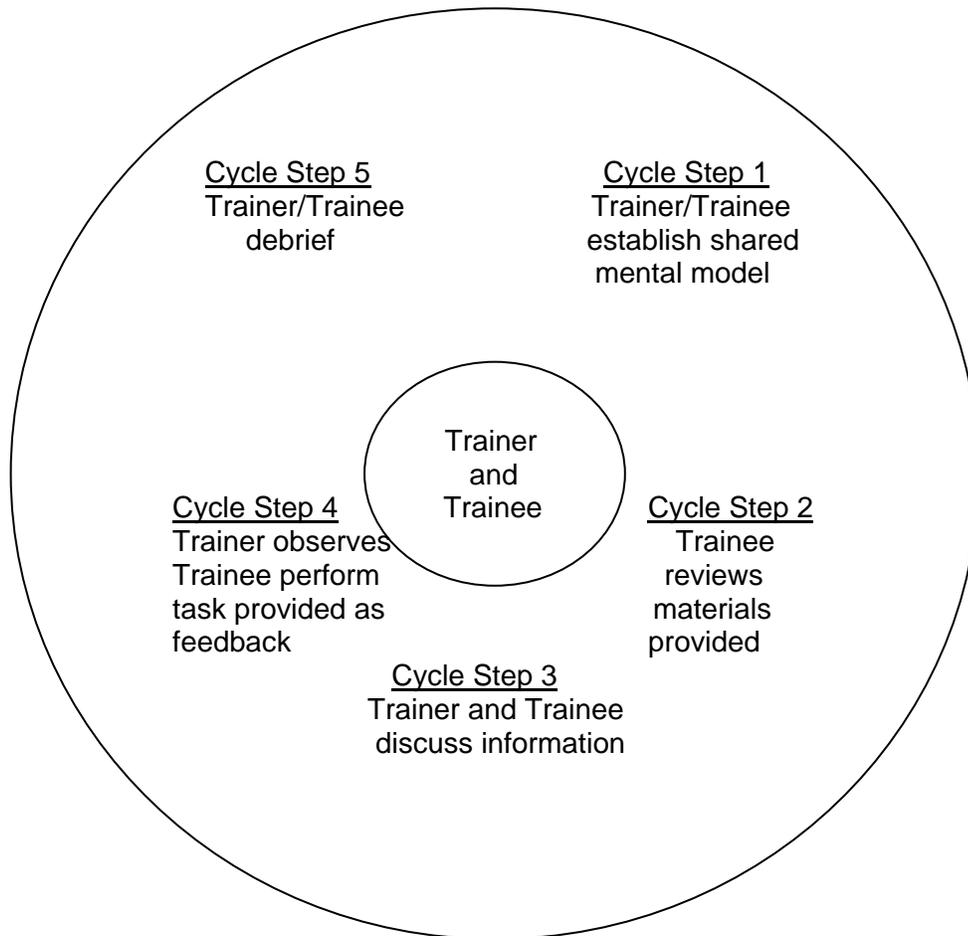


OJT Training Module Cover Sheet

Title: 1005 Understand the water-holding capacity property of soils.
Type: <input type="checkbox"/> Skill <input checked="" type="checkbox"/> Knowledge
Performance Objective: Trainee will be able to: <ul style="list-style-type: none">• Understand available water capacity (AWC)• Locate where AWC data for soils is found.• Calculate root zone available water capacity (RZAWC).
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">• Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.• Trainer should be familiar with this AWC activity.
Special Requirements: <ul style="list-style-type: none">• 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.• Trainer should be familiar with the assigned reading/review material in the lesson plan that follows.• Trainer should select several soils with and without rooting restrictions from area and have OSDs available.
Prerequisite Modules: None
Notes: It would be appropriate to have field site(s) located. Also needed are a written methodology on finding AWC data, a procedure to calculate RZAWC, and a calculator or computer spreadsheet. Additional skill development may be facilitated using Soil Survey Field and Laboratory Methods Manual, SSIR 51 , 3.4 Water Retention, 3.4.3 Plant Available and Unavailable Water Estimates
Authors: H. Raymond Sinclair, Jr.
Approved by: Marc Crouch

