

Digging into Soil

Soil is an important part of life on Earth, without it we would not have the food we eat or the plants we enjoy. This activity will break down the components of soil and allow you to see it being created in real time.

Components of Soil

Abiotic Factors

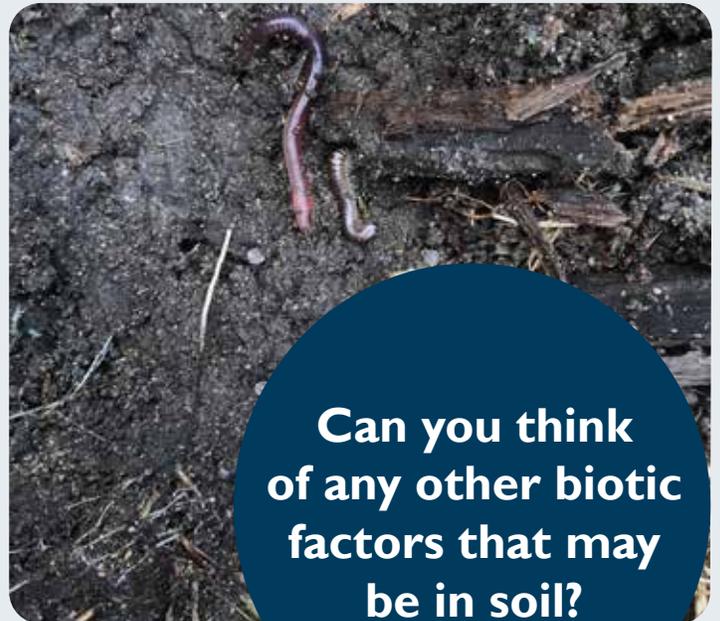
Abiotic factors are the non-living parts of soil, like water, air, and minerals.



How do you think abiotic factors play an important part in growing plants?

Biotic Factors

Biotic factors are living things that are or were once living in soil, like worms, pill bugs, microorganisms, and plants.



Can you think of any other biotic factors that may be in soil?

Abiotic factors and biotic factors both play important roles in making up soil. Abiotic factors of soil provide nutrients for plants to grow. Minerals combined with water and air help the plants grow big and strong, just like food helps our bodies grow.

Biotic factors, like worms and pill bugs, slowly break down leaves and other organic matter. As they eat their

way through the leaves on the forest floor their waste becomes a part of the soil. Their movement through the leaf litter and soil helps to mix everything up; this process is called bioturbation.

Watch how bioturbation happens with the activity on the next page.

Bioturbation Activity



Begin with a large clear contain with holes is the lid. Jars, storage tubs, and old aquariums all work well.



Collect enough soil to make an even 3-4in layer in the bottom of your container. Next collect enough dead leaves to completely cover the soil in your container. Be sure to leave enough space between the lid and the top of the soil.



Next collect any worms, pill bugs, snails, or slugs you can to add to your container. Be sure to place some of the critters under the leaves and on top. 10 tiny critters should be enough.



Place your container with its contents in a cool place. Be sure to keep the soil moist, but not soggy.

Now that your container with its contents are ready, let it sit for a few weeks. Take a picture of it daily to track its progress. When you decide to end your project and return the contents back to your yard and answer these questions.

- What changes happened in your container over time?
- How do biotic factors and abiotic factors work together to create healthy soil?
- What do you think would happen if the biotic factors were removed from the container?