

**Get to know  
the soil with**

**DASY**



## **Introduction**

Soil not only allows us to move by walking on it. It is also a varied landscape full of life, which enables plants to sustain and feed themselves. It is the place where many animals build their home and find their food. "Get to know soil with Dasy" is a coloring book guided by one of their inhabitants, Dasy, who knows, well this beautiful and hidden territory.

**Keep soil alive, protect soil biodiversity.**

**Dasy is a nine-banded armadillo (*Dasypus novemcinctus*). This species originated millions of years ago in South America, but since then it has migrated north and now can also be found in Central and North America. Armadillos dig tunnels to live in and search for food.(1)**

Hi, my name is Dasy.  
Come and explore with me  
why soil is a natural resource.  
You can color my nine bands!



**Color the different countries.**



I was born  
in Mexico.  
Can you color  
it green?



**Match the text with the correct image.**

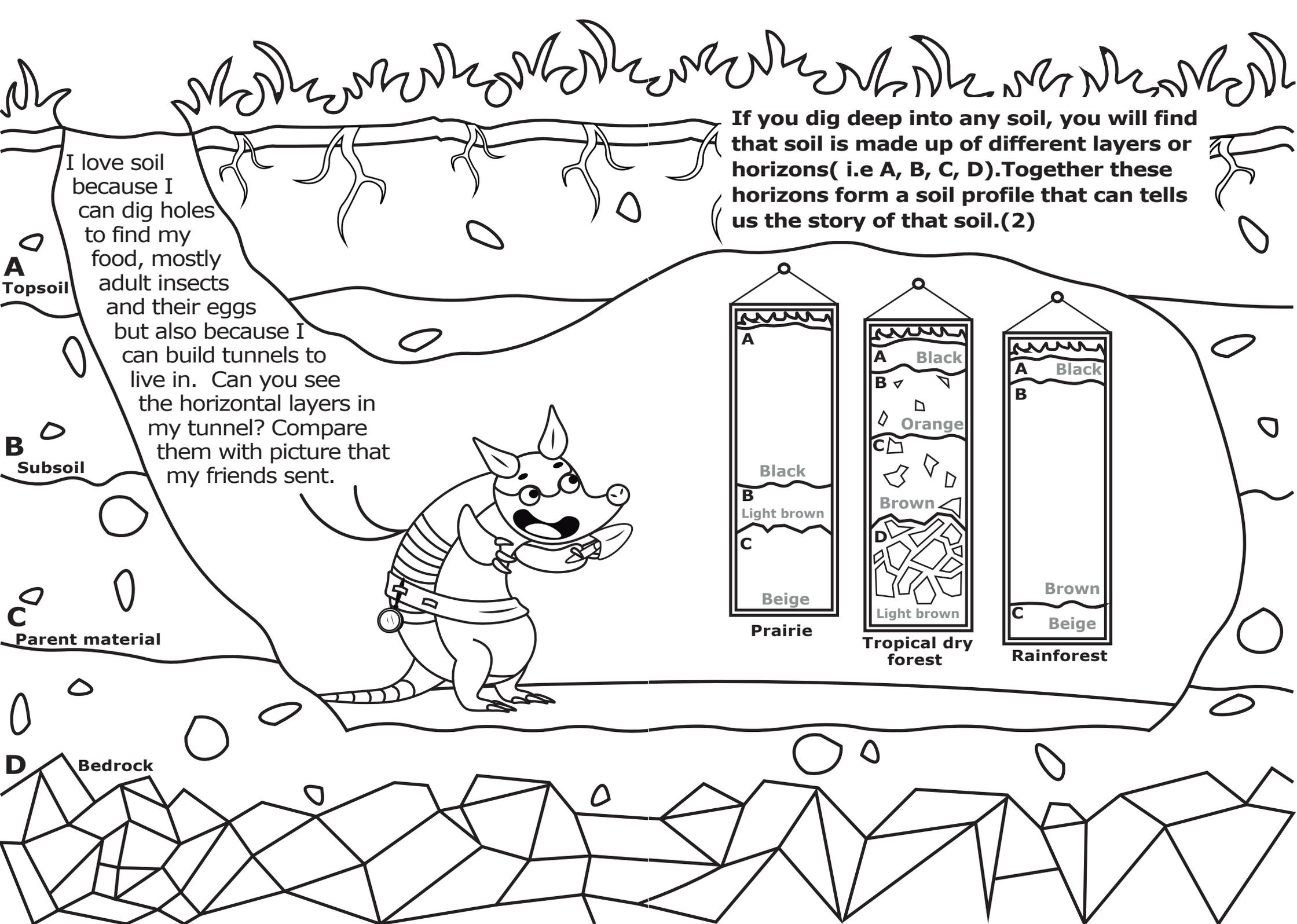


View my postcard collection to see where other armadillos live.

