



December 5, 2018

Be the solution to soil pollution!

Soil is the primary source of almost everything we need to live on this planet. Because of the importance of soil and the degradation of soil around the world the International Union of Soil Sciences (IUSS), in 2002, adopted a resolution proposing the 5th of December as World Soil Day.

To celebrate the importance of soil as a critical component of the natural system and as a vital contributor to human wellbeing the North Carolina Composting Council (NCCC) has prepared this

Countdown To World Soil Day

An assembly of 34 questions and answers about soil, one for each day beginning November 1st and ending on December 4th.

1. What is Soil?

Soil is the upper layer of the Earth's crust. It is composed of mineral particles, organic matter, water, air and living organisms. Soil is what plants and animals depend on for food and life.

2. Are there different kinds of soil?

There are 70,000 different types of soil in the U.S.

3. What things live in soil?

Living things in soil include archaea, bacteria, actinomycetes, fungi, algae, protozoa, and a wide variety of larger creatures, including springtails, mites, nematodes,

earthworms, and ants. A single teaspoon (1 gram) of rich garden soil can hold up to one billion bacteria, several yards of fungal filaments, several thousand protozoa, and scores of nematodes.

4. Why should we care about soil?

95% of our food comes from soil.

5. What kind of soil is here in NC?

The “Cecil” is the official state soil of North Carolina. It looks red because the high amount of iron oxide coats the other minerals and make them look red.

6. What pollutes soil?

Industrial wastes such as dust, gases and chemicals fall to the ground from the air; agricultural pesticides, fertilizers and insecticides are sprayed directly onto the soil; chemicals and waste in the water seeps into the soil from runoff, streams, rivers and ponds. Soils near roads have high levels of heavy metals, polycyclic aromatic hydrocarbons, and other pollutants because of the exhaust from automobiles.

7. What else does soil do for us?

10% of the world’s carbon dioxide emissions is stored in soil. Soil holds three times as much carbon as the atmosphere and can help us meet the challenges of a changing climate.

8. How does soil effect groundwater?

One of the main services provided by soil is filtering, buffering and transforming contaminants and turning them into useful nutrients. This essential function ensures good quality of groundwater and safe food production.

9. What kind of soil is best for farms?

The most fertile soil is dark brown because it contains a high percentage of humus or organic matter. The percentage of organic matter in a soil is among the best indicators of agricultural soil quality.

10. I’ve heard people say “Soil is a living thing.” Is that true?

1 Tablespoon of soil has more organisms in it than there are people on earth. 5,000 Different types of bacteria live in one gram of soil. There are 20,000 pounds of total living matter in the top six inches of an acre of soil.

11. How is soil made?

The five factors of soil formation are climate, organisms, topography, parent material, and time.

12. How long does it take to make soil?

It takes a minimum of 500 years to form one inch of topsoil.

13. Is there water in the soil?

.01 Percent of the earth's water held in soil. Soil prevents floods by transferring water slowly to streams and groundwater. The more organic matter is in the soil the better it holds water.

14. Does soil sequester carbon?

On a global scale, soils contains about twice as much carbon as the atmosphere.

15. Why is soil so good for plants?

Nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled in the soil.

16. What makes soil healthy?

A soil's health can be measured by the amount of nutrients it contains and by its percentage of organic matter. Applying compost to a poor soil can dramatically increase how well plants can grow in it and how healthy the whole ecosystem is.

17. Are the things living in the soil good for the plants?

Fungi are among the most critical soil organisms, they form symbiotic associations with roots that helps many plants species to thrive.

Nutrients and air in the soil are provided by tiny animals such as arthropods shredders, (weevils, millipedes, termites and worms) that dig and turn the soils as they feed on fungi and bacteria on dead plant material.

18. What keeps soil from blowing away?

The root systems of plants and vegetation hold soil in place and prevent wind and water erosion.

19. How many layers of soil are there?

There are five main layers of soil. Soil layers are called "Horizons". The top horizon of soil, made up mostly of leaf litter and humus (decomposed organic matter).

20. Is clay different from soil?

Clay is a catchall term for any fine-grained soil that contains minerals like iron or magnesium.

21. What is clay good for?

Clay soil is higher in Cation Exchange Capacity (CEC) which helps plants retain and utilize nutrients and is used to make ceramics or pottery.

22. What are soil scientists called?

Pedology is the study of soils in their natural environment. It is one of two main branches of soil science, the other being edaphology.

23. Is all soil brown?

Soil colors range from the common browns, yellows, reds, grays, whites, and blacks to rare soil colors such as greens and blues.

24. What makes soil different color?

Minerals in the soil give it different colors.

25. What is the most common mineral in the soil?

The most common mineral in soils is quartz.

26. Can you paint with different colors of soil?

Mud has been used to make paintings since the caveman days. It is still used today to decorate ceramics and dye fabrics.

27. Is all soil the same age?

New soil is being formed all the time. The oldest soils on earth may be in Australia, where stable land forms have allowed some soils to age several million years.

28. What else do we use soil for?

Soil is used for many things including building materials such as adobe and bricks.

29. Is soil good for us?

Though we don't eat soil, it is needed to grow the food we eat and is commonly used in antibiotics. Microbes created in the soil are harmful to bacteria, which is why soil is used in medicine.

30. What else can you do with soil?

Soil is used in some common beauty products including blush and foundation. Soil rich in clay can also be used in facial masks and toothpastes.

31. Do any animals eat dirt?

Bats in the Amazon eat soil rich in clay because the minerals in the clay detoxify the poisons in the fruit seeds that they eat.

32. Do birds eat dirt?

Most birds gather small rock particles from the soil to hold in their crop to grind seeds that they eat. Parrots in Peru eat the soil itself because it is a good source of salt.

33. Does soil pollute our water?

When soil is left uncovered and lacks vegetation it can be washed away by rain and clog rivers and streams.

34. How can I care for the soil in my yard and garden?

Keep soil covered with living plants or mulch. Don't till your garden before you plant. Plant cover crops in the winter to keep the soil in place and add humus. If your soil is already light colored and infertile try adding a good dose of compost before you plant.