1. **Lesson Author:** Barb Herman

2. **Lesson Title:** What are rocks and soils like?

3. **Grade Level:** 2

4. **Subject Area:** Earth Science

5. **Time allotted for the lesson** (express in number of class meetings and/or number of hours):

<table>
<thead>
<tr>
<th>Day</th>
<th>Meet</th>
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<tbody>
<tr>
<td>1</td>
<td>15-20 minutes</td>
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<tr>
<td>2</td>
<td>15-20 minutes</td>
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6. **Short description of lesson** (write a brief, yet concise description of what occurs in this lesson):

   The students extend and refine knowledge that the surface of the Earth is composed of different types of solid materials that come in all sizes (Cummins, 2008. p.146).

7. **State Curriculum Standards met in this lesson:**

   STATE GOAL 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.
   STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.
   STATE GOAL 13: Understand the relationships among science, technology and society in historical and contemporary contexts.

8. **National Educational Technology Standards for Students (NETS-S) met in this lesson:** Go to [NETS-S standards](#) and select the appropriate grade level profile (K-2, 3-5, 6-8, 9-12), indicators and standards that are being met in this lesson.

1. **Creativity and Innovation**

   Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:
   a. apply existing knowledge to generate new ideas, products, or processes.
   b. create original works as a means of personal or group expression.
   c. use models and simulations to explore complex systems and issues.
   d. identify trends and forecast possibilities.

2. **Communication and Collaboration**
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.

b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.

d. contribute to project teams to produce original works or solve problems.

3. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

a. advocate and practice safe, legal, and responsible use of information and technology.

b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

c. demonstrate personal responsibility for lifelong learning.

d. exhibit leadership for digital citizenship.

4. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

a. understand and use technology systems.

b. select and use applications effectively and productively.

d. transfer current knowledge to learning of new technologies.

9. Instructional Objectives (Each instructional objective [learning outcome] for this lesson):

a) The student identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues.

b) The student knows that scientists and technologists use a variety of tools (e.g., thermometers, magnifiers, rulers, and scales) to obtain information in more detail and to make work easier.

c) The student uses a variety of context clues (for example, illustrations, diagrams, information in the story, titles and readings, sequence) to construct meaning (meaning cues).

d) The student extends and refines knowledge that the surface of the Earth is composed of different types of solid materials that come in all sizes.

e) The student knows selected resources used by people for water, food, and shelter, are limited and necessary for their survival.

f) The student understands the processes of weathering and erosion.

g) The student knows that human beings cause changes in their environment, and these changes can be positive or negative. The student knows ways that human activity affects the environment.

h) The student keeps science records.
i) The student displays solutions to problems by generating, collecting, organizing, and analyzing data using simple graphs and charts.

10. Instructional Procedures

a. Lesson Set (How will you open the lesson to motivate the students? How will you relate this lesson to previous learning & to real life experiences, to explain the importance of the learning to the students? (requires student involvement))

The learners will be allowed to view various rocks in their groups and refer back to their soil from lesson one.
The learners will view a Far Transfer Visual that allows the learner to see, using photos, the.

Engage Ask learners: Where might you find rocks and soil like you have been observing? Accept all logical responses.

Explain Ask groups to use individual science journals to make T-charts title one soil and the other rocks.

Extend Have learners list the characteristics of rocks and soil in correct column then compare the differences (Cummins, 2008. p.146).

Evaluate Use your science journal to write about a rocky, sandy or soil covered place you have visited. Describe the material in detail.

b. Techniques and activities (List the step-by-step activities in sequential order as they occur in the lesson. They clearly identify what is to take place in the lesson. Within the procedures a variety of classroom teaching strategies (methods) are identified. Student centered activities are included as well as guided practice of the learning is included.)

Setting Purpose:
Tell children they are going to read about rocks and soil (Cummins, 2008. p.146). Use the Far Transfer Visual to help students understand boulders, rocks, sand and soil. Have them look at the pictures in the text book. In small groups the students will read the text book, write down unknown words, and complete the worksheet. Have students write new word in Science Journal.

Ask children the following scaffolded questions to assess understanding.

Recall What is a rock? A natural resource that can be almost any size, color, or shape

Compare and Contrast How are rocks and sand alike and different?
Alike: Both are natural resources that are made of minerals; Different: Sand is made of tiny pieces of rock.

Appraise Why are rocks important to us? They are used to make houses and roads. (Cummins, 2008. p.147)

Extended Vocabulary: Explain to children that the word sand can be used as a noun or a verb. In this lesson, sand is a noun meaning tiny pieces of rock. When used as a verb, sand means to make something smooth by rubbing it with sand or sandpaper. (Cummins, 2008. p.147)
Lesson Closure (How will the lesson come to a close? The content should be summarized and related to future lessons, and actively involve the students)

Worksheet activity before and after reading
Review worksheet activity after lesson is complete

11. Adaptations for special learners (How will you adapt the learning/equipment for students with special needs?)

All students are grouped using Kagan sitting recommendations so not to single out different levels of academic ability. Picture flash cards will be used for students with severe mental impairment or limited English language. Far Transfer Visual can be used to reinforce understanding of boulders, rock, sand and soil. Far Transfer Visual uses pictures to reflect the words if student is a low level reader.

Supplemental Activities: Extension and remediation (Extensions are additional activities to expand learning on the lesson content. Remediation activities include methods to re-teach the learning for students who need more instruction/practice.)

Beginning Show children three pictures: two depicting rocks and one showing a living object. Ask children to identify the rocks and explain how they knew they were rocks.

Intermediate Ask children to list two places where they would expect to find rocks. Have them tell why they would expect to find rocks in those places.

Advanced Have children write two or three sentences describing one of the rocks they examined in this lesson. Suggest that they include at least two facts, such as size and color. (Cummins, 2008. p.147)

Assessment/Evaluation (How will you measure the student’s success? Formally or informally? Formal evaluation of student work requires that a grade is taken while informal might be monitoring of work, or class discussion. This section should contain a description of the assessment process, the criteria for achievement, and performance levels. The criteria should directly align to objectives and instruction. Describe your plan for providing feedback to your students.):

Vocabulary Journal Rubric – Individual Grade
Review worksheet activity after lesson is complete

Student Products (What artifact(s) or products will result from the lesson? (such as a report, newsletter, diagram, slideshow, drawing, etc.)

Science journal T-chart activity, vocabulary and reading notes

* Note for students: This lesson plan template is adapted from the model that is recommended in the book Preparing to Use Technology: A Practical Guide for Technology Integration.