

Title: Recognize the importance of organic matter and soil carbon to soil quality and soil health

Type: Skill Knowledge

Performance Objective: Trainee will be able to:

- Explain why organic matter deserves special attention within the soil quality area of interest.
- Explain the effects organic matter has on soil.
- Point out the importance of organic matter and soil carbon to NRCS activities.

Target Proficiency:

- Awareness Understanding Perform w/ Supervision
 Apply Independently Proficiency, can teach others

Trainer Preparation:

- Be familiar with the soil quality concepts.
- Be familiar with soil carbon and its role in soil quality.
- Be familiar with the concept of “Managing for ‘C’ instead of ‘T’.”
- Be familiar with the Quiz provided to ensure that key learning points addressed are covered during reading and/or discussion.

Special Requirements:

- None

Prerequisite Modules:

- None

Procedure:

- Follow the Five-Step OJT Cycle of Knowledge of Training.

Notes:

- None

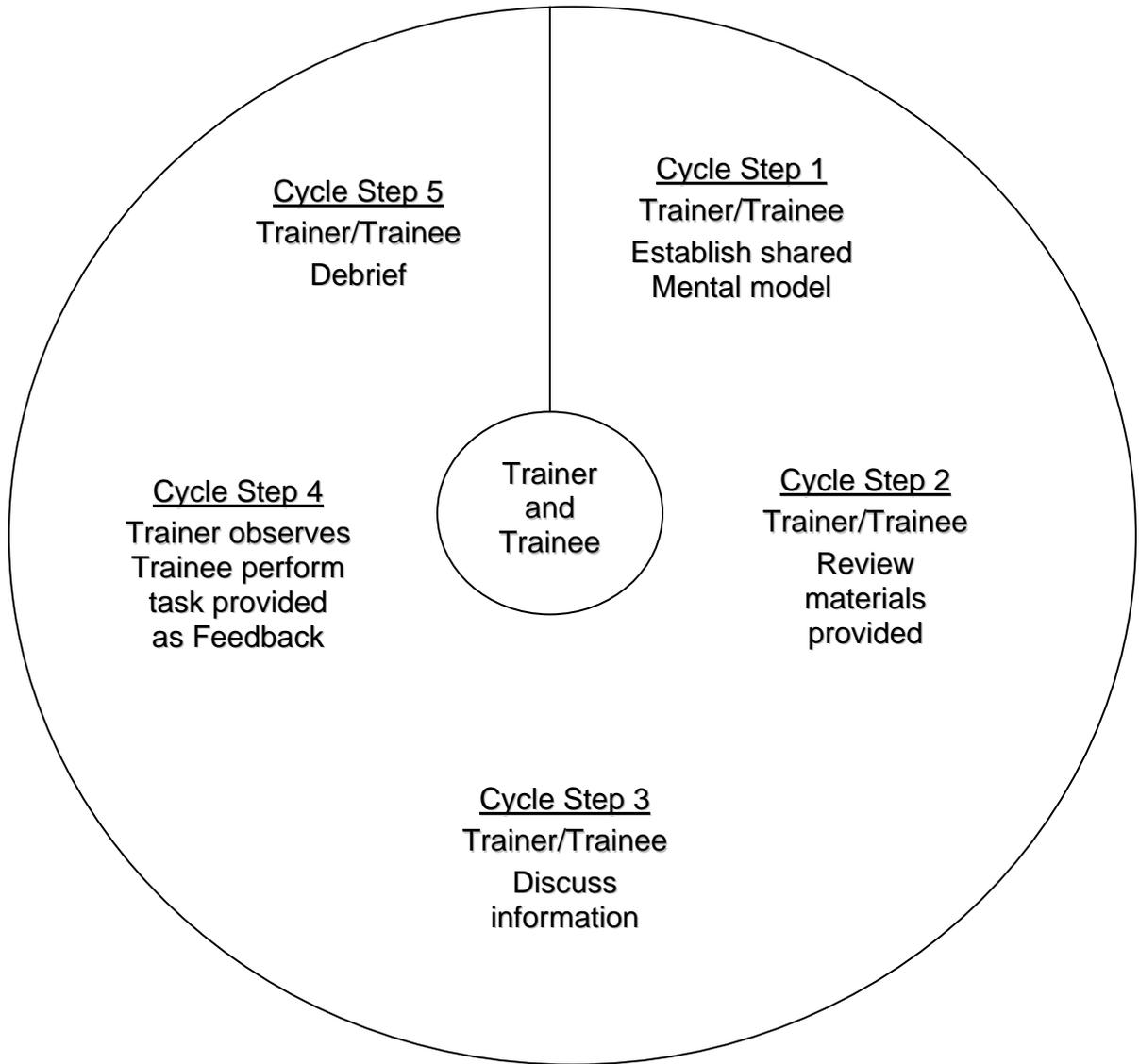
Authors:

- Jerry J. Daigle, State Soil Scientist, Alexandria, LA

Approved by:

- Marc Crouch, Training Coordinator, NSSC
- Craig Ditzler, National Leader, Standards and Soil Classification, NSSC

The Five-Step OJT Cycle for Knowledge Oriented Training



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WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
OJT Cycle for Knowledge Step 1: Trainer/Trainee establish shared mental model.	Trainer and Trainee review objectives of the training, agree on what the trainee will be expected to learn and how the trainee should be able to use this knowledge.
OJT Cycle for Knowledge Step 2: Trainee review materials provided.	Trainee Read/Review the following soil quality fact sheets posted on the SQI Website <ul style="list-style-type: none"> • Soil Quality (overview) http://soils.usda.gov/sqi/index.html • The role of Carbon in soil quality • The concept of planning for “C” instead of “T” http://soils.usda.gov/sqi/concepts/soil_organic_matter/som.html
OJT Cycle for Knowledge Step 3: Trainer/Trainee discuss information.	Trainer and trainee discuss what the trainee has read and/or reviewed. Trainer answers questions and addresses concerns of the trainee.
OJT Cycle for Knowledge Step 4 Trainer observes Trainee perform task provided as Feedback	Trainer asks trainee specific questions about organic matter and soil carbon and their importance to soil quality and soil health.
OJT Cycle for Knowledge Step 5 Trainer/Trainee Debrief.	<ul style="list-style-type: none"> • Trainer addresses any questions and concerns expressed by the trainee. • Trainer reinforces reason for the training. • Trainer reviews key points the trainee should have gleaned from the training.
Refresh	None

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Quiz

1. Organic matter is that fraction of the soil composed of anything that once lived.
 - a. True
 - b. False

2. Organic matter includes plant and animal remains in various stages of decomposition.
 - a. True
 - b. False

3. Organic matter, in a well-decomposed state, forms "humus."
 - a. True
 - b. False

4. Organic matter provides a carbon energy source for soil microbes.
 - a. True
 - b. False

5. Organic matter stabilizes and holds soil particles together, thus reducing the hazard of erosion.
 - a. True
 - b. False

6. Organic matter aids the growth of crops by improving the soil's ability to store and transmit air and water.
 - a. True
 - b. False

7. Organic matter stores and supplies such nutrients as nitrogen, phosphorus, and sulfur, which are needed for the growth of plants and organisms.
 - a. True
 - b. False

8. Organic matter retains nutrients by providing cation-exchange and anion-exchange capacities.
- a. True
 - b. False
9. Organic matter maintains soil in an uncompacted condition with lower bulk density.
- a. True
 - b. False
10. Organic matter makes soil more friable, less sticky, and easier to work.
- a. True
 - b. False
11. Organic matter retains carbon from the atmosphere and other sources.
- a. True
 - b. False
12. Organic matter reduces the negative environmental effects of pesticides, heavy metals, and many other pollutants.
- a. True
 - b. False
13. The amount of organic matter in the soil is controlled by a balance between additions of plant and animal materials and losses by decomposition.
- a. True
 - b. False
14. Practices that increase the content of organic matter are those that enhance the production of plant materials.
- a. True
 - b. False
15. Mold board plowing and other practices that rapidly increase the rate of decomposition of plant material may result in a net loss of organic matter.
- a. True
 - b. False

Measurement of Learning

Open attachment; OM and SOC Quiz-answers.pdf

Performance Report

Open attachment; Trainee Performance Report Form template.pdf