

Project Area:
Environmental Science

Skill Level: Beginner

Learner Outcomes:

-Understand the connection between everyday objects and the soil

TN Science Curriculum Standards:

Flow of matter and energy

GLE 0407.3.1, .3.2
Interdependence
GLE0407.2.1

Materials Needed:

-Pictures of everyday objects (see end of leader guide)

-String or ribbon

-Paper clips or tape

Time Needed:

20 minutes

Success Indicator:

Students can communicate the importance of soil in their everyday life

Life Skills: Observing, Reasoning, Communicating

Tags: Soil services

Related Lessons:

"A Recipe for Soil"

"What's Soil Worth"

Adapted by: Jennifer DeBruyn and Andrea Ludwig
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Environmental Science —

The Soil Web

In this activity, students will build a web that connects everyday objects to the soil, learning that soils support many important products and services.

Set Up:

1. Print out a variety of pictures of everyday objects. Also, have some blank sheets so students can make up their own objects. Tie a string to them so they can be worn as nametags (optional).
2. Print a picture of soil and set it in the middle of the room or in the middle of the wall.
3. Print out pictures of intermediate products.
4. Cut lengths of ribbon or string (4-5 feet, one for each student) and affix one end to the picture of the soil.

Notes:

- The web can be built on the wall (requires tape) or in the middle of the floor.
- Printing on cardstock or laminating lets you reuse the pictures for multiple groups.
- If you have a small space, print out pictures on notecards rather than full sheets.

Introduce the Activity

Ask: Have you thought about the soil today? Did you know that you've already relied on the soil in many ways this morning, without even knowing it?

The Soil Web

Step 1: A soil chain. Hand out the pictures of objects. You could pass them out randomly, or ask students to name an item they used this morning, and hand them the corresponding picture. Ask your students to think about how that object is derived from soil and to draw a chain representing this relationship. Provide an example if they need inspiration:

T-shirt → Fibers/Textiles → Crops (cotton) → Soil

Some objects may have more than one link to the soil. For example, furniture requires both lumber and fiber. If the students identify both, great. If not, that's OK; they can just focus on one linkage. Have students work in small groups to share their chains with each other and discuss.

Step 2: Create the soil web. Have students attach one end of the yarn to the soil picture and hold the other with their object. Have them identify intermediates in their soil chain and clip them to the yarn. Note that multiple objects will share the same intermediate steps, so students will have to work together to build this web.

Variation: Print mini versions of the objects, attach to magnets, and arrange on a magnetic black/white board. Draw the links between the objects.

Generalize and Apply

Ask your students to take the perspective of various professions, and think about why soil is important from their perspective.

Adapted from:

The Soil Chain. Utah State University Cooperative Extension. (utah.agclassroom.org)

Soil in My Food Web. Utah State University Cooperative Extension. (utah.agclassroom.org)

Environmental Science — The Soil Web

Have YOU thanked a soil today?

Activity: Soil Web

Your leader will give you an object. Draw the chain that links this object to soils:

My object:

Soil

Words to Explore

Soil services

Did You Know?

In the United States, 30 percent of our land is forest, 27 percent is pasture, and 18 percent is cropland (USDA, 2011)

Reflections

What do you think soil means to a...

Farmer?

Construction worker?

Miner?

Soil scientist?

Earthworm?

Oak tree?

Restaurant owner?




You?

