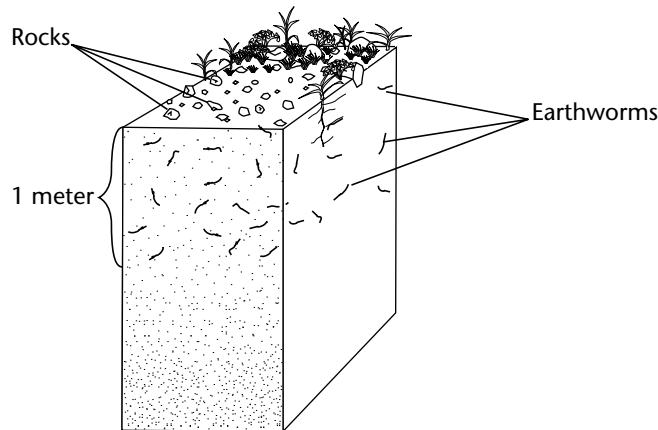


Sponges, Cnidarians, and Worms ▪ *Enrich***The Mighty Earthworm**

As a young man, Charles Darwin noticed that over the space of several years, all the rocks in a field near his house in England seemed to be sinking into the ground. Eventually he inferred that earthworms were causing this. Earthworms tunnel through the top meter or so of soil. They feed by taking in dirt and dead plant matter through their mouths. The dirt passes through the earthworms' bodies and is deposited in their tunnels and on the surface of the soil. The little piles of deposited dirt are called castings. As the worms remove soil from beneath the rocks, the rocks sink. Eventually, the rocks become buried in castings.

The diagram below represents the beginning of a simple experiment that Darwin performed. He spread a layer of small, white rocks on the surface of a field. Twenty-nine years later, the rocks could not be seen. Darwin dug a trench in the field to see what had happened to the white rocks. From their location, Darwin calculated that the earthworms in his field were depositing about 5.5 mm of castings on the surface each year.



Answer the following questions on a separate sheet of paper.

1. After 29 years, about how far below the surface were the bottoms of the rocks?
2. Next to the diagram above, draw a diagram showing a cross section of the soil representing what Darwin would have seen in his trench.
3. Assuming that the rate of burial stayed the same, how long would it take for the rocks to be buried 50 cm deep?
4. Scientists speculate that the rocks would never be buried more than a meter deep. Explain why this might be so.