

## OJT Training Module Cover Sheet

**Title: 207 How to relate a pedon description with lab data to classification—overview.**

**Type:**      Skill      Knowledge

**Performance Objective:** Trainee will be able to...

- Relate a pedon description with lab data to classification of a pedon.
- Locate selected data relative to his or her survey area on the SSL data sheet.
- Understand significant figures, rounding conventions, and other conditions associated with relating pedons to lab data for classification.

**Target Proficiency:**

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

**Trainer Preparation:**

- Locate (and print) two or more full characterization pedons in the SSL database for your survey area.
- Locate (and print) two or more reference sampled pedons and/or engineering sampled pedons in the SSL database if you use these for your survey area.
- Have the current hardcopy or ecopy of **Laboratory Information Manual SSIR #45** available as a reference as needed.
- Re-familiarize yourself with the lab data sheet, the objectives of this module, and other materials provided with this module.

**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:**

None

**Notes:** This module is developed to provide awareness and understanding. The course **Basic Soil Survey—Field and Lab** provides base level training in regards to actual classification of pedons with lab data. The course **Soil Technology—Measurement and Data Evaluation** provides a higher level of training in regards to actual classification of pedons with lab data. The trainer can either provide training beyond awareness by having the trainee utilize lab data to help classify pedons with trainer guidance or have these courses provide that training.

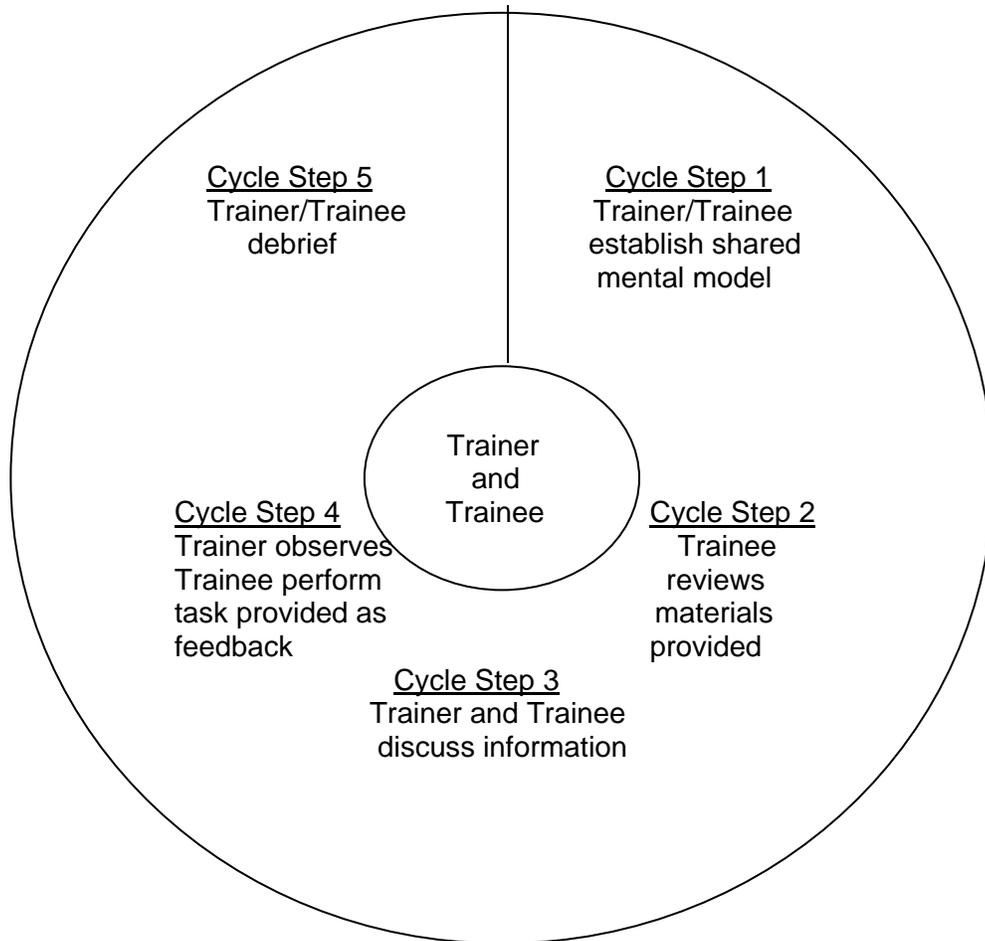
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# The Five-Step OJT Cycle for Declarative Training (Knowledge)