Dasy and friends  
The soil here in the prairie is usually soft and has a dark color, that means it is very rich with lots of nutrients for plants and other organisms. Although the grasses here are not very tall, their roots can be longer than the plants. (2)

Dear Dasy and friends  
I live in a tropical dry forest where we have a dry and wet season. Most trees lose their leaves in the dry season. The soil here has a lot of stones, it is difficult to dig and the nutrients are mostly near the surface. But those nutrients help many different kinds of bugs live here. (2)

Hi Dasy and friends  
I live in the tropical rain forest near the Amazon river. The climate here is typically warm and wet because it rains buckets year-round. These soils are very old and poor in nutrients because most of the nutrients are stored in the plants. (2)



If you dig deep into any soil, you will find that soil is made up of different layers or horizons( i.e A, B, C, D). Together these horizons form a soil profile that can tell us the story of that soil.(2)

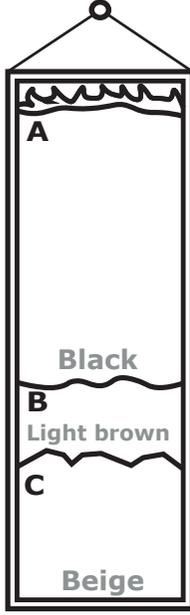
I love soil because I can dig holes to find my food, mostly adult insects and their eggs but also because I can build tunnels to live in. Can you see the horizontal layers in my tunnel? Compare them with picture that my friends sent.

