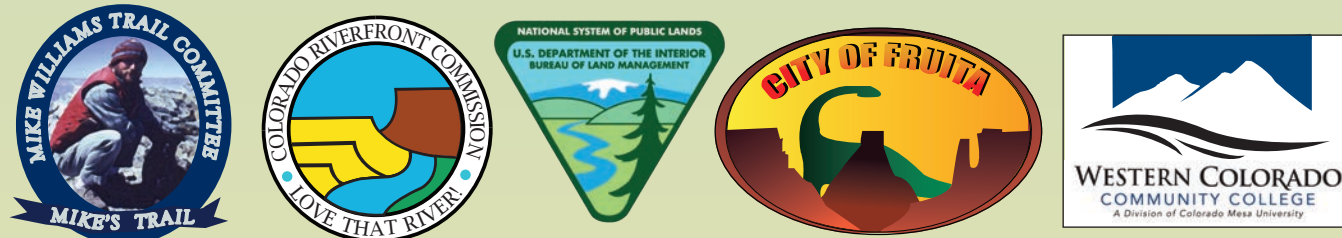
In this aerial view looking up Devils Canyon, it is easy to see what a big area the canyon drains, and to get an idea of how far the big boulder was carried.



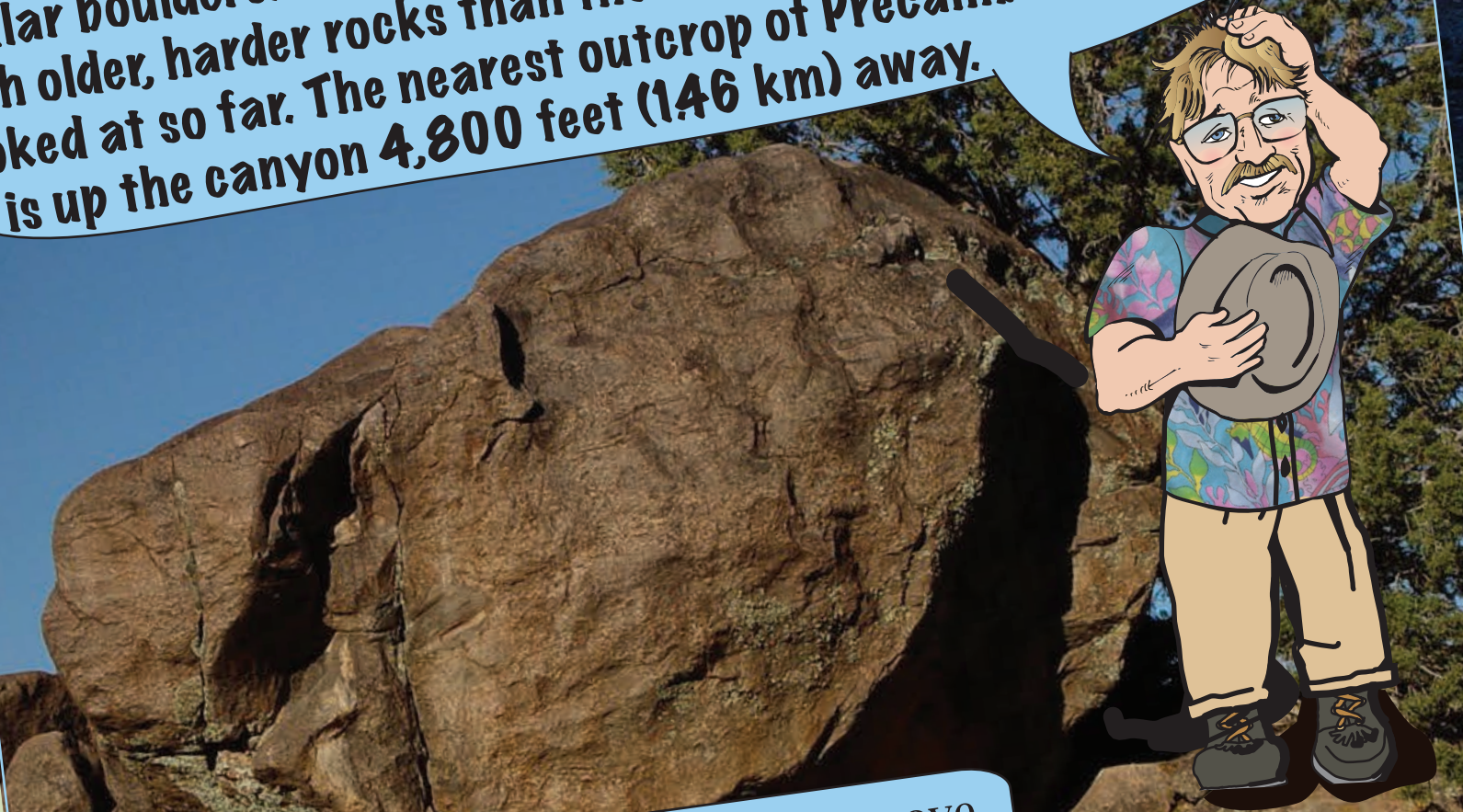
You can tell if a rock was moved by water if you look at how well rounded it is:
— All angular, sharp corners? Just fell from a cliff (above, at left).
— Corners rounded but some rough sides? Rolled and tumbled a little way, possibly by a flash flood (center).
— Well rounded and smooth all over? Carried a long way, like the Colorado River gravel on the east side of Opal Hill (right).



Be alert for flash floods any time there are thunderclouds around. A cloudburst up the canyon can cause a flood downstream where it hasn't even rained! Flash floods move fast. You can't outrun one. If you hear a flash flood coming, climb to higher ground right away!



and different
How did this big rock get here? As you walk up trail D3 along the stream channel, you will see many similar boulders. These are Precambrian metamorphic rocks, much older, harder rocks than the sedimentary ones we have looked at so far. The nearest outcrop of Precambrian rocks is up the canyon 4,800 feet (1.46 km) away.



It probably took several flash floods to move this boulder so far, rolling and bouncing it down the canyon. When the most recent flood crashed into the channel's curve, it lost some of its power, and heaped some of its load here

