

OJT Training Module Cover Sheet

Title: 417 How to apply lab data to physical and chemical soil properties and qualities.

Type: Skill Knowledge

Performance Objective: Trainee will be able to ...

- Demonstrate application of laboratory data to populate soil property and quality data elements in NASIS.
- Use common conversion factors to calculate soil properties for interpretation and classification.

Target Proficiency:

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

Trainer Preparation:

- Have the *Soil Survey Laboratory Information Manual (SSIR #45)* available in hard copy for reference.
- Have example pedons in mind for use in the training.

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:

- 104 How to understand differences between soil properties and qualities.
- 415 How to access and use soil characterization data.
- 416 How to analyze and summarize lab data reports for specific important soil properties in your survey area.

Notes:

None

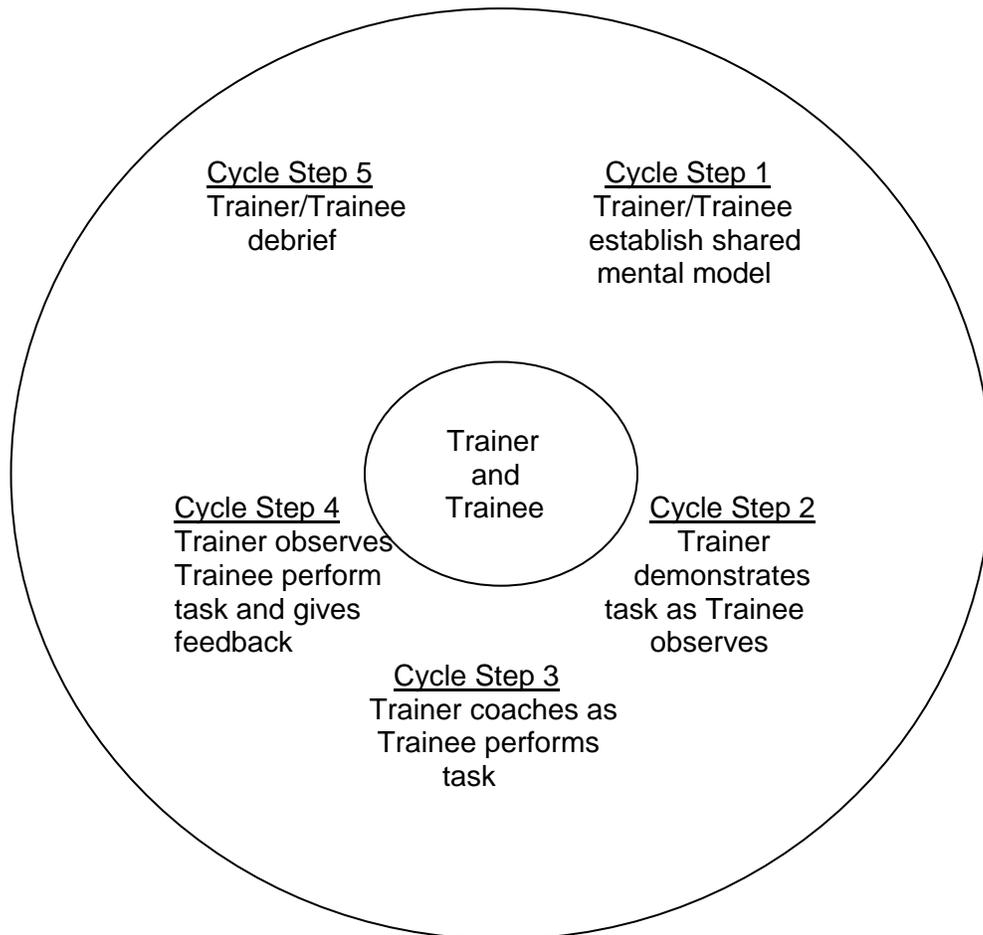
Authors:

Shawn McVey

Approved by:

Marc Crouch

The Five-Step OJT Cycle for Procedural Training (Skill)



OJT Module Lesson

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WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Cycle step 1	<p>Trainer and trainee review objectives of module.</p> <p>Trainer and trainee access:</p> <ul style="list-style-type: none"> • National Cooperative Soil Survey Soil Characterization Data web site
Cycle step 2	<p>Trainer selects a soil for training use and enters it in the NCSS Soil Characterization Data Query Interface. Trainer executes query and then demonstrates use of the Summary Reports setting (bottom of page) to determine the low, rv, and high values for the following analytes/procedures:</p> <ul style="list-style-type: none"> • Organic Matter (using Total Carbon) • Bulk Density 1/3 bar • Water 1/3 bar and 15 bar • Total Silt and Clay • Sand fractions <p>And the following soil quality:</p> <ul style="list-style-type: none"> • Available water capacity <p>Trainer discusses and demonstrates common factors used to convert or interpret lab data for analytes/procedures common to the local area.</p> <p>Common factors and conversions to use (reference National Soil Survey Handbook 618 for each):</p> <ul style="list-style-type: none"> • $OC = Total\ C - (0.12 \times CaCO_3)$ • $OM = OC \times 1.724$ • $AWC = (W_{1/3} - W_{15}) \times (Db_{1/3} \times (1 - vol\ rock\ fragments)/100)$ <p>Review how to calculate a weighted average for use in interpretation and classification. Additional factors and conversions may be incorporated if commonly used in the local soil survey area.</p>
Cycle step 3	<p>Trainer provides the name of an example soil for the trainee to use in this step.</p> <p>Trainee uses the NCSS Characterization Data link to find requested data in Step 2 above for the example soil and summarizes the data for each pedon and among multiple pedons with supervision.</p>

	<ul style="list-style-type: none">• Trainer positions self to observe and guide.• Ask trainee to explain each step.• Ask trainee to explain what each step does.• Ask the trainee to identify specific data by tier and column.• Ask the trainee to evaluate the data for poor dispersion and correct for it if necessary.• Ask the trainee to convert common analytes for interpretation.• Ask trainee to summarize.• Ask trainee for questions.
Cycle step 4	Begin Measurement of Learning below.
Cycle step 5	Trainer and trainee can debrief the exercise and discuss answers to any questions. Repeat the steps above until trainer is satisfied that the trainee can perform the steps independently.

OJT Module Lesson Measurement of Learning

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WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
<p>Give trainee a selected soil (with lab data for multiple pedons) from which to analyze and summarize data. The trainee must:</p> <ul style="list-style-type: none">• Locate the available laboratory data.• Generate summary report of individual pedons and multiple pedons by analyte/procedure.• Apply conversion factors and formulas as needed that are commonly used in the area.• Calculate a weighted average to summarize pedon data for interpretation and/or classification.	<p>During project activities, assign this task to the trainee. Sign off on performance when target proficiency is achieved.</p>

SF-182

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