**A**  
Topsoil

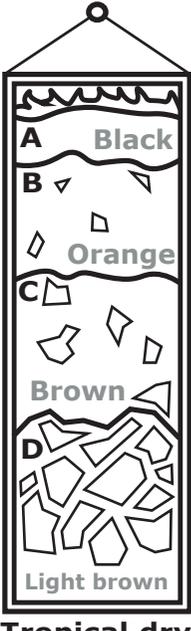
**B**  
Subsoil

**C**  
Parent material

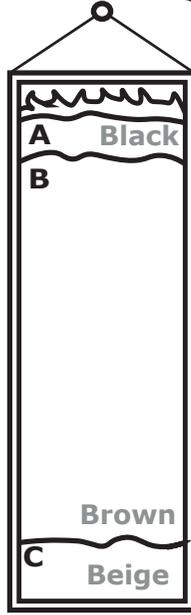
**D**  
Bedrock



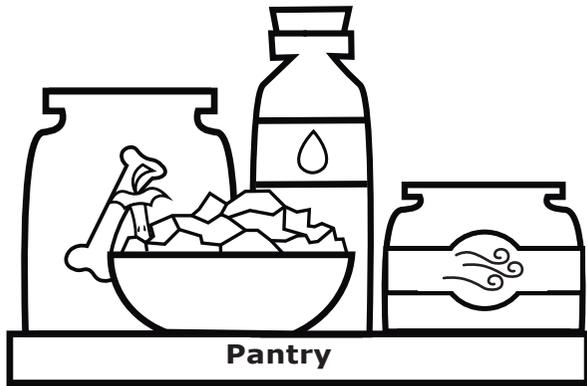
Prairie



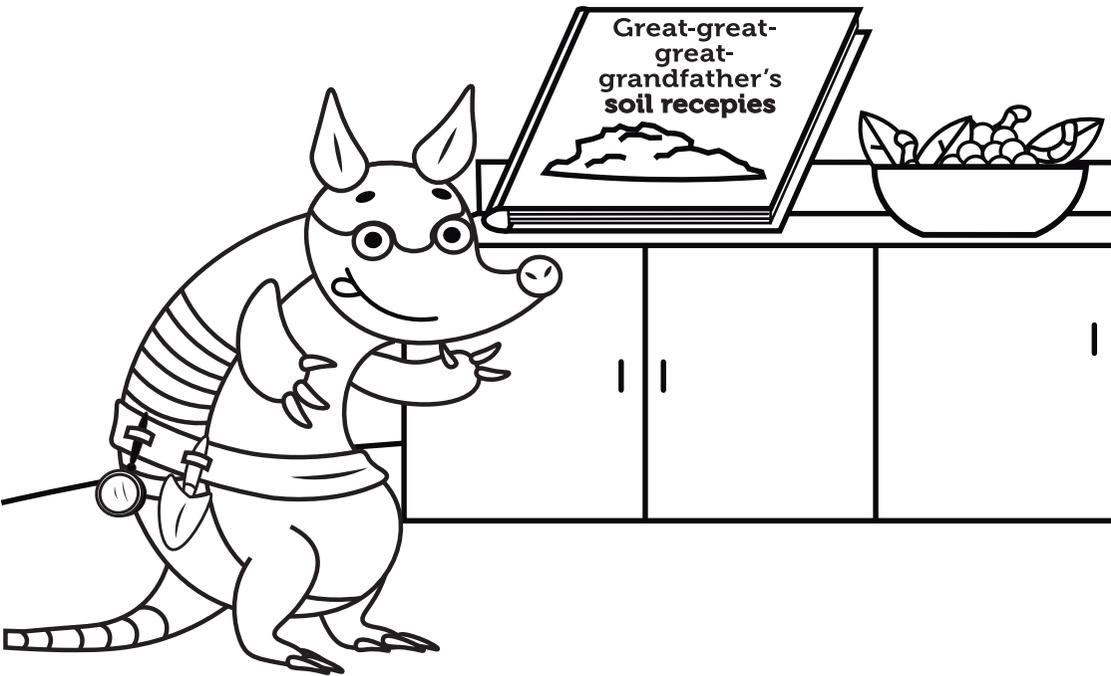
Tropical dry forest



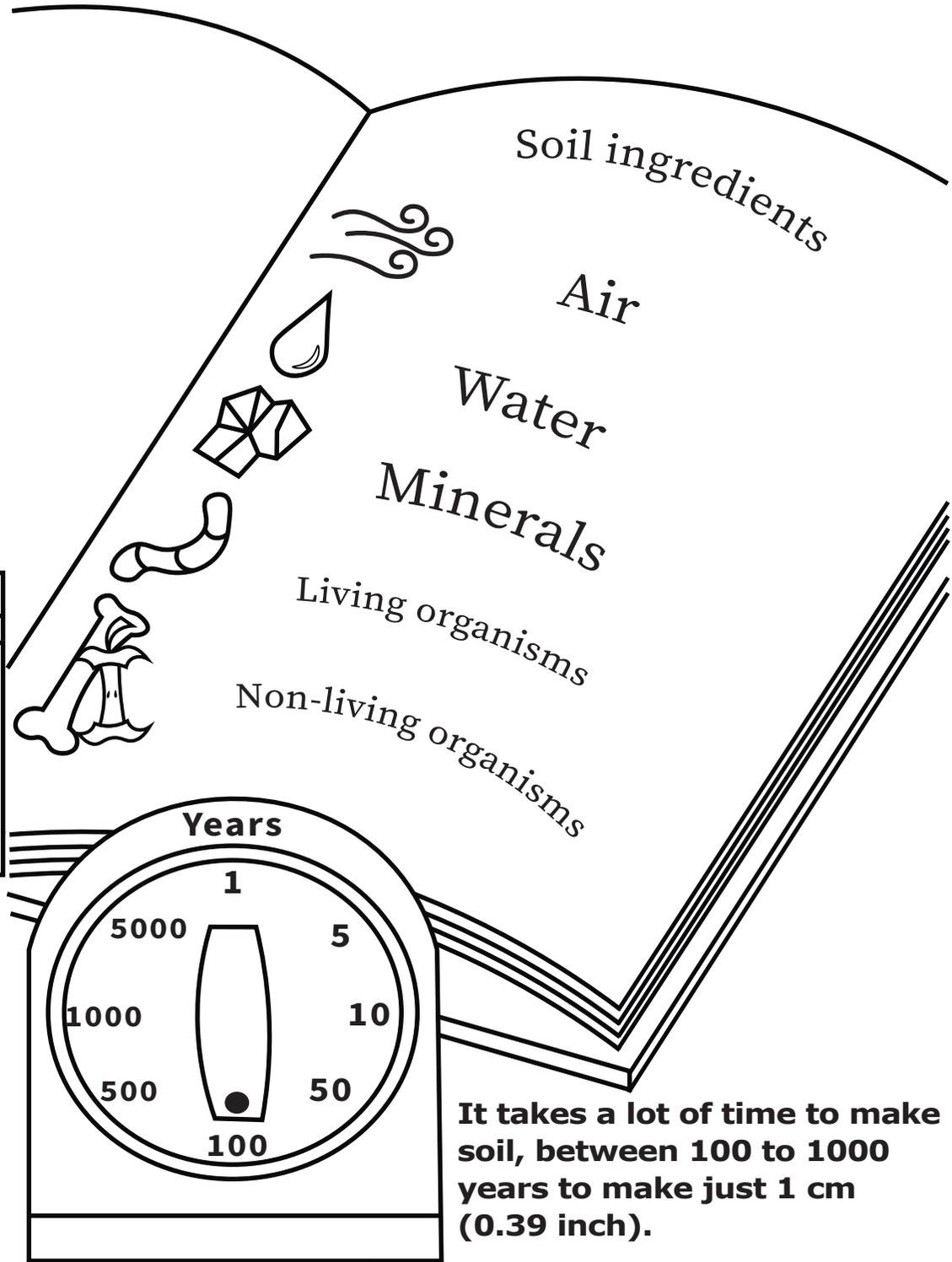
Rainforest



Soil is a mixture of five ingredients. Read my great-great-grandfather's soil recipes to discover the ingredients.



Soil is a limited natural resource, it is composed of air, water, minerals, and living and non-living organisms. These substances can exist in various combinations and can react with each other, so that it affects the behavior of the soil, what kind of plants can grow and how they grow in it.

