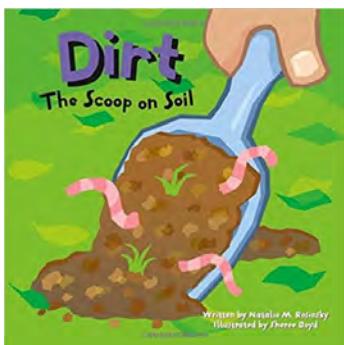
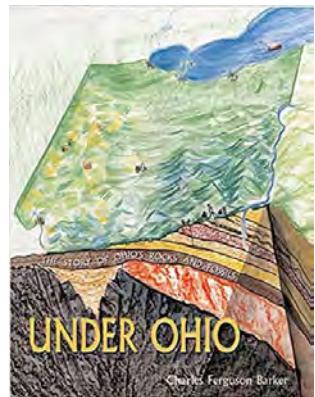
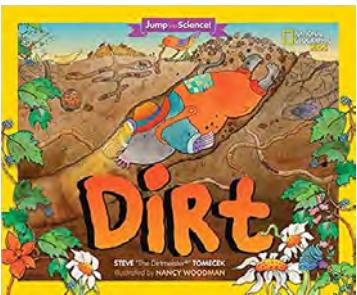


Roots...

Digging Deeper into Soil & Water Resources



LITERACY CONNECTIONS



Franklin Soil and Water Conservation District
Creating Conservation Solutions for Over 70 Years

SPLENDID SOIL

Soil is a dynamic natural body made up of mineral and organic materials, as well as living organisms. It is a living, complex ecosystem at the surface of the earth's crust that provides the necessary ingredients for plants to grow. Soil is much more than meets the eye.

Soil is important to us because it produces food, fiber, shelter, fuel and medicine, as well as provides a surface on which to build. There are more than 70,000 different types of soil in the United States, over 400 in Ohio and 32 in Franklin County. Factors that define soil types are the **parent material**, topography and texture. **Soil texture** is determined by the particle size. Sandy soils have large particles, allowing water to move easily between them. The medium sized particles of silty soil, permit some water movement. Clay soils have much smaller particles, which pack together, and greatly reduce water movement. A mixture of all three soil types is called a loam soil.



Soils are made up of **rock, plant and animal (organic) materials plus water and air**. The amount of each part changes somewhat from one soil to another. As soil develops, distinct layers – called **soil horizons** – are formed. These layers have different colors, textures (sand, silt, clay), structures and composition. After organic matter has completely decayed it is called **humus**. This gives the soil its dark brown or black color (O horizon) and provides the most nutrients for the plants. The topsoil (A horizon) incorporates this organic matter and is the layer where most of the plant growth takes place. The subsoil (B horizon) is lighter in color because it has less organic matter. This layer stores additional moisture in the soil. The substratum or parent material (C horizon) contains rock pieces that break apart to become the soil above. They come from the bedrock (R horizon), a solid rock layer below.

We often use the terms soil and dirt interchangeably, however, there is a difference. Dirt is misplaced soil, ranging from dirt on our clothes to mud in our streets and pollution in our streams. Dirt is one of the major pollutants of Ohio's rivers. This dirt (eroded, misplaced soil) lowers water quality and increases sedimentation of the riverbed – reducing the quality of life for many aquatic animals including macroinvertebrates.

Soil erosion can be significantly decreased in our own yards and communities by applying best management practices on land including planting native plants and trees. Their strong and extensive root systems help hold soil in place and reduce stormwater runoff, preventing soil from becoming dirt.

State Soils

Did you know that in the United States, each state has selected a state soil? The Miamian soil series is the state soil of Ohio. **Miamian soils** are Ohio's most extensive soils occurring on more than 750,000 acres in the state!



SPLENDID SOIL

EXPLORING SPLENDID SOIL

It's time to get outside, get creative and put our artistic skills to work! Let's paint with soil from our backyard or community.

Supplies:

- Space outside to explore and paint
- Tools for Digging: Spoons, small gardening spade, hands & fingers
- Container for collecting and mixing soil paint (carryout or yogurt container, bowl)
- Water
- Paint Brushes
- Popsicle sticks, forks or some other tool for mixing soil & water
- Old towel or cloth
- Paper



Procedures:

- Find a safe place outside to dig and collect soil. If possible, find several different places where you can collect soil.
- Using a digging tool, collect a small amount of soil (1/4 cup or less) and place it in your collection container. Remove any soil critters that you may have collected.
- Repeat the previous step, finding different types and colors of soil. Put each soil type in a separate container.
- Once the soil has been collected, add small amounts of water to each container and mix until your soil paint reaches the desired consistency.
- Be creative and use your soil paints to create a unique work of art or two... or three. Consider painting your favorite food grown in soil or your favorite soil creature, native plant or tree.

