

OJT Training Module Cover Sheet

Title: 116 Fragments-How to describe content of rock and other fragments in the soil.

Type: Skill Knowledge

Performance Objective: Trainee will be able to ...

- Distinguish between rock, pararock, and other fragments in the soil.
- Determine and describe the quantity of 2 to 75mm rock fragments in the soil on a weight basis (<75 mm basis).
- Determine and describe the quantity of >75mm rock fragments in the soil on a volume and weight basis (whole soil basis).

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 soil samples with fragments (minimum of 30-60 kg each sample) and/or 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 following equipment available:
 - Scale, 100-lb (45-kg) capacity
 - Sieves, square-hole
 - 9 mesh, 2 mm
 - 3 inches, 76 mm
 - Calculator

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

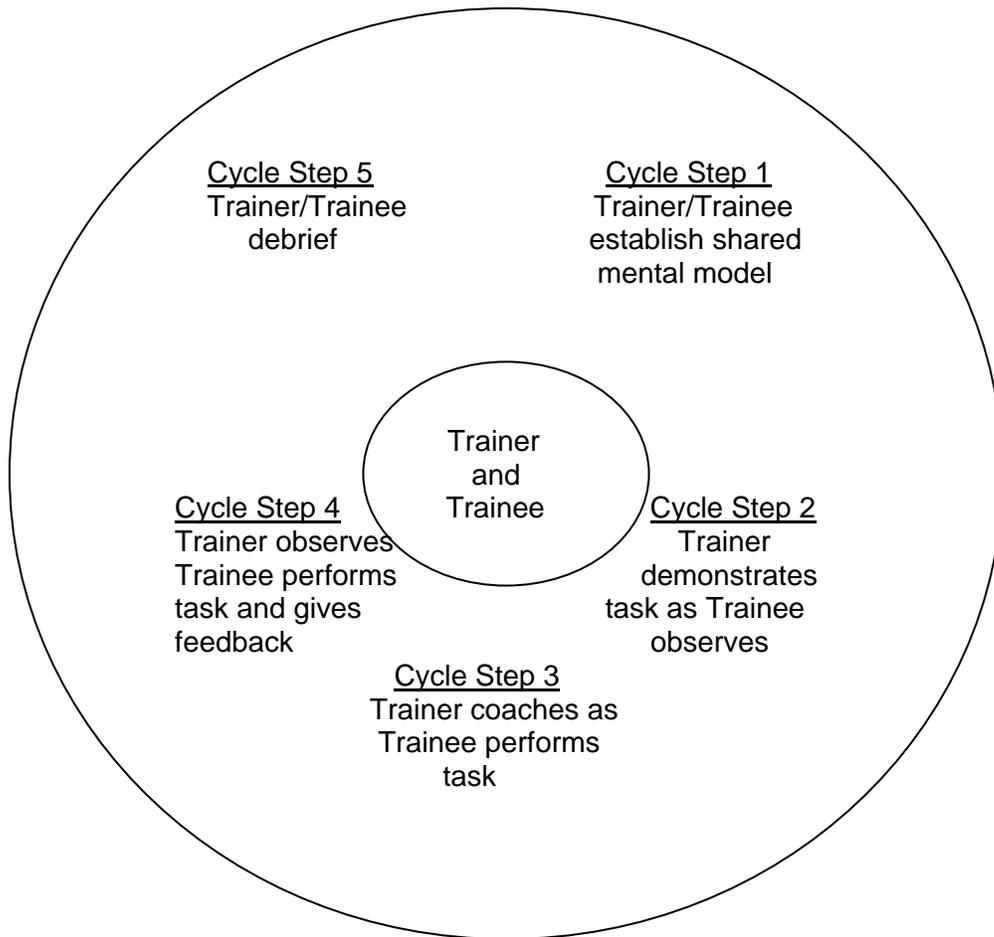
Authors:

Cathy Seybold
Marc Crouch

Approved by:

Shawn McVey

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



OJT Module Lesson

Title: 116 Fragments-How to describe content of rock and other fragments in the soil.	
WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Cycle step 1	<p>Trainee should access via the internet and read Soil Survey Manual, Chapter 3 section on rock fragments.</p> <p>Access via the internet and be familiar with National Soil Survey Handbook 618, Fragments in the Soil.</p> <p>Access via the internet and be familiar with Soil Survey Field and Laboratory Methods Manual: Soil Survey Investigations Report No. 51, version 1.0;</p> <ul style="list-style-type: none"> • 3.2.2 Particle-Size Distribution Analysis- Particles >2mm, pages 57-65. • 3.7.5 Slaking (Disaggregation) for Identification and Semi quantification of Cemented Materials, pages 116-126. <p>Access hardcopy or via the internet and review material about fragments in the <i>Field Book for Describing and Sampling Soils</i>.</p> <p>Discuss whether you only estimate volume or if you also follow actual percent by weight procedures. Note that this module will address percent by weight for the 2 to 75mm fraction and volume estimates for the >75mm fraction.</p> <p>Note that pararock is used if fragments are soft (rupture resistance – cementation class is < strongly cemented, and do not slake if submerged in water for > 1 hour).</p> <p>Note that procedures also apply to other kinds of coarse fragments (woody, shell, carbonate nodules, etc.)</p>
Cycle step 2	Do the following:
1. Review what can be recorded according to the Field Book and SSM.	Note that kind, volume percent, roundness/shape, and size are usually recorded.
2. Demonstrate how to describe and record rock, pararock, and other fragment volume estimates.	<p>Do this in the field.</p> <ul style="list-style-type: none"> • Estimate rock fragments. • Estimate pararock fragments, where present (used to modify texture). • Estimate volume for size classes as

	appropriate.
3. Demonstrate sampling, sieving, and weighing for the 2-to 75-mm course fragment determination.	Do this in the field, take sample back to office, or use existing samples from some source. <ul style="list-style-type: none"> • A minimum of 30 to 60 kg of material is used. • Pararock is crushed and passed through the sieve or removed.
4. Demonstrate calculation that converts volume estimates to weight percentages.	Convert volume to weight using the density of the course fragments and bulk density of the soil following calculations on page 64 in SSIR 51.
Cycle step 3	Coaching the trainee, have the trainee describe and record fragments 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 and recording fragments as soil descriptions are completed.
Cycle step 5	Answer any questions. Repeat any steps as necessary.

OJT Module Lesson Measurement of Learning

Title: 116 Fragments-How to describe content of rock and other fragments in the soil.

WHAT	WHY, WHEN, WHERE, HOW, SAFETY, QUALITY
Describe soil fragments >2 mm in size routinely during project activities.	During project activities, assign this task to the trainee. Sign off on performance when target proficiency is achieved.

SF-182

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