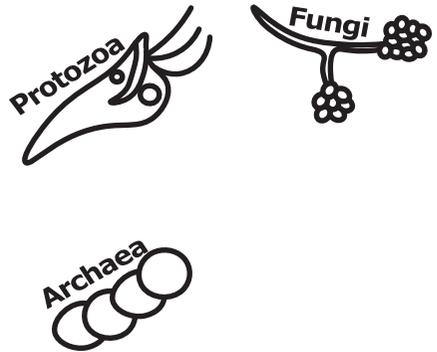
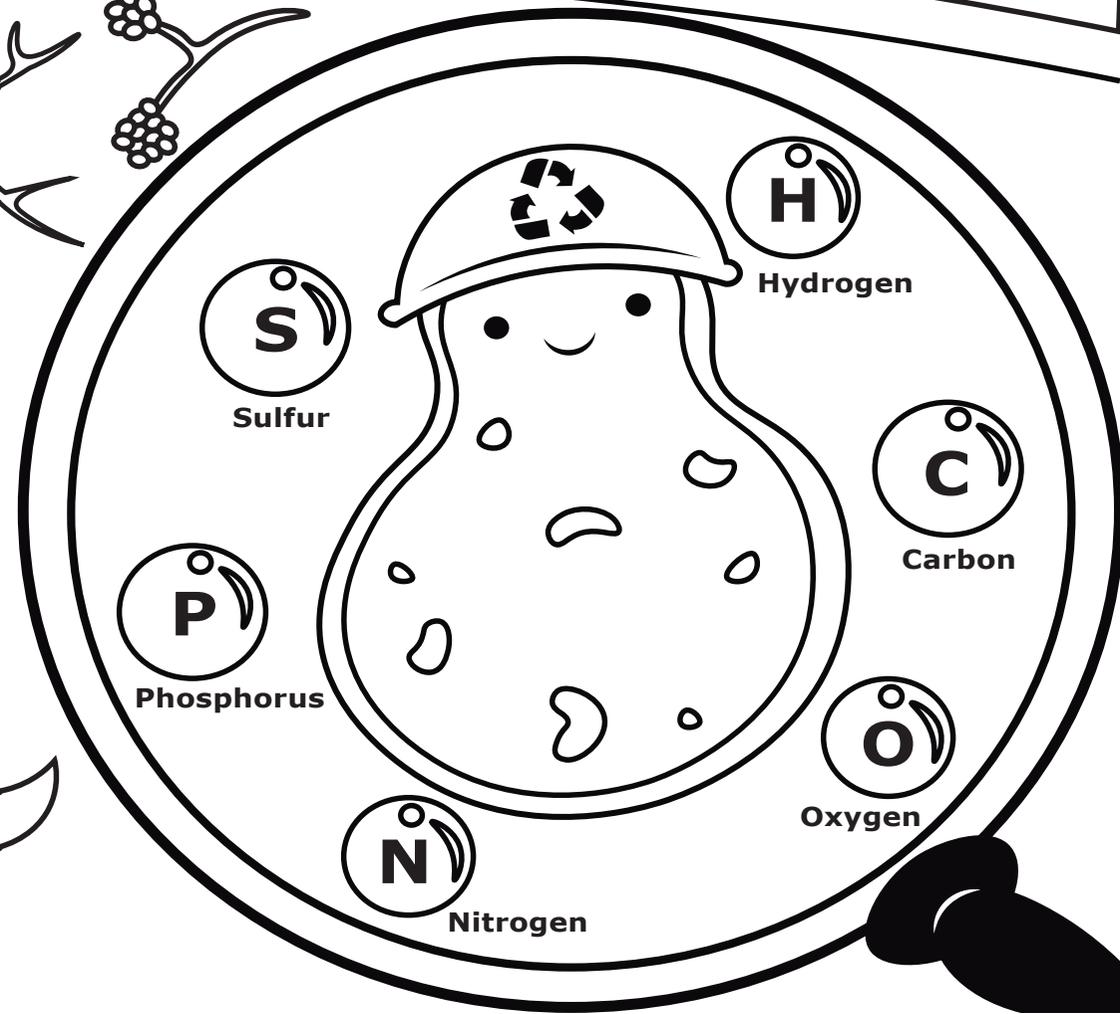


It takes a lot of time to make soil, between 100 to 1000 years to make just 1 cm (0.39 inch).