ADDITIONAL RESOURCES

[Ranger Rick: Explore Sand, Silt and Clay](#)

[Up in the Garden and Down in the Dirt Read Aloud](#)

[Compost Stew Read Aloud](#)

[Sesame Street Mrs. Obama Plants a Garden](#)

[Sesame Street Song- Dirt Dirt Dirt](#)

[Childhood by Nature: Composting with Kids](#)

[Smithsonian Dig It! The Secrets of Soil](#)

[USDA Web Soil Survey](#)

GIVE IT A TRY

Plant a garden at home! You don't have a lot of space to grow native plants or to plant a veggie garden.

A simple planter, small raised bed or small space in your yard will work just fine.

Check out [Kids for Gardening](#) for more ideas!



QUESTIONS TO EXTEND LEARNING:

- As you explore outside, do you see any areas of bare soil in your backyard or community? If so, what are some actions you could take to prevent the soil from eroding?
- Collect a sample of soil from outside and try to determine if it is sand, silt or clay. What type of soil did you collect?

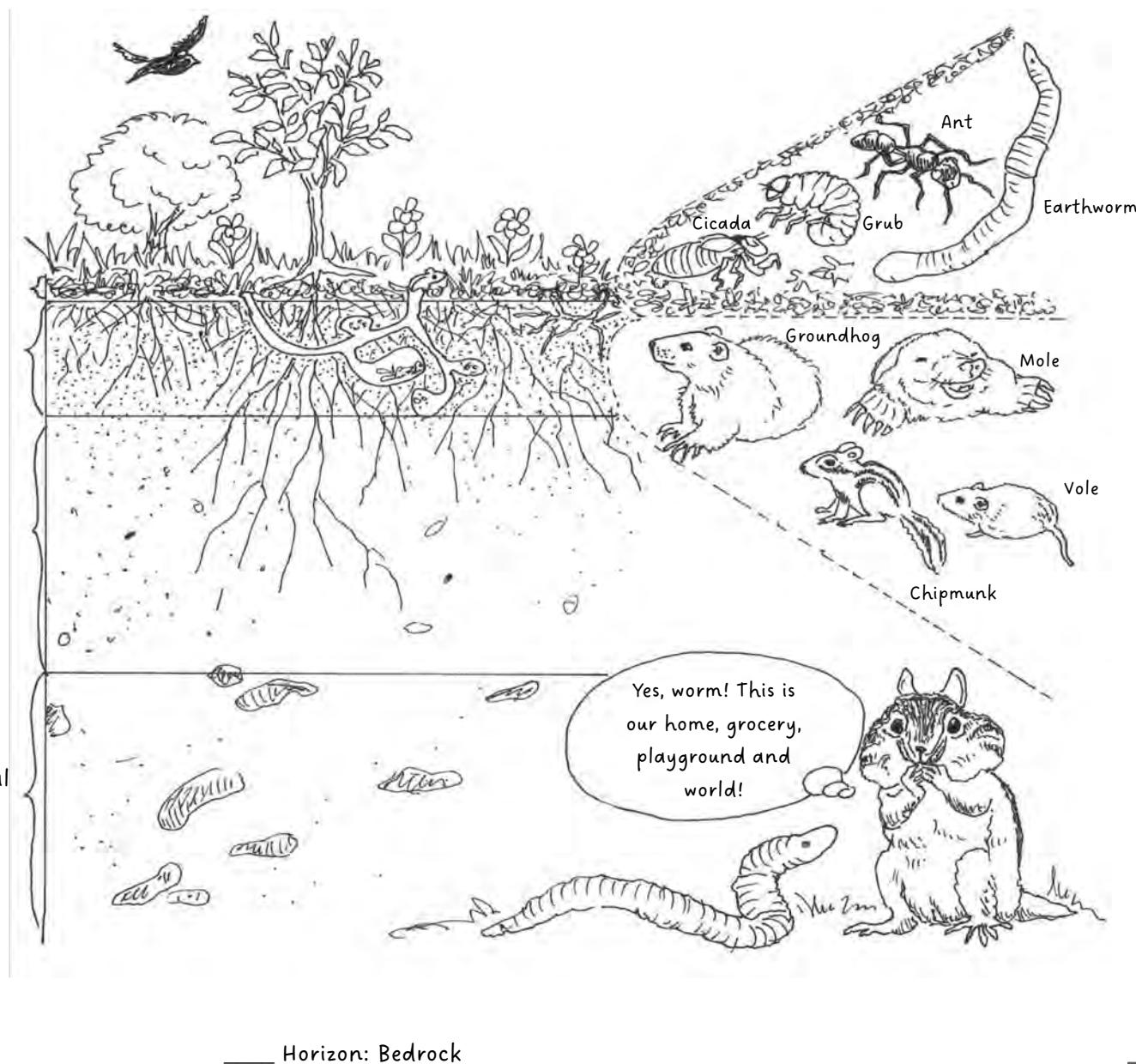
Apply learning while enjoying a snack! Demonstrate what you have learned about soil horizons with an Edible Soil Cup or DIY Edible Soil Layers treat.



SPLENDID SOIL

Can You Identify
Each of the Soil
Horizons?

- Horizon: Organic Matter or Humus
- Horizon: Topsoil
- Horizon: Subsoil
- Horizon: Parent Material or Substratum



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