

Nadia Lessing  
Glenelg High School  
11th Grade  
Soil Challenge

### Lessons Learned

- 1.) I am surprised to discover that there are different levels of nutritional value in soil. The beauty of a diverse ecosystem never ceases to amaze me. The two common distinctions between healthy soil and nutrient deprived soil is the texture. Unhealthy soil will be dry, rough, and crackly; while thriving soil is moist, will likely have animals/bugs, and varying plant roots.



- 2.) During my quest, I took samples from dirt in two separate places in my yard. Observing these samples, even if just visually, encapsulates the differences so distinctly. I have never taken the time to experiment with dirt because it was all the same, but this really changed my perspective on the ground beneath my feet!

**RED:** This sample is from a forested section of my yard that is densely compacted with wildlife. As shoes, the dirt is dark which indicates that it is moist and nutritious. Additionally, as I sifted through the dirt, the roots and occasional worms became more apparent as seen in the photo. There is a small amount of plants as well that I scooped as well, with a vibrant green color.

**ORANGE:** This dirt sample was taken from under the deck of my house. Sunlight is minimal, plants are minimal, along with everything else. The dry texture is due to the lack of moisture. The only plants visible were dead pine leaves, and the few plants that somehow grew.

- 3.) From this quest I also discovered the benefits of carbon dioxide for the soil. As we thrive off of oxygen, the plants and environment crave carbon dioxide, which leads us to another way we can solve the growing problem of unhealthy soil!

### How can we reduce unhealthy soil?

- 1.) It is obvious that an essential part of soil sustainability is maintaining an effective ecosystem and capturing a sufficient amount of carbon dioxide within, hence why such organized farming methods used today suck the life out of the dirt. Therefore, one of the simplest yet most efficient ways to encourage this is to increase plants amongst the surface area of dirt. The plants will naturally cast carbon into the soil, making it healthy once again.
- 2.) With the demand for food being the main reason why farms over harvest nutrients from the ground, one way we can strive for better agricultural practices is to stop supporting them. There are more ways to get produce, such as greeting your own small garden or supporting local small farms who prioritize nutrients.
- 3.) And finally, on a more widespread note, the overuse of chemicals imbalances the soil's natural ecosystem. Not only do fertilizers and glyphosates affect the soil on farms, it also impacts the water streams as well because of runoff. In one huge project, or just one step at a time, advocating against these harmful practices will make a change one day. Therefore we should all work our best to let people know about regenerative agriculture for the future of our soil, and one day, we will change the world!

