

Oregon



Agriculture in the  
Classroom Foundation

**Developed By:**

Chuck Morlan

# Summer Ag Institute Lesson Plans

Title of Lesson: Soil Chips, continued .....Day 2

Academic Subject: Science (Earth)

Theme: Soils vary in color

Grade Level: K

## **CIM/CAM Standards:**

Earth and Space Science: Understand physical properties of the Earth, how those properties change, and the Earth's relationship to other celestial bodies.

Benchmark 1 Standard: Recognize physical differences in Earth materials.

## **Learner Objective: (The student will)**

1. Identify different sources that result in different kinds of soil color.
2. Demonstrate age-appropriate collection of soils samples.
3. Complete a chip set that demonstrates a variety in soil colors, ordering them with respect to value.

## **Vocabulary:**

1. Source
2. "pure sample"

## **Anticipatory Set:**

Yesterday, what was it that you learned about soils? What do you remember I told you we'd do today? Think about this: Where could we go to be sure we could get soils that are different colors? Tell your neighbor. Stand up if you have an idea. (Let learners share.)

## Instructional Outline (Teaching Content)

1. (The teacher should have previously selected a local source for acquiring a variety of soils, and completed any logistical requirements for a field trip.)
2. Introduce students to the site. Do a walk-through.
3. Ask students to keep in mind where darker and lighter soils seem to be. Introduce the word “source” and give examples.
4. Model careful sample collecting. At this time, don’t worry about water content, but do avoid “soup!”
5. Divide learners into small groups, each with a chaperone to collect samples.
6. Meet back at prearranged place when five samples are gathered.

## (Field Trip ends)

Back in the classroom:

---

1. Students create and mount chips using previously learned procedure. Do not discard balance of any soils. Have students label their cards with their baggie number, and their name.
2. Display student work when oral sharing is complete.
3. Take dictation from students that mirrors what they learned, and what they shared in class about the ordering of their soils. Add the text below their project. Use a language experience process.

## Strategies (What to do, explain or have students do)

1. Review expectations, safety.
2. Students describe features they observe. Have them identify some differences in the soils they see as you familiarize them with the selected area.
3. Have individuals state anything they’ve observed, e.g., are darker soils lower, near vegetation, near a stream, up on the top of a hillside, on a slope? If a stream-cut or road-cut is available on-site, do they see layers or patterns? Have students add to your examples of “source” by pointing out on-site examples.
4. Explain that sample collecting is done carefully by scientists. Since we are after different soils colors, each sample must be as “pure” as possible, so as collection is done, samples must not be mixed-up.
5. Group students for maximum instructional gains.
6. Students compare their samples; who has dark samples? Who has lighter samples? Identify where the light/dark samples were collected. State any patterns they hadn’t noticed before.

1. Have learners each arrange their chips in an order they choose based upon their chips’ value. Learners explain how they made a decision to order their chips.
2. Students decide upon the best way to show off their project.
3. Students state concisely (model as needed) a project summary.

## **Closure:**

Ask students what they think they'll be doing with the samples they collected. Have a volunteer or two tell the procedure used in the classroom with the first samples they made into chips. Then ask them to think about this: Why in the world would I be teaching them about soil color? They can tell their thoughts to the class during our next lesson.

## **Materials**

1. Carefully selected field-study site.
2. Re-closable sandwich baggies, 5 per student, labeled with names and numbered 1, 2, 3, 4, 5.
3. Gallon freezer baggie labeled with student name, one per student.
4. (Back in class): 12x18 construction paper, 1 per student
5. Glue or tape for mounting chips
6. Logistics for field-study completed

## **Evaluation:**

The teacher has observed and noted student behavior during the field-study regarding collection procedure, acquisition of a variety of different soils from different sources, and participation. Consult with your adult chaperones if you were not able to circulate and make observations while students were engaged in the activity. Were students able to go to sources which resulted in a different soil type? An examination of the samples should easily tell you if this was achieved.

**This ends Day 2 of the lesson. If you wish, you could save the mounting of the chips/display for Day 3.**