NEWS FLASH! OUR SURVIVAL HINGES ON SOIL! WHO KNEW?!

the mystery of CORN

Mystery #3 THE SECRET OF SOIL

THE SECRET OF SOIL

SOIL. People call it lots of names: dirt, land, ground, earth. But soil is special. It's alive with worms, fungi, bugs, organic matter and more. Soil is one of three resources that we cannot live without. The other two essential resources? You guessed it: air and water.

For a science project, you must grow a healthy plant from seed to harvest. You already know that a seed can germinate without soil in a closed container and without light. However, you remember that the germinated seed cannot survive very long without soil. To ace this project, you'll need to know a lot more about soil and what types are best to grow healthy plants.

SCOOP! GET ALL THE DIRT ON SOIL!

SOIL vs DIRT What's the diff? PAGE 2

Do you have a future in soil? PAGE 3

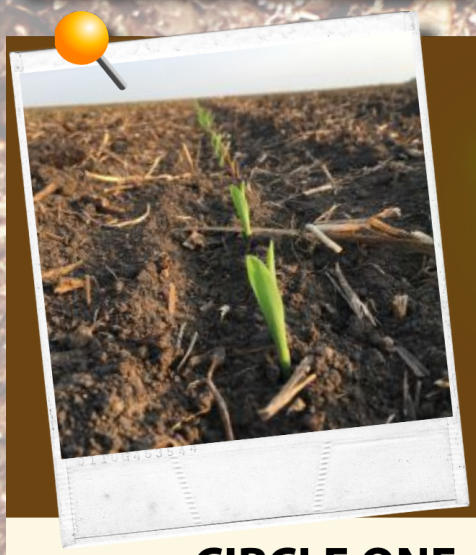
IS IT DIRT *or* IS IT SOIL?

Why do some people say soil and others say dirt? These words are used interchangeably, yet they should not be. By comparing **soil** and **dirt**, you can learn a lot about why soil is important. Let's learn more about soil!

What's the difference between soil and dirt? Check out this comparison, THEN

Test your knowledge using the Google Slides, THEN

Watch the video to learn more and complete the "Intro to Soil Worksheet".



TRUE OR FALSE

TEST YOUR SOIL KNOWLEDGE!

CIRCLE ONE

TRUE | FALSE There are over 70,000 different types of soil in the United States.

TRUE | FALSE It takes 500 years minimum to make 1 inch of topsoil.

TRUE | FALSE There can be 5,000 different bacteria in one gram of soil.

TRUE | FALSE There are 3 main types of soil: sand, silt, and clay.

Want to know how you did? Check in with your teacher for the correct answers.

WATCH FOR THESE VOCAB WORDS! **Soil | Dirt | Topsoil | Agronomist**

Loam is rich in organic matter

Matalyn Stark is a Kansas soil scientist who works for the USDA Natural Resource Conservation Service

Learn More About Soil

As you have learned so far, good soil is a key factor in healthy plant growth. **Topsoil**, the first 5-10 inches of soil, must be conserved and is **nutrient** rich to produce a healthy crop. Nutrients are substances that provide nourishment essential for growth and the maintenance of life. They are just as important for plants as they are for humans. Soil is essential to our survival as well as for nearly every organism on Earth. Soil is created slowly by the **weathering** of rocks and decomposition of living matter.

You may hear scientists refer to rocks as inorganic matter, while decaying plant and animal matter are considered to be organic. Both inorganic and organic material are needed to support plant growth. It is important to remember not all soil is the same quality. The type of soil present depends on the types of weathered rocks, amount of organic material, time, and other factors.

Soils can be classified into three main categories – clay, silt, and sand. These terms can also be used to describe the texture of the soil, or the way the soil feels to the touch. The ideal soil for agriculture is loam. This type of soil is abundant in the Midwest region of the United States, making it an ideal place for growing crops, especially corn. Loam soil is "airy" which allows the roots breathing space.

CAREERS IN CORN

- **Agronomist**
- Soil Conservationist
- Soil Scientist
- Watershed Technician
- Crop Production Specialist

There are many more career options in soil. Learn more here:

FUN FACT

We all know the Kansas State Flower is the sunflower. But did you know that Kansas has a State Soil? Harney Silt Loam was adopted as the Kansas State Soil in 1990.

Soil Horizon | Organic Matter | Nutrients | Weathering

CSI CORN SCIENCE INVESTIGATION

Soil is important to corn farmers. They leave corn stalks on the field to protect the soil and to add organic matter to improve the soil.

Soil is essential to the success of plant growth. Soils are a limited natural resource that can have various formation rates. It may take hundreds or even thousands of years to form a layer of topsoil. The slowest formation rates take place in colder, dry regions where it can take thousands of years to form a fertile top layer of soil. Soils are ever-changing in their appearance. As they age, they will start to differ from their parent material. These differences can come from weathering, erosion, heat and other factors. Soil can reveal a lot of information based on color alone. Soils that are red or yellow are showing signs of oxidation. Soils that are dark brown or black have a large amount of **organic matter.** This is why some of the better soils for growing plants tend to be darker in color. Follow the QR Code watch a video and learn how soil is created!

MATERIALS

- Small 4 oz containers with lid
- White glue
- Food coloring (if you want)
- Liquid starch (Sta-Flo is best)
- Popsicle sticks
- Small beads, glitter, pencil shavings, etc

SLIMY SOIL LAB

PROCEDURE

- Students will use glue and starch to create their soil slime model in a small container.
- Place two ounces of white glue in the container. If you would like to add color to your slime, add food coloring now.
- Add 1 ml (1/4 teaspoon) of liquid starch. This is also the time to add in glitter, small beads, pencil shavings, or any of the other options offered to you.
- Mix together until you arrive at the correct consistency.
- The added material represents all of the minerals, nutrients, organic, and inorganic matter present in soil.
- When you are done creating your soil slime, join yours with others to create different looking **soil horizons**.

The Mystery of Corn reader series is provided by:

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