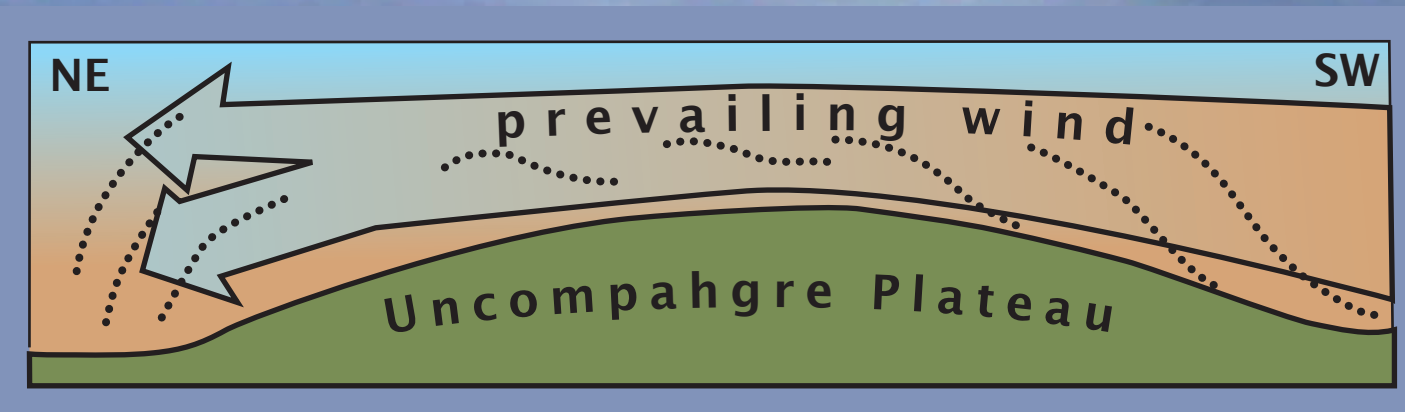




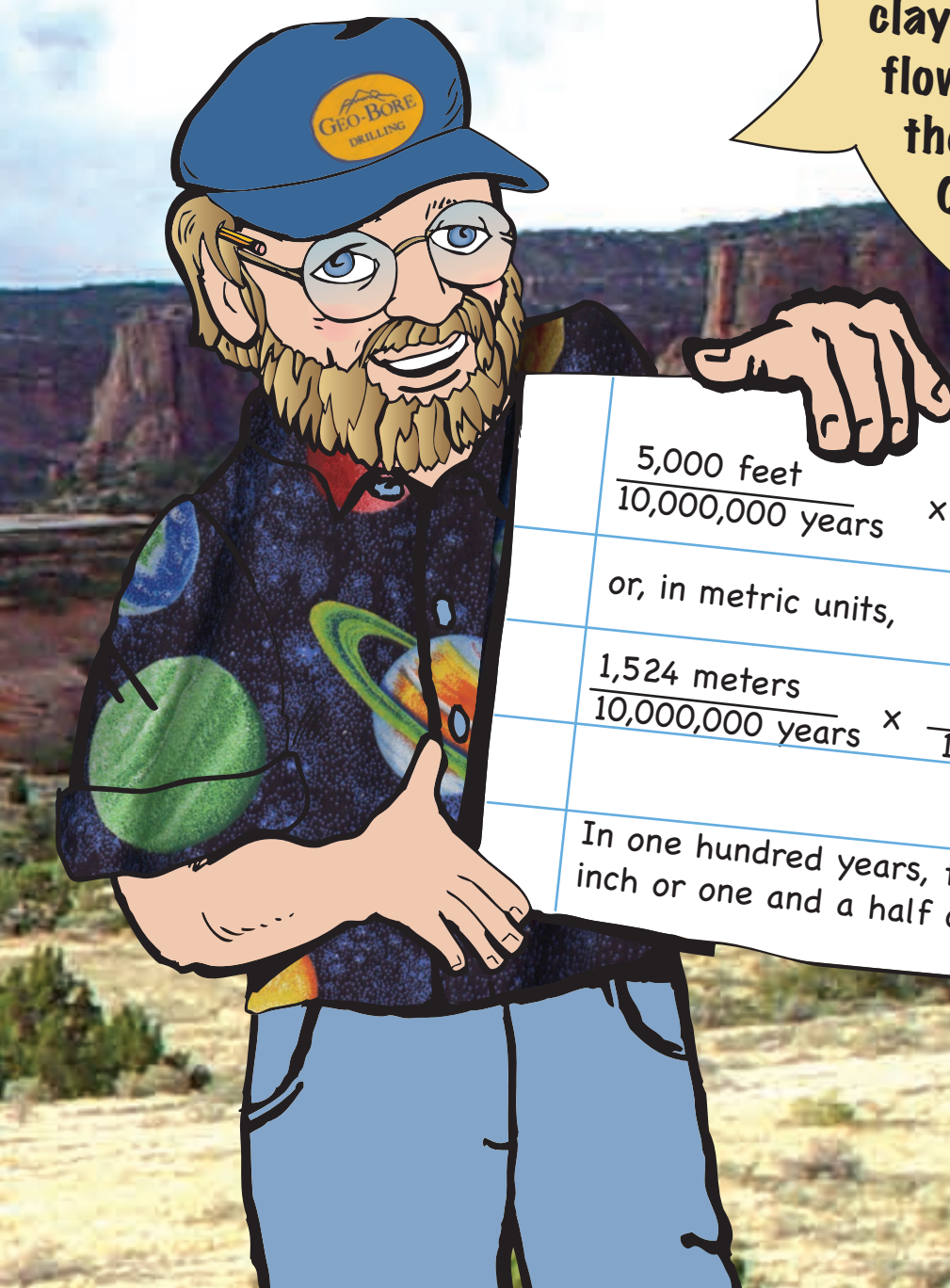
Eolian Sand: New From Old, As The Wind Blows On And On

