Edtech 506 Lesson Plan Template*

1. Lesson Author: Barb Herman

2. Lesson Title: How does Earth change?

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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15-20 minutes</td>
</tr>
<tr>
<td>2</td>
<td>15-20 minutes</td>
</tr>
<tr>
<td></td>
<td>Experiment Daily for 15 to 30 days</td>
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</table>

6. Short description of lesson (write a brief, yet concise description of what occurs in this lesson):

The student understands the processes of weathering and erosion (Cummins, 2008. p.152). The students will continue to use the scientific method in the plant experiment.

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))

“Place a sugar cube or piece of hard candy in water. Have children see how long it takes the piece of candy to dissolve in the water. Tell children that the candy dissolving in water is similar to the process by which water in nature wears away, or weathers, rock over time. If possible, show children smooth, rounded weathered rocks (Cummins, 2008. p.152)."

“Access Prior Knowledge Ask children to remember a time when they washed dirt or mud off their hands, feet, or shoes. Ask: Where did the soil go? Discuss the fact that water can wash away soil. Point out that water can wash away soil on the surface of Earth (Cummins, 2008. p.152).”

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.)

Set Purpose:
Tell children they are going to read about some changes that happen on the surface of Earth (Cummins, 2008. p.152). To help them set a purpose for reading (Cummins, 2008. p.152), the children view the Cognitive Motivational Visual to develop back ground knowledge before reading.

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 words in Science Journal.

Use the Cognitive Motivational Visual prompt them look for ways that people and animals might influence both processes. In their groups they can use the Internet, leveled readers and text book to find examples.

After reading the children will explore the Visualizing Facts Visual to further knowledge acquisition about weather and erosion.

Ask children the following scaffolded questions to assess understanding.
Recall What is weathering? Weathering is the breaking apart and changing of rocks (Cummins, 2008. p.153).
Assess Which do you think would be changed more quickly by erosion, sand or rock? Why? Possible answer: Sand, because the small pieces could easily be moved by wind or water (Cummins, 2008. p.153).

Extended Vocabulary: Tell children that the word weathering is related to the word weather. Write both words on the board. Explain that weather refers to conditions of the air such as temperature, air pressure, winds, humidity, and precipitation. Weathering is the action of the weather conditions in changing the color, texture, composition, or form of rocks. Refer to the Visualizing Facts Visual to further develop the learners understanding of weather and weathering (Cummins, 2008. p.153).

c. 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
Science notes contain new words with definitions and three ways that people and animals change the earth.

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. Cognitive Motivational Visual has photos that will assist the learners in developing various images of weathering and erosion. The Visualizing Facts Visual uses clip art, videos, and audio so learners can learn from various medias.

12. 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, Intermediate and Advanced Develop flash cards that show mechanical weathering and erosion. The children can use the Internet to locate pictures showing different weathering and erosion images. The students will explain the forms of weathering and/or erosion each image represents.

Have a variety of rocks for the students to identify the various forms of weathering that the rock as under gone.

13. 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
14. **Student Products** (What artifact(s) or products will result from the lesson? (such as a report, newsletter, diagram, slideshow, drawing, etc.))

   Science journal write up on reading activity and note taking.

*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*. Adopted from: