

## OJT Training Module Cover Sheet

**Title: 003 Understand the concepts of landscape models and soil catenas.**

**Type:**      Skill      Knowledge

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

- Understand the concept of landscape models and soil catenas as used in soil survey.

**Target Proficiency:**

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

**Trainer Preparation:**

- Use block diagrams and cross sections from your survey area (or other areas if none are available from your area).
  - Have some for use in discussion.
  - Hold back some for trainee to practice with and demonstrate learning.
- Have ready access to GIS-based soil-landscape models for your survey area (or other areas if models of your area are not available).
- If necessary, refresh knowledge of geomorphology, stratigraphy, hydrology, and pedology relationships that will be used in the examples selected.
- Have ready access to OSDs, soils key, and other sources of soil component information related to the selected examples.
- You may not have prepared soil catenas. Be prepared to recognize catenas within each landscape model used (block diagrams, cross sections, etc.)

**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:**

None

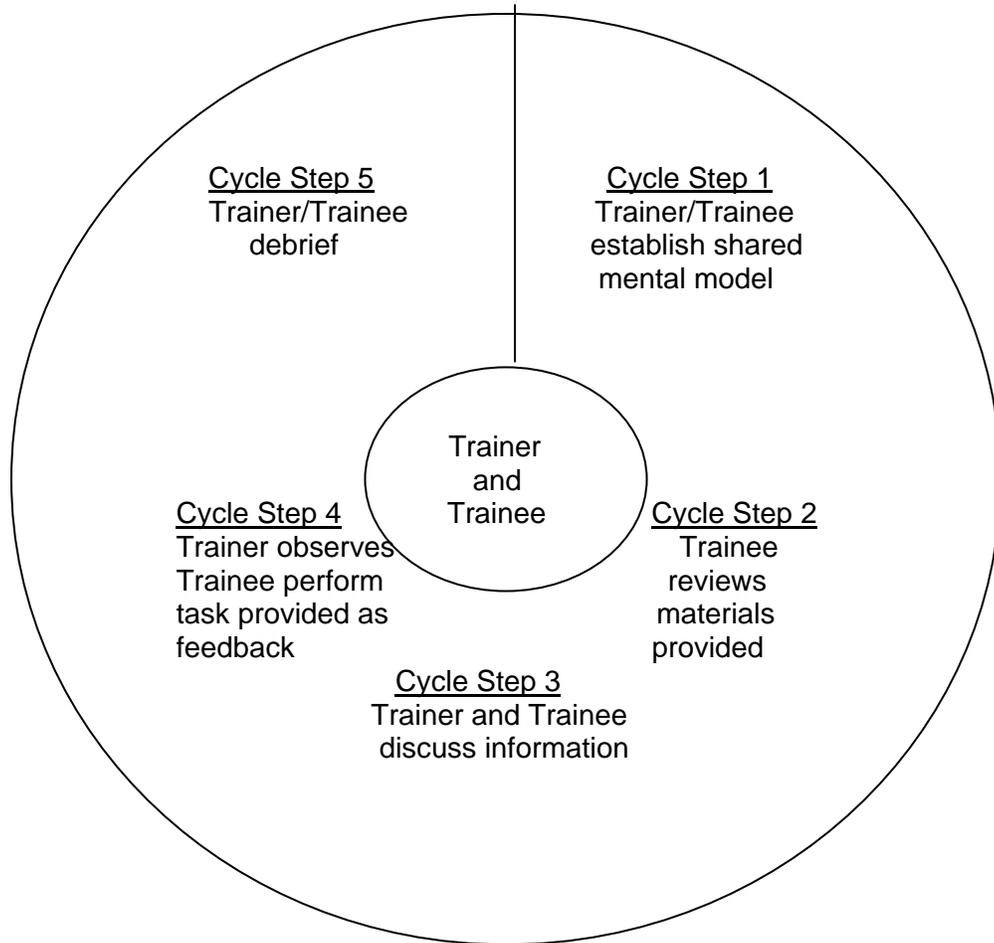
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# The Five-Step OJT Cycle for Declarative Training (Knowledge)



## OJT Module Lesson

Title: <b>003 Understand the concepts of landscape models and soil catenas.</b>	
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Cycle step 1	<p>Trainer and trainee review objective and agree that this is an overview of the concepts and how they relate to the work done in our National Cooperative Soil Survey. Development of soil-landscape models will be a separate effort later in the training process.</p> <p>Discuss why visual and conceptual models improve interpretation and communication of soil knowledge with clients and other soil scientists. They help to document decisions made regarding soil and landscape relationships.</p>
Cycle steps 2 & 3	<p>Have trainee do the reading, trainer shows the following and discusses each as noted:</p>
1. Define soil-landscape models and soil catenas.	<p>Trainer and trainee access via the internet and read/review:</p> <ul style="list-style-type: none"> <li>• <b>Soil Survey Manual, Chapter 1:</b> <ul style="list-style-type: none"> <li>○ <b>Soil-Landscape Relationships</b></li> </ul> </li> </ul> <p>A <b>Soil-landscape model</b> is used to reflect or predict soil-landscape relationships, usually relating to common geology, geomorphic history, and pedogenic evolution.</p> <p>A <b>Soil catena</b> is a sequence of soils, usually on hillslopes, arising from uniform geology and climate with variations in relief and hydrology.</p> <p>Trainer should, as part of this discussion and the next two substeps, be ready to relate in general terms the relationship of geomorphology, stratigraphy, hydrology, and pedology in the soil-landscape model and soil catena concepts in the examples used.</p> <p>Also be ready to point out the abrupt versus the gradual changes that occur across each landscape and catena.</p>
2. Review available analog examples of soil-landscape models and soil catenas.	<p>Use available block diagrams and cross sections to view and explain the concepts to your trainee as they exist in your survey area. If examples are not available, sketch some examples to represent different landscapes in your survey area.</p> <p>Use your soils key and/or OSDs to relate key soil</p>

	<p>properties and/or qualities relevant to the soil landscape relationships in the examples. The Geographically Associated Soils section of the OSD should provide example soil-landscape models for use. Describe the catenas as they exist within the model.</p> <p>Have a short discussion relating these models to the vector world of soil polygons with their emphasis on the named major components.</p>
<p>3. Review available digital examples of soil-landscape models and soil catenas.</p>	<p>Use ArcGIS to view existing products or manipulate data to reflect several AOIs (Areas of Interest) in your survey area and discuss:</p> <ul style="list-style-type: none"> <li>• Soil-landscape relationships within each AOI that could be represented by a model</li> <li>• Soil catenas found within the AOI and the modeled area</li> </ul> <p>Use your soils key and/or OSDs to relate key soil properties and/or qualities relevant to the soil landscape relationships in the examples.</p> <p>Have a short discussion again about the vector world. Add to this discussion the use of terrain analysis (a form of modeling) and the raster maps of the future and how our models will reflect all components and their probability of existence at any given pixel across the landscape (and hence the interrelationships on the landscape).</p>
<p>Cycle step 4</p>	<p>Provide the trainee with two or more examples of soil-landscape models and soil catenas in your survey area and ask him or her to describe what the models and catenas indicate. Have the trainee use your soils key and/or OSDs to relate key soil properties and/or qualities across the models and catenas.</p>
<p>Cycle step 5</p>	<p>Discuss what has been covered and what has been learned. Repeat any part of the training that the trainee does not understand.</p>

## **OJT Module Lesson Measurement of Learning**

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<b>WHAT</b>	<b>WHY, WHEN, WHERE, HOW, SAFETY, QUALITY</b>
Use Cycle Step 4 above for measurement of learning.	Use this cycle step as your measurement of learning, remembering that this module is meant to be an overview of the concepts of these tools.

### **SF-182**

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