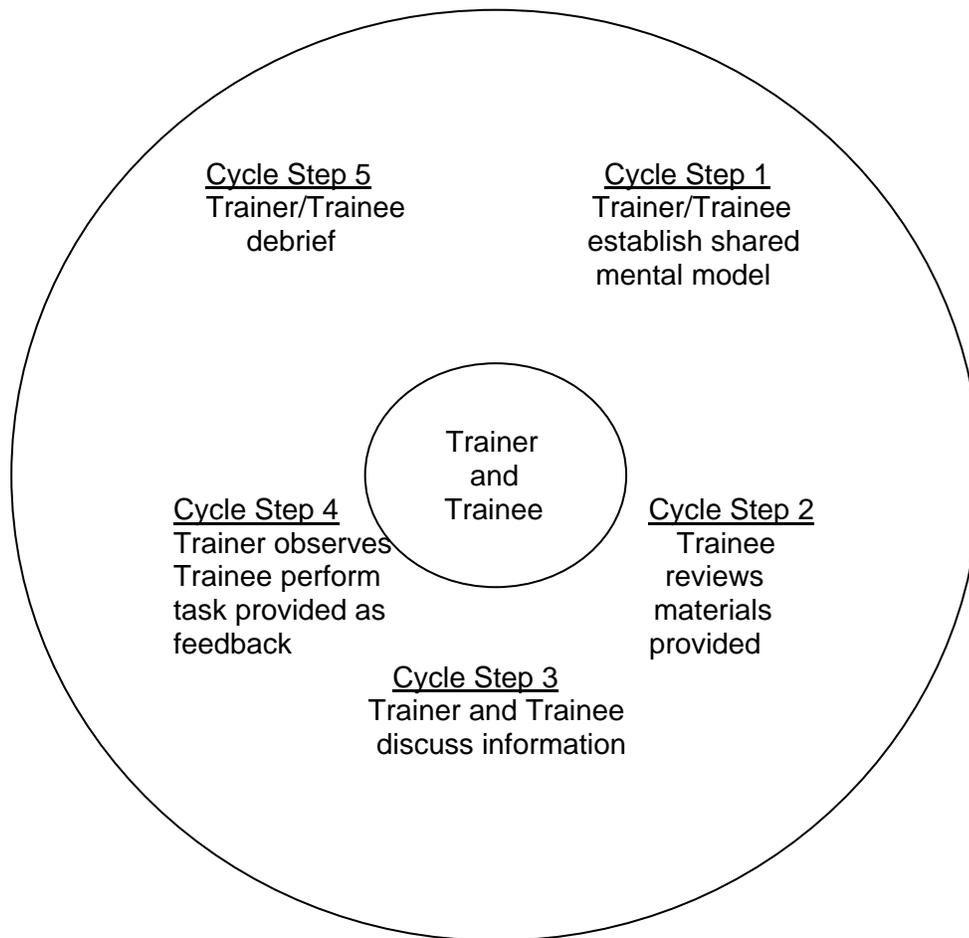


OJT Training Module Cover Sheet

Title: 1204 Understand how soil structure affects other soil qualities.
Type: <input type="checkbox"/> Skill <input checked="" type="checkbox"/> Knowledge
Performance Objective: Trainee will be able to ... <ul style="list-style-type: none">• Understand the connection between soil structure and soil quality and function.• Describe management practices that improve soil structure.
Target Proficiency: <input type="checkbox"/> Awareness <input checked="" type="checkbox"/> Understanding <input type="checkbox"/> Perform w/ Supervision <input type="checkbox"/> Apply Independently <input type="checkbox"/> Proficiency, can teach others
Trainer Preparation: <ul style="list-style-type: none">• Review types of soil structure found in your area.• Review soil quality issues common in your area. Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.
Special Requirements: Initiate an external learning request with a SF-182 in Aglearn for this activity. Instructions and a template are located on the training webpages for OJT modules.
Prerequisite Modules: <ul style="list-style-type: none">○ 1203 How to recognize soil structure.
Notes: None
Authors: Shawn McVey
Approved by: Marc Crouch

The Five-Step OJT Cycle for Declarative Training (Knowledge)



OJT Module Lesson

Title: 1204 Understand how soil structure affects other soil qualities.	
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Cycle step 1	Trainer and trainee review objectives of module.
Cycle step 2	<p>Trainer and trainee access via the internet and read/review:</p> <ul style="list-style-type: none"> ○ Soil Quality Technical Notes: <ul style="list-style-type: none"> ○ Note 10: Soil Quality Physical Indicators: Selecting Dynamic Soil Properties to Assess Soil Function: <ul style="list-style-type: none"> ▪ Soil Structure and Macropores ▪ Soil Crusts ▪ Aggregate Stability ▪ Slaking ○ Videos and Webinars (Soils/Soil Education/Videos and Webinars): <ul style="list-style-type: none"> ○ Water Movement in Soils
Cycle step 3	<p>Trainer and trainee discuss the following:</p> <ol style="list-style-type: none"> 1. Soil Structure: Where in the soil is granular structure typically found? Does granular structure allow for fast or slow infiltration and why? What is platy structure indicative of? How does soil structure influence water and solute flow in soil? 2. Soil Crusts: What is a soil crust and how does it develop? 3. Aggregate Stability: What is aggregate stability? Is it the same as soil structure and why? 4. Slaking: What does it mean if a soil slakes? If a soil slakes, what does the slaking mean for infiltration, runoff, and erosion? 5. What are some best management practices that improve soil structure and aggregate stability, reduce soil crusting, and limit slaking?
Cycle step 4 & 5	Trainer can debrief trainee and address any concerns. If local examples are limited, trainer may want to ask trainee to describe the effect soil structure types found outside the work area have on soil quality.

OJT Module Lesson Measurement of Learning

Title: 1204 Understand how soil structure affects other soil qualities.	
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Trainee's learning is measured.	Have the trainee complete the attached quiz below to reinforce the concepts in this module.

SF-182

Trainee and/or supervisor access Aglearn to verify completion of the module via its SF-182.

Quiz

1. True or False? Slaking indicates the stability of soil aggregates and resistance to erosion and suggests how well soil can maintain its structure to provide water and air for plants and soil biota when it is rapidly wetted.
2. True or False? Tillage of wet soil generally destroys surface soil structure.
3. True or False? Practices that provide soil cover, protect or result in accumulation of organic matter, maintain healthy plants, and avoid compaction improve soil structure.
4. True or False? A surface crust indicates poor infiltration, a problematical seedbed, and reduced air exchange between the soil and atmosphere.
5. Important soil functions related to soil structure are?
 - A) Sustaining biological productivity
 - B) Regulating and partitioning water and solute flow
 - C) Cycling and storing nutrients
 - D) All of the above
6. Which of the following practices lead to poor aggregate stability?
 - A) Tillage methods that breakdown plant organic matter, prevent accumulation of soil organic matter, and disrupt existing aggregates
 - B) Cropping, grazing, or other systems that leave soil bare and expose it to the physical impact of raindrops or windblown soil particles
 - C) Removing sources of organic matter and surface roughness by burning, harvesting, or otherwise removing crop residue
 - D) Using pesticides harmful to beneficial soil micro-organisms
 - E) All of the above