Credits: Jennifer DeBruyn and Andrea Ludwig
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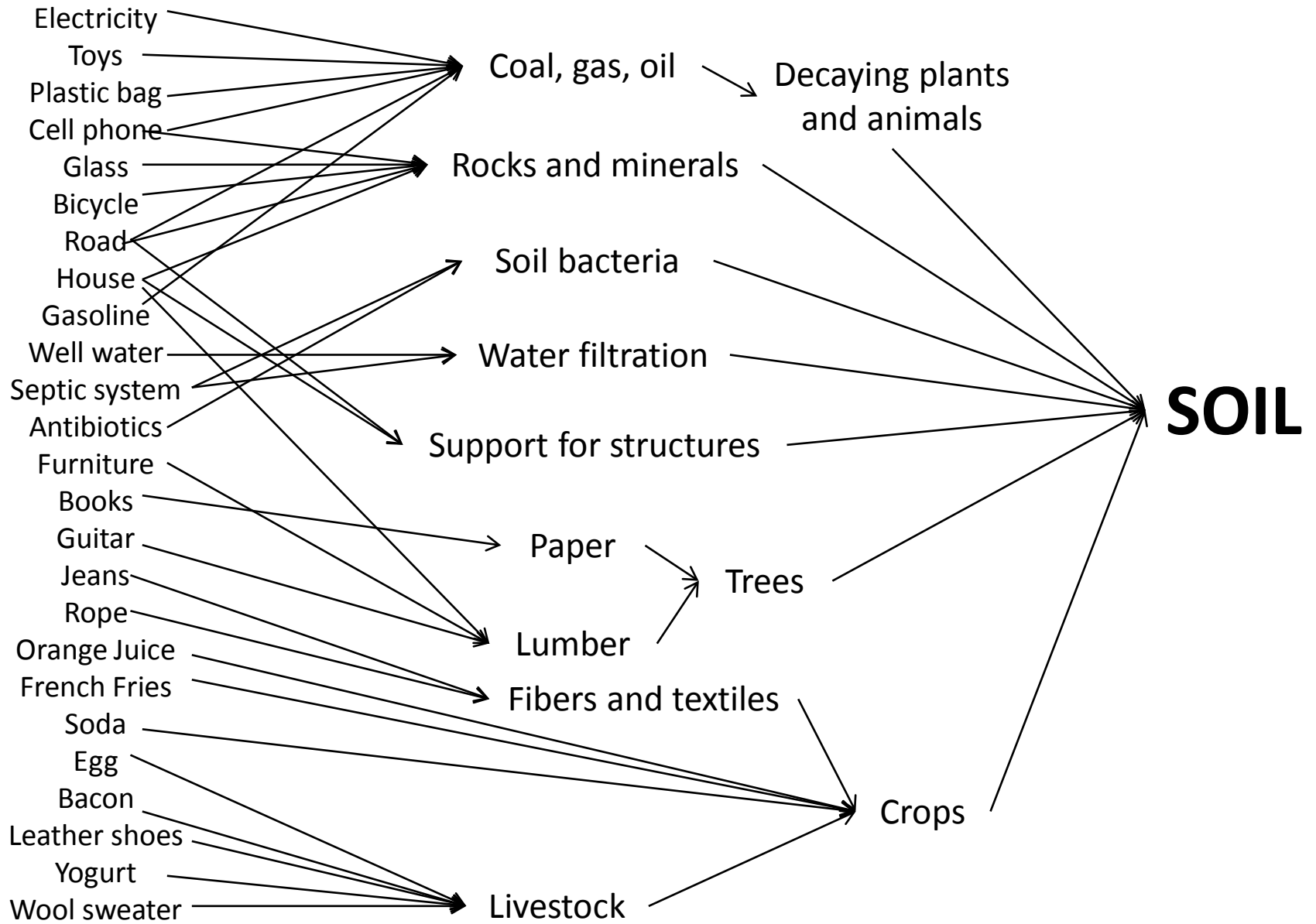


The Soil Web

Notes:

-  – “Soil” goes in the center of the web
-  – Items with green dots are everyday objects and will be the outermost part of the web – pass these out to your students. Everyday objects may have more than one link back to soil.
-  – Items with blue dots are intermediate products or services that soils provide. These will be the inner links between soils and the everyday objects. Multiple objects may link through the same intermediate.

Answer Key (some possible linkages; note that there may be other possibilities!)