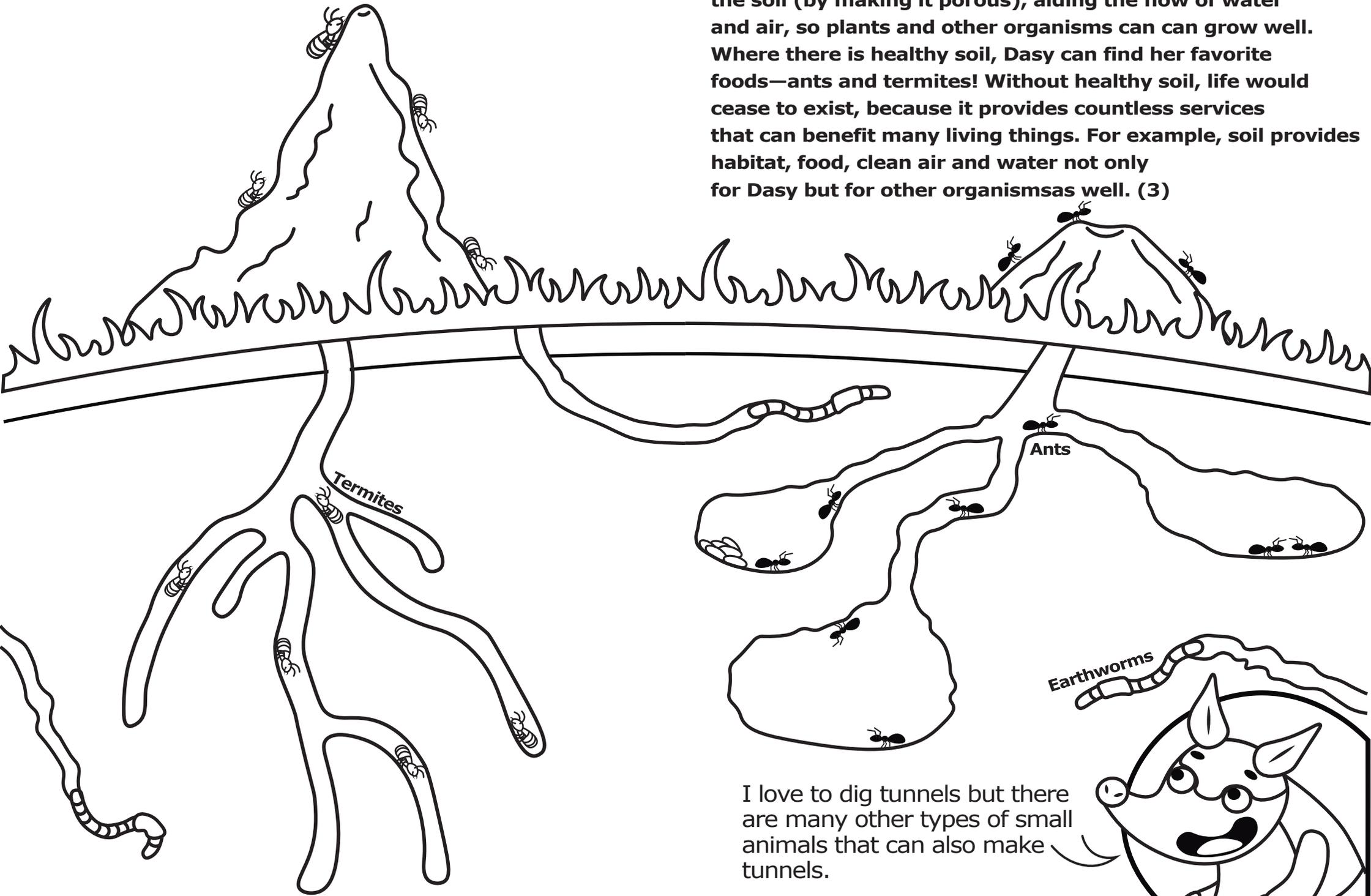
**Microorganisms contribute to soil fertility. They decompose dead plant and animal, releasing stored nutrients and converting some of them into forms that plants can use to grow.**

**There are different kinds of microorganisms like archaea, bacteria, fungi and protozoa. Can you find them?(3)**



I'm a bacteria, one of the billions of microscopic organisms living in the soil. We are responsible for the transformation and recycling of nutrients on Earth.

Animals like earthworms, ants and termites improve the soil (by making it porous), aiding the flow of water and air, so plants and other organisms can grow well. Where there is healthy soil, Dasy can find her favorite foods—ants and termites! Without healthy soil, life would cease to exist, because it provides countless services that can benefit many living things. For example, soil provides habitat, food, clean air and water not only for Dasy but for other organisms as well. (3)

