

Soil Solutions brims with hands-on science lessons that utilize the local school landscape to connect students to the world of soils and plants in an inviting and relevant way. Activities are structured to foster wonder and curiosity and encourage ways to turn student questions into investigations. The teacher's role becomes that one of a collaborator and a partner in inquiry with their students. Aligned to meet North Carolina's Essential Science Standards third grade science ecosystems, the curriculum draws from current research and knowledge in crops, horticulture and soil sciences.

Using the 4-H Experiential Learning Model as a framework, Soil Solutions seeks to further life skills including communication, teamwork, critical thinking, and more, by engaging students to learn by doing, sharing their experience with each other, reflecting on their results and generalizing and applying what they know to new situations.

Materials and pre-class preparations are laid out, along with a suggested script. Where appropriate, vocabulary lists, worksheets and activity sheets are included. An educational kit containing most of the non-consumables needed for implementing these lessons is also available through your local 4-H agent. Contact your local Cooperative Extension and ask for the 4-H agent to learn more about the 4-H School Enrichment Curriculum.

ESSENTIAL STANDARDS

Ecosystems (2nd Grade)

Understand How Plants Survive in their Environments

Clarifying Objectives:

3.L.2.1 Remember the functions of the following structures as they relate to the survival of plants in their environments:

- Roots – absorb nutrients
- Stems – provide support
- Leaves – synthesize food
- Flowers – attract pollinators and produce seeds for reproduction

✓ **Soil Solutions** – Pollination Partners

✓ **Soil Solutions** – Seeds up Close

3.L.2.2 Explain how environmental conditions determine how well plants survive and grow.

✓ **Soil Solutions** – Happy Homes for Plants

✓ **Soil Solutions** – A Balancing Act

3.L.2.3 Summarize the distinct stages of the life cycle of seed plants.

✓ **Soil Solutions** –

Plant Growth Experiment: A Nutrient Study

3.L.2.4 Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine its ability to support the growth and survival of many plants.

✓ **Soil Solutions** – Is It Soil Yet?

✓ **Soil Solutions** – Living Off the Land

✓ **Soil Solutions** – A Balancing Act

