OJT Training Module Cover Sheet

**Title:** 105 How to differentiate and identify soil horizons in the field.

**Type:** ☒ Skill ☐ Knowledge

**Performance Objective:** Trainee will be able to …
- Describe soil horizons and their depths using appropriate soil horizon nomenclature and following NCSS guidelines.
- Describe the boundaries between horizons following NCSS guidelines.
- Describe observation method used for each horizon following NCSS guidelines.

**Target Proficiency:**
☐ Awareness ☐ Understanding ☐ Perform w/ Supervision
☒ Apply Independently ☐ Proficiency, can teach others

**Trainer Preparation:**
- Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.
- Have field locations with pit, trench, road cut, or auger borings available.
- Have the *Field Book for Describing and Sampling Soils* available.
- Have hardcopy of the 232 soil description form or Pedon PC available.
- Have the current *Keys to Soil Taxonomy* available.
- Have suitable items for markers to designate horizon breaks (nails, golf tees, etc.) available.

**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:**
- 101 How to use the *Field Book for Describing and Sampling Soils*.
- 102 How to fill out a 232 soil description form.

**Notes:**
None

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Shawn McVey
The Five-Step OJT Cycle for **Procedural** Training (Skill)
# OJT Module Lesson

**Title:** 105 How to differentiate and identify soil horizons in the field.

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<th>WHAT</th>
<th>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</th>
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| Cycle step 1 | Have trainee access via the internet and read/review the Soil Survey Manual, chapter 3:  
- Sections on Designations for Horizons and Other Layers.  
Access hardcopy or via the internet and review material in the Field Book for Describing and Sampling Soils, focusing on the charts and discussions for:  
- Observation Method  
- Master, Transitional, and Common Horizon Combinations  
- Horizon Suffixes  
- Other Horizon Modifiers  
- Horizon Depth  
- Horizon Boundary  
Access hardcopy or via the internet and review current edition of Keys to Soil Taxonomy, Chapter 18, “Designations for Horizons and Layers.”  
Trainer should explain that up-to-date nomenclature for describing horizons should be referenced in the current Keys to Soil Taxonomy (or its amendment). |

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<tr>
<th>Cycle step 2</th>
<th>Do the following:</th>
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| 1. Review what is recorded according to the Field Book and SSM. | • Note observation methods recorded for disturbed, undisturbed, and wall/floor.  
• Note that depths (and thickness if recorded) are now to be recorded in metric units (centimeters).  
• Note that horizon boundary has distinctness and topography recorded. |
| 2. Demonstrate recognition of what you behold. | Do this in the field. Start placing your markers.  
• Start with what you can see (color, structure, features, fragments, roots, and other) and place markers where your confidence is highest in distinguishing between horizons.  
• Modify and/or refine with what you can feel (texture, consistence, and other).  
• Modify and/or refine with what you can measure in the field (pH, effervescence, EC, and other). |
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<th>Task Description</th>
<th>Reference Material</th>
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| 3.   | Demonstrate selecting appropriate master horizons. | Reference the current *Keys to Soil Taxonomy*.  
- Review master horizons in general and those typically used in your survey area.  
- Review transitional and combination horizons in general and those typically used in your survey area. |
| 4.   | Demonstrate selecting appropriate horizon suffixes. | Reference the current *Keys to Soil Taxonomy*.  
- Review suffixes in general and those typically used in your survey area.  
- Review “Conventions for Using Letter Suffixes” and emphasize the order suffixes are written when used in combination with each other.  
- Trainer should note that suffixes do not necessarily equate to diagnostic horizons. Suffixes are qualitative while diagnostic horizons are also quantitative. |
| 5.   | Demonstrate vertical subdivision of master horizons. | Reference the current *Keys to Soil Taxonomy*. |
This will require a soil profile with a discontinuity. |
| 7.   | Discuss use of prime and caret symbols to differentiate appropriate horizons. | Reference the current *Keys to Soil Taxonomy* and discuss use of these symbols (if appropriate profiles are not readily available). |
| 8.   | Demonstrate describing and recording horizon boundaries. | Reference the Field Book. Discuss this subject in general and indicate what is typically seen in your survey area. |

**Cycle step 3**  
Coaching the trainee, have the trainee describe and record soil horizons as appropriate in your survey area.

**Cycle step 4**  
Repeat cycle step 3 without coaching.  
During project activities, assign the trainee the task of describing soil horizons as soil descriptions are completed.

**Cycle step 5**  
Answer any questions. Repeat any steps as necessary.
**OJT Module Lesson Measurement of Learning**

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<td>Describe soil horizons routinely during project activities.</td>
<td>During project activities, assign this task to the trainee. Sign off on performance when target proficiency is achieved.</td>
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**SF-182**

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