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



OJT Module Lesson

Title: 1005 Understand the water-holding capacity property of soils.																																					
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY																																				
Cycle step 1	Trainer and trainee review the objective of this module on available water capacity (AWC).																																				
Cycle step 2	<p>Trainer and trainee access via the internet and read/review:</p> <ul style="list-style-type: none"> • National Agronomy Manual, Part 504, Water Management, Subpart 504A Managing Soil Moisture on Non-irrigated Lands • National Soil Survey Handbook 618: <ul style="list-style-type: none"> ○ Soil Properties and Soil Qualities, Available Water Capacity • Soil Quality Information Sheet, Soil Quality Resource Concerns: <ul style="list-style-type: none"> ○ Available Water Capacity 																																				
Cycle step 3	<p>Trainer:</p> <ul style="list-style-type: none"> • Asks trainee to explain available water capacity as it relates to plants and as it occurs among different soils. • Discuss the morphological soil features that affect AWC in the rooting zone. • Discuss any root limiting layers common to the survey area and how they affect AWC. • Demo paper based calculations of AWC for the rooting zone of selected soils using Web Soil Survey to access AWC in in/in via Reports/Physical Soil Properties for your area. <p>Example root zone (RZAWC) calculations:</p> <p>Soil 1: Formed in loess and has no restrictive layer ≤60 inches (rooting depth to 60 inches). .</p> <table border="1"> <thead> <tr> <th><u>Horizon</u></th> <th><u>Depths</u></th> <th><u>AWC</u></th> <th><u>Total AWC</u></th> </tr> </thead> <tbody> <tr> <td>Ap</td> <td>0-10</td> <td>0.20</td> <td>2.0</td> </tr> <tr> <td>Bt1</td> <td>10-30</td> <td>0.18</td> <td>3.6</td> </tr> <tr> <td>Bt2</td> <td>30-40</td> <td>0.17</td> <td>1.7</td> </tr> <tr> <td>C</td> <td>40-60</td> <td>0.16</td> <td>3.2</td> </tr> </tbody> </table> <p style="text-align: right;">RZAWC = 10.5 inches</p> <p>Soil 2: Formed in loess and has a restriction (Btx=fragipan) at 30 inches.</p> <table border="1"> <tbody> <tr> <td>Ap</td> <td>0-10</td> <td>0.20</td> <td>2.0</td> </tr> <tr> <td>Bt</td> <td>10-30</td> <td>0.18</td> <td>3.6</td> </tr> <tr> <td>Btx</td> <td>30-50</td> <td>0.06</td> <td></td> </tr> <tr> <td>IIB</td> <td>50-60</td> <td>0.15</td> <td></td> </tr> </tbody> </table>	<u>Horizon</u>	<u>Depths</u>	<u>AWC</u>	<u>Total AWC</u>	Ap	0-10	0.20	2.0	Bt1	10-30	0.18	3.6	Bt2	30-40	0.17	1.7	C	40-60	0.16	3.2	Ap	0-10	0.20	2.0	Bt	10-30	0.18	3.6	Btx	30-50	0.06		IIB	50-60	0.15	
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	<p style="text-align: right;">RZAWC = 5.6 inches</p> <ul style="list-style-type: none"> • Use Web Soil Survey to obtain AWC in cm per available depths via Soil Properties and Qualities/ Soil Physical Properties for soils in your area.
Cycle step 4	Trainer observes trainee perform the following tasks:
1. Trainee will describe restrictive horizons.	Trainer observes trainee describes various restrictive horizons in his or her geographical area of responsibility.
2. Trainee calculates the RZAWC for a typical pedon.	Trainee selects one or more official soil series descriptions and determines the RZAWC, including if the calculated official soil series RZAWC is the same as or different from the RZAWC designated in Web Soil Survey or the Soil Data Mart.
Cycle step 5	Trainer and trainee discuss restrictive horizons and application of AWC and RZAWC in the trainee's geographical area of responsibility.

OJT Module Lesson Measurement of Learning

Title: 1005 Understand the water-holding capacity property of soils.	
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Trainee's learning is measured.	Have the trainee select more than one official soil series and calculate the AWC and RZAWC for the typical pedon. Ensure that the trainee selects a soil series containing a restrictive horizon. Have the trainee point out any restrictive horizons. Have the trainee describe to the trainer any differences between his or her calculation and the answer designated in Web Soil Survey or the Soil Data Mart for the soil series in a given map unit.
Apply knowledge gained to field work.	Trainee knows what AWC is and where to find the data, is able to make AWC and RZAWC calculations, and can identify the kind of restrictive layers influencing RZAWC in his or her geographical area of responsibility.

SF-182

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