Today's landscape is still evolving. Wind blowing across desert land to the west picks up silt and sand that have weathered from the rocks and carries them across the Uncompahgre Plateau. As the wind reaches this valley, the dropping land surface gives the wind more room, so the

wind slows down. A lot of the sediment drops out. Wind blown sand and silt now cover the valley's gentle slope wher water doesn't wash it away. Plants grow on the sediment, holding much of it in place.



Here's something intriguing to think about: The Mancos Shale, which underlies the Grand Valley northeast of the Colorado River, is about 5,000 feet (1,524 m) thick there. The shale took about 10 million years to accumulate on the bottom of a shallow sea. Its fine muds and clays were carried into the sea both by rivers flowing eastward from mountains in Utah and by the wind, which carried ash from volcanoes in California. Can you figure out how much sediment accumulated at the bottom of the ocean during one year?



$$\frac{5,000 \text{ feet}}{10,000,000 \text{ years}} \times \frac{12 \text{ inches}}{1 \text{ foot}} = 0.006 \text{ inch per year}$$

or, in metric units,

$$\frac{1,524 \text{ meters}}{10,000,000 \text{ years}} \times \frac{100 \text{ cm}}{1 \text{ meter}} = 0.01524 \text{ cm per year}$$

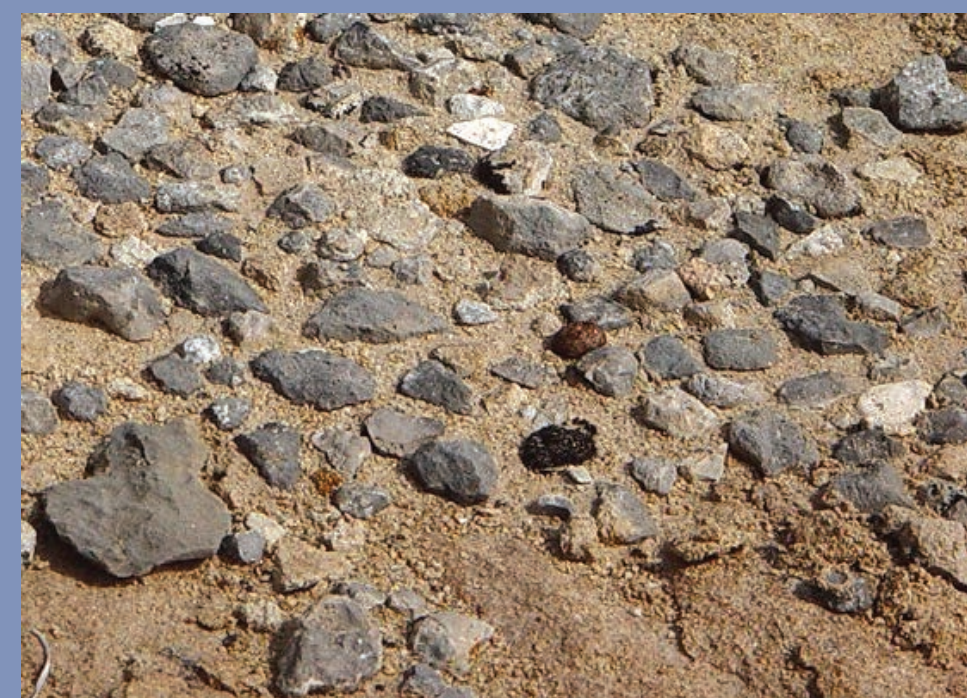
In one hundred years, that's only a little over half an inch or one and a half centimeters!



Here, without plants covering it, you can see there is a lot of sand.



Some of the sand is partly cemented with white caliche, calcite carried in by ground water.



Here wind has carried off the sand, leaving a layer of small pebbles. Called **desert pavement**, the layer protects the sand below it.



In many areas, a dark living crust of microorganisms called **cryptobiotic soil** holds the sand together. Here, you can see how easily the sand washes away without it.



Cryptobiotic soil is the first step. Next moss, then grass, then bushes and trees are able to take hold. Cryptobiotic soil is very fragile. Please stay on trails to avoid damaging it.