Soil





Road





House





Antibiotics





Gasoline





Cell Phone





Plastic Bag





Well Water





<http://www.photo-dictionary.com>

Septic System





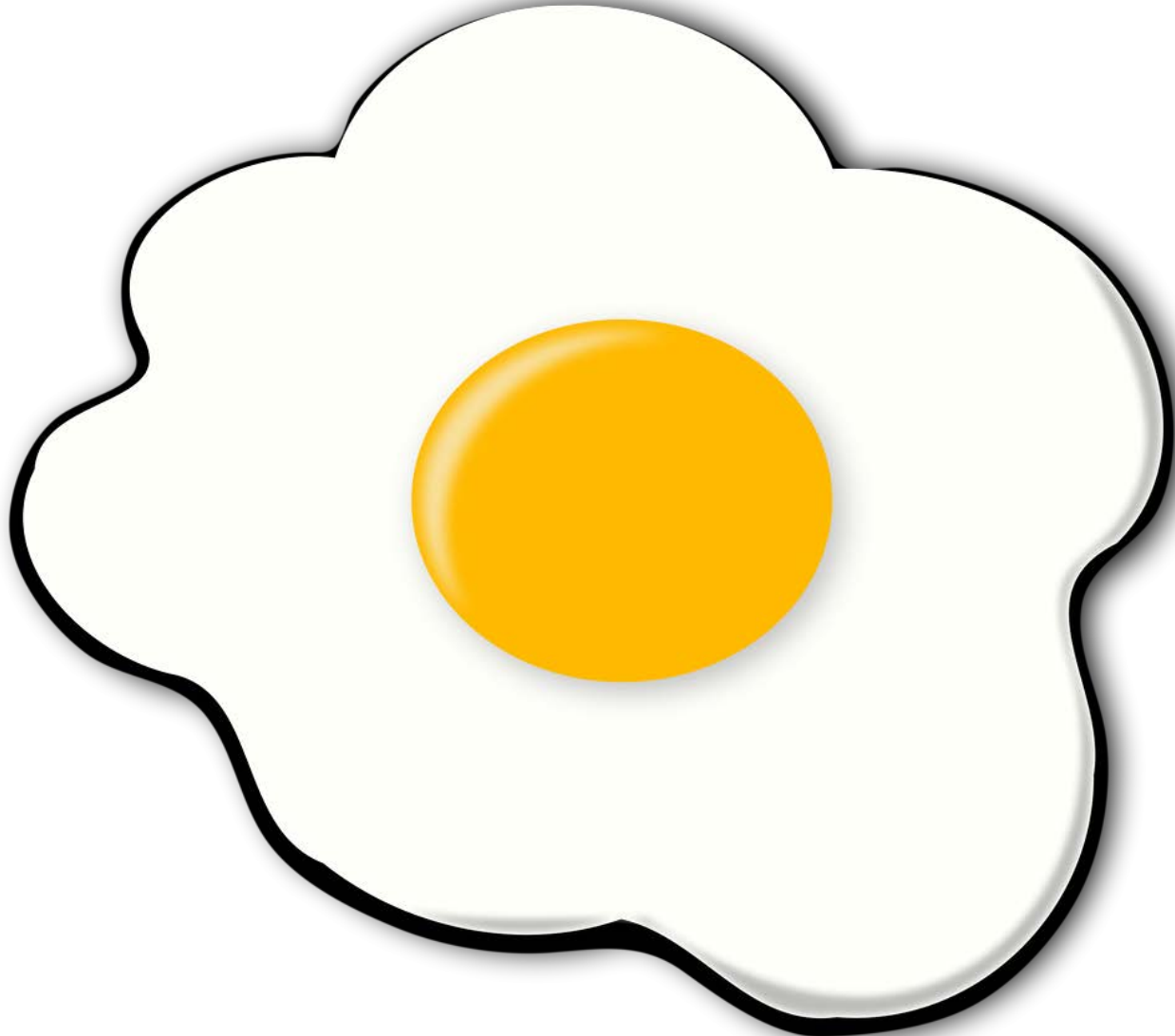
Furniture





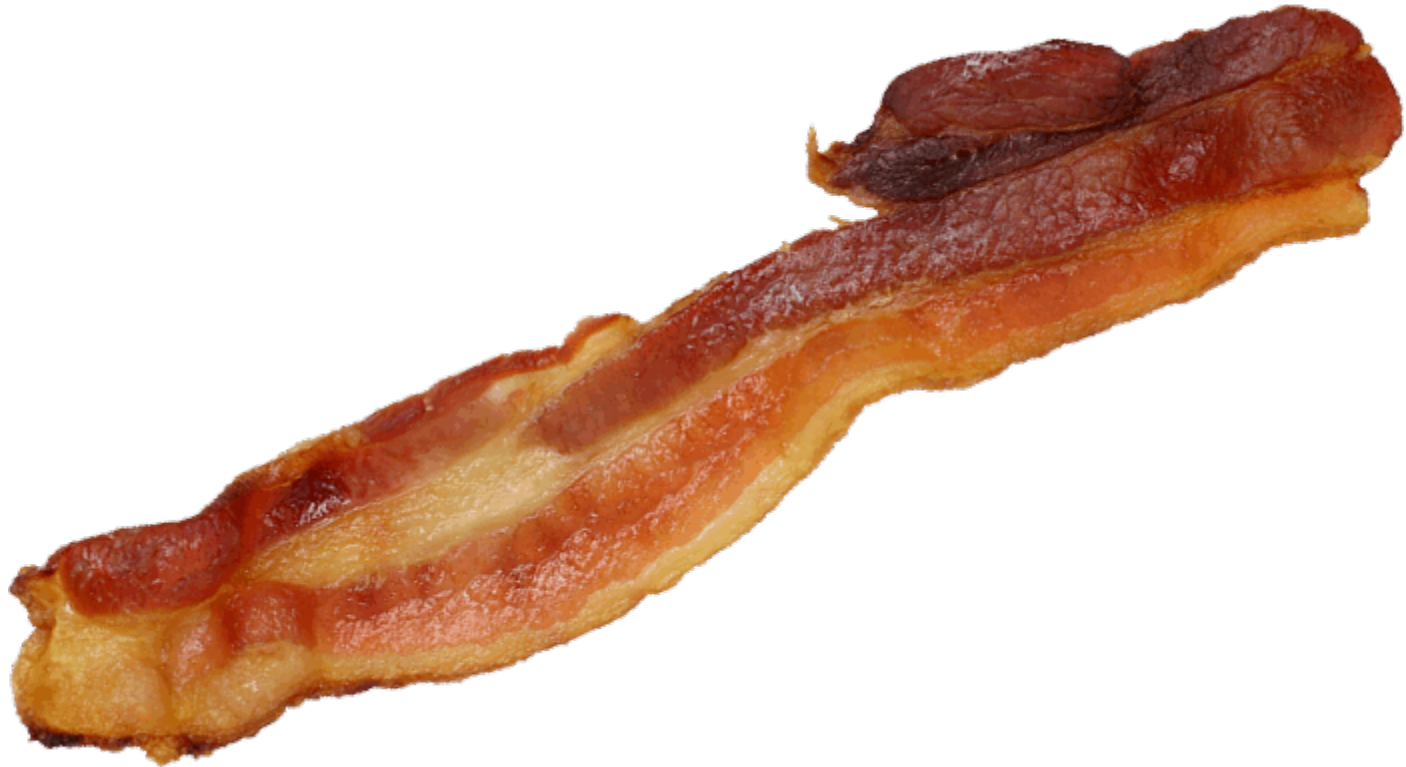