## OJT Module Lesson

**Title: 207 How to relate a pedon description with lab data to classification—overview.**

WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Cycle step 1	<p>Trainer and trainee review objectives of module.</p> <ul style="list-style-type: none"> <li>• Discuss initial goal of <i>understanding</i> proficiency versus being able to actually classify a pedon with lab data.</li> <li>• If the trainer intends to have trainee classify pedons, discuss this activity and how the trainer will help guide the activity (steps are not provided here nor is there a separate OJT module for that purpose).</li> <li>• Discuss the two courses that provide training in classifying pedons with lab data (See “Notes” on cover sheet).</li> <li>• Note the hardcopy/ecopy pedon descriptions and lab data to be used with this module.</li> </ul>
Cycle step 2	<p>Access hardcopy or via the internet and review <b>Laboratory Information Manual SSIR #45</b> and its purpose by having trainee read the Preface and skim the contents highlighting content that the trainer knows to be relevant to your survey area.</p> <p>Review the attached document <b>Rounding off numbers for use with Soil Taxonomy.pdf</b>.</p>
Cycle step 3	Trainer and trainee discuss the following information.
1. Use the right data.	<ol style="list-style-type: none"> <li>1. Discuss rounding conventions using the document provided.               <ol style="list-style-type: none"> <li>a. Note that you round before applying any rules for using lab data in classification.</li> </ol> </li> <li>2. Discuss “significant figures” as precision required by Taxonomy. Examples:               <ol style="list-style-type: none"> <li>a. Argillic horizon criteria: “If any part of the eluvial horizon has less than 15 percent total clay...”                   <ol style="list-style-type: none"> <li>i. Significant number does not go beyond the decimal point (15%, whole number, in this case in Taxonomy).</li> </ol> </li> <li>b. Spodic materials criteria: “a pH value in water (1:1) of 5.9 or less and an organic carbon content of 0.6 percent or more”.</li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>i. Significant number in both cases goes to tenths and should be reported and used as such.</li> </ul> <p>3. Relate convention that data reported by the SSL is reported one decimal place beyond dependable digits. Example:</p> <ul style="list-style-type: none"> <li>a. Lab analysis = 30.4, the 0.4 is not certain.</li> </ul>
<p>2. Why we sample.</p>	<p>1. Relate steps in this process:</p> <ul style="list-style-type: none"> <li>a. Make initial assumptions—accomplished by describing the soil pedon and completing site and pedon data.</li> <li>b. Collect samples to support assumptions.</li> <li>c. Base final classification on lab data in support of the initial assumptions.</li> </ul> <p>2. Reminder that horizon designations do not equal taxonomic classification.</p> <ul style="list-style-type: none"> <li>a. Example: Not all Bt horizons are argillic horizons.</li> </ul> <p>3. Note that not all sampled pedons are equal. If the following are available in your area, define them and explain sampling for them:</p> <ul style="list-style-type: none"> <li>a. Characterization</li> <li>a. Reference</li> <li>b. Engineering</li> </ul>
<p>3. Review the output.</p>	<p>1. Review the pedon description report for the selected pedons for this activity.</p> <p>2. Review the basic content of a lab data report.</p> <ul style="list-style-type: none"> <li>a. Heading, soil survey number, county, state, print date, series sampled as, series revised to, other.</li> </ul> <p>3. Review the basic layer/horizon information in a lab data report.</p> <p>4. Review the tiers in the lab data reports you selected for this activity for:</p> <ul style="list-style-type: none"> <li>a. Primary characterization.</li> <li>b. Supplemental characterization.</li> <li>c. Taxonomy characterization.</li> </ul> <p>5. Locate critical data elements and their use (from SSIR #45) that you often use in your survey area and explain what they are. Examples may include:</p> <ul style="list-style-type: none"> <li>a. CaCO<sub>3</sub> equivalent for calcic horizons.</li> </ul>

	<ul style="list-style-type: none"> <li>b. Base saturation <math>\text{NH}_4\text{OAc}</math> for Mollisols.</li> <li>c. Sum of base saturation for Ultisols and Alfisols.</li> <li>d. Use of total resistant minerals for siliceous mineralogy in the Southeast.</li> <li>e. Andic properties sheet for the Andisols and andic intergrades where available.</li> </ul> <p>6. Using the example pedons with lab data you have made available for this activity (characterization, reference, engineering sampled pedons), review and discuss how you use lab data with your assumptions to classify soils in your survey area. Such data as:</p> <ul style="list-style-type: none"> <li>• PSDA</li> <li>• Base saturation</li> <li>• Ratios to clay</li> </ul>
<p>Cycle step 4</p>	<p>Provide the trainee with examples you have available for this activity and ask the trainee to locate data relative to selected assumptions made (with the pedon description).</p> <ul style="list-style-type: none"> <li>• Sand, silt, and clay estimates</li> <li>• Texture</li> <li>• pH</li> <li>• other</li> </ul> <p>With the same pedons and data, have the trainee locate data relative to inferred assumptions, such as:</p> <ul style="list-style-type: none"> <li>• Argillic horizon (or not)</li> <li>• Alfisols (versus Ultisols) decision</li> <li>• Whatever relates to your survey area and the examples provided</li> </ul>
<p>Cycle step 5</p>	<p>Trainer can debrief trainee and address any concerns. Determine if the trainee understands the relationship of the pedon description (and its assumptions) to lab data for the purpose of classifying soils.</p>

## OJT Module Lesson Measurement of Learning

Title: **207 How to relate a pedon description with lab data to classification – overview.**

WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Using a pedon with characterization data available, have the trainee locate selected data in support of selected assumptions.	Trainer provides description and data and targets the data to be located in support of the assumptions.
Using a pedon with reference data available, have the trainee locate the data and determine if it supports the assumptions made in the description.	Trainer provides description and data and targets the assumption that the lab data is to test via the reference sample (PSDA for example).

### **SF-182**

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