

ENVIRONMENTAL SCIENCE 20: SOIL

THE LIVING BODY OF SOIL

OUTCOME

- ES20-TE1: Analyze the importance of soils as an integral component of terrestrial ecosystems.

BACKGROUND KNOWLEDGE

- U of S backgrounders on soil structure, consistence, horizons, texture, color
- Importance of healthy soils: a TED talk and Comic Strip from biogeochemist, Dr. Asmeret Asefaw Berhe

ACTIVITY: SANATORIUM SITE SURVEY

1. Find a location to conduct a soil investigation into the physical properties and living body of the soil. You can design your own investigation based on the resources found in the “background knowledge” section, or use one of these soil lab guides to design a procedure:
 - a. Soil lab from “Teach the Earth” with a focus on ecological relationships
 - b. A comprehensive soil activity guide, developed in Canada with a variety of labs and activities
2. Based on your investigations, can you determine if the soil you studied is “healthy”? Use criteria from Dr. Berhe’s Ted talk/comic, information from the U of S video series, as well as your own personal/cultural knowledge to justify your determination. What other information do you need in order to judge soil health?

MATERIALS

Material lists can be found in soil lab guides.

EXTENSIONS

1. **ES20-TE1: Analyze the importance of soils as an integral component of terrestrial ecosystems.**
Investigate the impacts of urbanization on soil ecosystems. What role does Meewasin play in protecting soil ecosystems in our city? What impact does this have on the terrestrial ecosystems in and around our city?

ESSENTIAL QUESTIONS

1. How does soil support terrestrial life (micro and macro)?
2. How can we understand soil as a living entity?

HOME CONNECTION

Although urbanization creates significant challenges for maintaining soil health, city dwellers can contribute to healthy soils by composting food waste. The Saskatchewan Waste Reduction Council has detailed instructions for various types of composting that you can try at home. If you already have a composting system at home, investigate the impact of adding compost to very sandy soil. How does organic matter change water drainage? Texture? Color? Tendency to aggregate?

