

## Data Table One - Gross Observation Instructions schmied©2010

### Materials

Draft Data Table One/Pencil    Soil Samples A, B, & C    Colored Pencils  
2 sheets of newspaper    1 sheet of printer paper    Dual lens hand magnifier

**Procedure:** - *Put your Period number in front of each step when complete*

### 1. Each team member follow steps below to complete Gross Observation Section of DT1

**Instructions:** *This section should take about 35 minutes to complete*

#### a) **First Entry: Team Prediction.**

- Take a sample bucket and place safely on a nearby student desk. Note the Sample name (A, B, or C). Examine the soil in the bucket.
- Then proceed to the next sample and examine this sample... note the Sample name.
- Finally go to the last of the three samples. (Be sure you have gone to each an A, B, and C bucket.
- Now make an initial Prediction on which layer each soil Sample is from (Litter Layer, Topsoil – A, B horizon, or C horizon. **Use the prediction format below. Make a prediction for EACH Sample and enter each in proper section on Data Table One.**

**Sample A is from the \_\_\_ layer because ....(give at least one scientific observation to support the prediction.)**

**Sample B is from the \_\_\_ layer because .... (give at least one scientific observation to support the prediction.)**

**Sample C is from the \_\_\_ layer because ....(give at least one scientific observation to support the prediction.)**

- b) **Next**, place 2 double sheets of newspaper on lab station if not already in place. Place one sheet of printer paper in the center of the newspaper.
- c) Proceed with teammates to **first soil sample bucket** and uncover sample, **Be sure to record observations in proper column for each sample!!**
- d) Have one teammate reach deep inside of sample bucket and grasp a representative handful of soil from sample. Place soil, bunched up together, immediately in center of printer paper on station.

### e) Overall Color

Carefully observe the color of the soil sample. Select an appropriate colored pencil, or two or three, and neatly shade in the box for Overall Color under the proper sample number. (*Since this is your draft DT, it is suggested you write the name of the colors. This will allow you to select the correct colors later when you CQC the DT later.*)

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#### **schmied@2010e) Texture:**

Next observe the sample for texture. Each team member put a small sample in their palms. Feel and observe the texture. Discuss, then select and record one of the **entire entries** below in Data Table 1. (Modify entry as necessary.)

- 1. Assorted:** Small sticks, leaves, soil grains, sand, decaying material....
- 2. Fines:** Finer material, decayed sticks, leaves, more soil grains, occasional small stones
- 3. Gritty:** Larger sand and soil grains, small stones
- 4. Very Fine:** Clay-like, very fine grains of sand and minerals.
- 5. Stony:** Sand, gravel and assorted larger and smaller stones

f) **Water holding ability.** Soil with high amounts of organic (once living) material in it has a higher capability to hold moisture. That's because organic material holds water better than sand or minerals.

**Observe the sample carefully.** Use a dual lens hand magnifier. Discuss, then choose and record one of the **entire entries** below in Data Table 1. (Modify entry as needed.)

- 1. Organic** – Large amount of sample is decaying organic material.
- 2. Mixed Organic & Inorganic** – About equal amounts of decaying material and sand or minerals.
- 3. Fine sand with organics** – More sand and minerals than organics

4. **Mostly sand & minerals** – Organic material clearly present, but very low amounts.

5. **Sand & minerals** – No detectable organic material

**g) Clumping Ability** – Soil with strong clumping, or sticking together, ability is highly mineral, clay like, and can have large amounts of decayed organics. Spongy materials often are present in topsoil and the litter layer. **Have one team member grasp and squeeze the sample.** Then open up their hand and show sample to team. Discuss, then select and **record entire entry** below in Data Table 1.

**1. Mineral soil: Clumps and stays together**

**2. Mixed Mineral soil: Clumps but readily falls apart**

**3. Organic soil: Doesn't clump, but spongy**

**4. Stony soil: Doesn't clump, not spongy**

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**h) Smell** – Soils high in organic material have an “Earthy” smell, while soil with more sands and rocks have a more mineral smell. **Have each team member take a good smell of the sample (EXCEPT HIGHLY ASTHMATIC FOLKS.)** Discuss, then select and **record entire entry** below in Data Table 1.

**1. Strong Earthy smell**

**2. Mineral, rocky smell**

**3. No smell at all**

**i) Put the soil sample back in the bucket that it was taken from.** Pick up printer paper and go to bucket and slide the sample back into the bucket.

**j) Get a new printer paper (if needed) and restart at c ) above with the another soil sample until you have completed all 3 samples.**

k. When done with all 3 samples. Sweep, Wipe and Clean up around your lab station. When done, wash your hands.

l. If time remains, GO IMMEDIATELY TO WORK Clean copying your data.

NO OFF TASK BEHAVIOR PLEASE