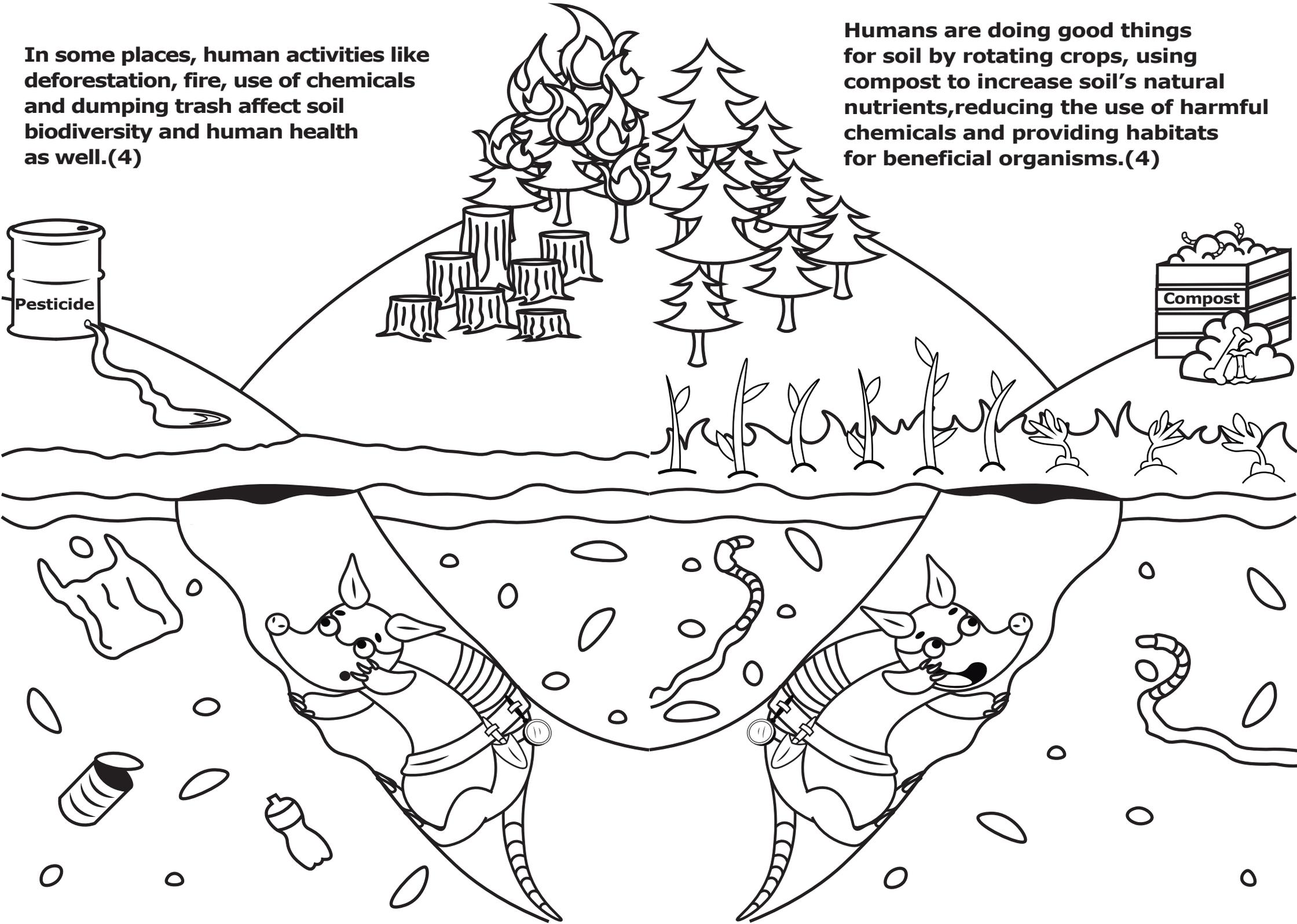


I love to dig tunnels but there are many other types of small animals that can also make tunnels.



**In some places, human activities like deforestation, fire, use of chemicals and dumping trash affect soil biodiversity and human health as well.(4)**

**Humans are doing good things for soil by rotating crops, using compost to increase soil's natural nutrients, reducing the use of harmful chemicals and providing habitats for beneficial organisms.(4)**



Now that you know some things about soil, can you think about some of the benefits that healthy soil can provide to living organisms like you and me? Think about our food (like plants and animals), the water we drink, the air we breathe, the ecosystems where we can live. These are only a few things called "ecosystem services" that soil can provide not only for us, but for the millions of living organisms of our planet. Keep soil alive, protect soil biodiversity.



## References

1. McDonald, K. and J. Larson 2011. "Dasypus novemcinctus" (On-line), Animal Diversity Web. Accessed November 02, 2020 at [https://animaldiversity.org/accounts/Dasypus\\_novemcinctus/](https://animaldiversity.org/accounts/Dasypus_novemcinctus/)
2. Orgiazzi, A. (2016). Global soil biodiversity atlas. Luxembourg: Office for Official Publications of the European Communities.- Global soil biodiversity atlas.
3. Bryson, E. J. (2006, August 21). SOIL ORGANISMS. Retrieved October 22, 2020, from <https://www.sas.upenn.edu/~jbryson/-soilcollege.html>
4. Organización de las Naciones Unidas para la Alimentación y la Agricultura. 2018. Guía DE BUENAS PRÁCTICAS PARA LA GESTIÓN Y USO SOSTENIBLE DE LOS SUELOS EN ÁREAS RURALES Bogotá. <http://www.fao.org/3/i8864es/I8864ES.pdf>

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