Books





Egg





Bacon





Leather shoes





Jeans





Rope





Glass





Electricity





Bicycle





Soda





French Fries





Yogurt





Wool Sweater





Guitar





Orange Juice





Toys





Oil, Gas and Coal





Decaying plants and animals ●



Rocks and minerals





Fibers and Textiles





Livestock





Lumber





Paper





Trees





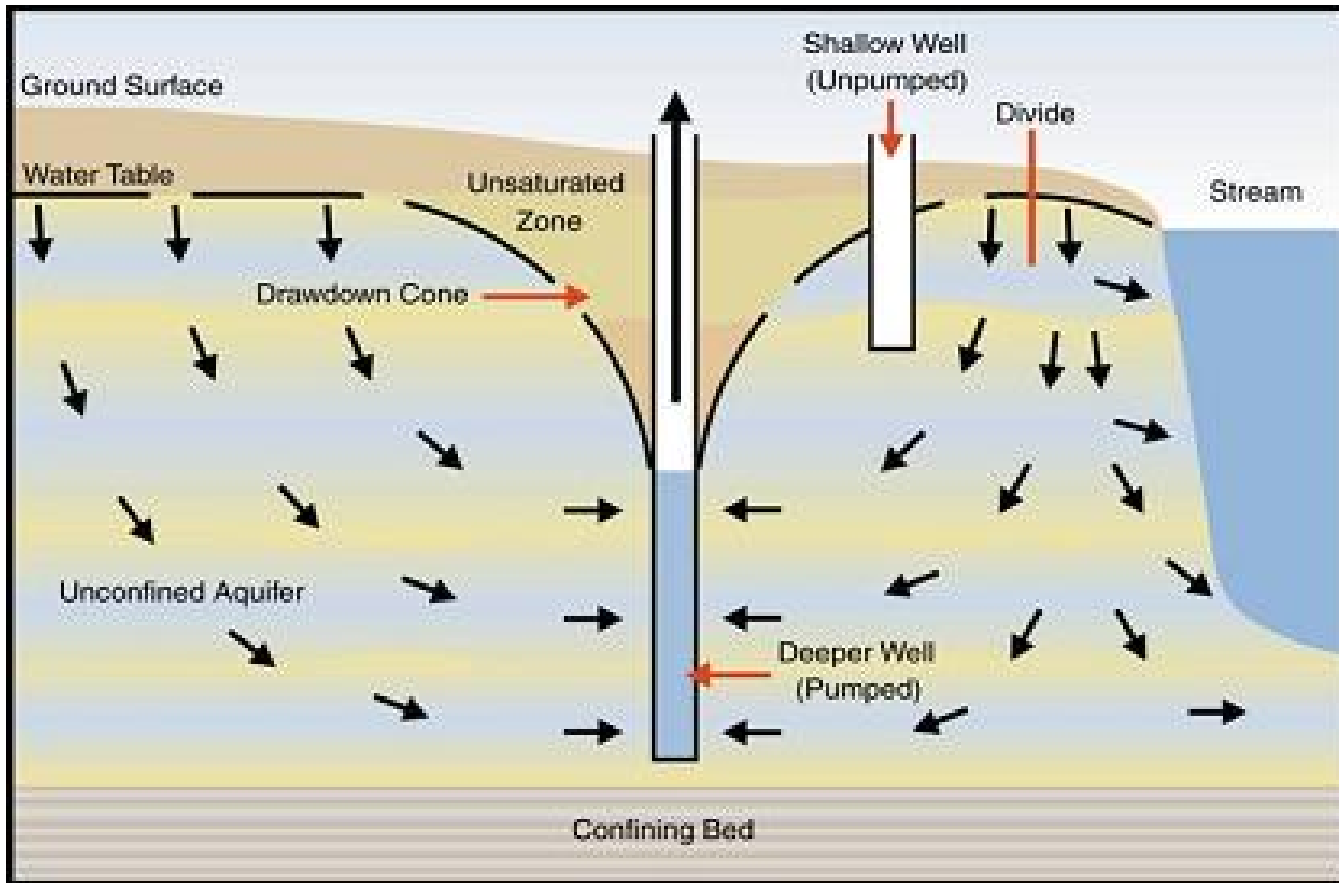
Crops





Soil Bacteria





Water Filtration





Support for Structures

