

John Deere that's Who

Grade Level(s)

1st grade

Estimated Time

30 minutes

Purpose

Students will use the art of soil painting to explore science and the natural world while learning about John Deere.

Materials

▪Links:

Website with virtual resources: www.linncoag.com -2020/21 virtual learning drop down tab- February

Book: John Deere that's Who by Tracy Mauer

Instructional video: [Soil paint - YouTube](#)

▪Worksheets:

Singing plow coloring worksheet

Soil paint recipe

▪Other:

Cotton swabs

Soil samples

Cups

Popsicle sticks

Little plates

Glue (not included in kit)

Water (not included in kit)

Vocabulary

Organic matter: matter that has come from a recently living organism.

Minerals: soil particles like sand, silt and clay of natural occurrence.

Soil: a black or dark brown material typically consisting of a mixture of organic remains, clay, and rock particles.

Topsoil: top layer of soil we plant seeds in.

Interest Approach – Engagement

Play the steel plow video <https://www.youtube.com/watch?v=S15Rad9klnY>

Play the modern day plow video <https://www.youtube.com/watch?v=fqZX9tw2i3g>

Ask the following questions:

- What was the purpose of the antique and modern-day tool?
- Why would farmers want to plow or till the soil?
- How did the tool move through the soil in the first video? Second video?
- How did we transition from the horse and plow to tractor and plow?

Background - Agricultural Connections

Fun facts about soil: 1) 95% of our food is directly or indirectly produced from soil. 2) Soils store and filter water, improving food security and our resilience to floods and droughts. 3) Soil is one of the most diverse habitats on earth, hosting a quarter of the world's biodiversity.

This lesson integrates art with science and focuses on the agricultural importance of soil and what we can learn about gardens and farms by observing the color of soil. Students will build an understanding of soils and their importance by painting with soil-based pigments. Soils are the foundation of agriculture, providing the support, water, and nutrients that plants need to grow. Garden plants and plants grown on farms depend on healthy soil to grow.

Soils are also important for the beauty their many colors add to our landscape. Most of us overlook this natural beauty because we see it every day. Often these colors blend with vegetation, sky, water, and other natural features. Over the centuries, humans have used soil colors to serve as pigments in bricks, pottery, and artwork. These artifacts from the past give us an idea of how early people lived and worked.

Each soil has its own unique characteristics. In 1837, a blacksmith by the name of John Deere invented the first steel plow. During this time, farmers used horses to pull a single-bladed plow through the field. Today, farmers use tractors to pull a single plow with multiple blades. This allows more plowing to be done in a shorter amount of time.

Procedures

1. Watch the instructional video- link provided above
2. Read or watch the read-aloud video of John Deere that's Who- link provided above
 - Why is soil important to us?
 - What do we grow in soil?
 - Who grows our food?
 - What happened in the story?

- Why did John Deere set out to improve the original plow?
 - What was the soil like in Vermont? Illinois?
3. Hold up the soil samples and explain to the students that all of the soil samples came from one state, Utah. The mix of soil is different everywhere you dig. Soil contains minerals (sand, silt and clay), organic matter, air and water.
 4. Pass out the supplies for soil paint
 - Soil, cups, little plate, popsicle stick, cotton swab and coloring sheet.
 - Add equal parts water and glue to the soil and mix with popsicle stick. Be sure to keep your cup over your plate in case of spilling. A little goes a long way, you want it to be the consistency of paint.
 - Ask the students to compare their soil sample to those sitting close to them. Notice how the consistency is different, just like our story. In Vermont the soil had a lot more sand. It was loose and would dry quickly. The soil in Illinois was thick and sticky, many people called it gumbo.
 5. Instruct the students to use their cotton swab to paint their coloring sheet of the singing plow.
 6. Review: soil comes in many colors and textures. Soil mixes vary from location to location and hold different amounts of water.
 7. Send home the soil paint recipe.

Organization Affiliation

Original lesson plan can be found on the National Ag in the Classroom website.
<https://www.agclassroom.org/matrix/> -John Deere that's Who and Soil Paint.

Morgan Hibbs, Linn County Farm Bureau

Agriculture Literacy Outcomes

T1.K-2.c Identify natural resources

T5.K-2.a Discuss what a farmer does.

Iowa/ Common Core Standards

SS.1.17. Describe how environmental characteristics and cultural characteristics impact each other in different regions of the U.S.

SS.1.21. Compare life in the past to life today within different communities and cultural groups, including indigenous communities.