

Lesson Title: Nature's Way of Recycling Rocks

Unit: One

Grade Level: 8th

Estimated time requirement:8 class periods (50 minutes each in length)

Summary (25-50 words): This lesson will introduce students to the rock cycle and the three types of rocks in and on our Earth. Students gain a better understanding of the three types of rocks by viewing self paced interactive websites on rocks. Students use technology to create presentations to be shown in front of class mates and parents/guardians.

Objectives:

- To show an understanding of the rock cycle.
- To differentiate between the stages of the rock cycle.
- To summarize the steps of the rock cycle.
- To be able to classify rocks by their characteristics.
- To examine and classify the different rock samples collected.
- To document rocks as to type, mass, density, and texture.
- To produce a chart listing all the information collected during the lab.
- Students create presentations using any of the technology available to them.
- Students critique each others presentations and offer suggestions for improvement.
- Students complete the Rock and Rock Cycle Exam administered online.
- Students create an evaluation form using word processing software.

Content Standards: Texas State Standards (TEKS)

§ 126.12. Technology Applications (Computer Literacy), Grades 6-8

(C) (1) Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student is expected to: **(F)** perform basic software application functions including but not limited to, opening an application program and creating, modifying, printing, and saving documents.

(C) (2) Foundations. The student uses data input skills appropriate to the task. The student is expected to: **(A)** demonstrate proficiency in the use of a variety of input devices such as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/disc, modem, CD-ROM, or joystick:

(C) (4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to: **(A)** use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software;

(C) (7) Solving problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems. The student is expected to: **(A)** plan, create, and edit documents created with a word processor using readable fonts, alignment, page set up, and ruler settings; and **(D)** demonstrate proficiency in the use of multimedia authoring programs by creating linear or non-linear audio, video, and graphics.

(C) (10) Communication. The student formats digital information for appropriate and effective communication. The student is expected to: **(A)** use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports.

(C) (11) Communication. The student delivers the product electronically in a variety of media, with appropriate supervision. The student is expected to: **(A)** publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video; and **(B)** design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics.

§ TEKS 8th Grade Science:

(8.12) The student knows that cycles exist in Earth systems.

(A) The student is expected to analyze and predict the sequence of events in the lunar and rock cycles.

(8.1) Scientific processes. The student conducts field and laboratory investigations using safe, environmentally appropriate and ethical practices. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations.

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(8.4) Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:

(A) collect, record, and analyze information using tools including beakers, Petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, water test kits, and timing devices, and

(B) extrapolate from collected information to make predictions.

Assessment:

- Students complete the Different Types of Rocks worksheet while learning about the rock cycle and types of rocks and submit it for evaluation at the end of the unit.
- Students collect representative samples of each type of rock and list them on a data table to be evaluated.
- Students create and complete a data table to be used in the rock identification lab that will be evaluated.
- Students create their own evaluation rubric to be used in evaluating presentations.
- Students are required to complete the online Rocks exam and submit it for evaluation.
- A teacher generated rubric assessment will be available for special education students.

Materials:

- See materials listed in unit.

Resources:

- See materials listed in unit.

Prior Knowledge/Skills:

- Students must have a prior knowledge of computers, Internet, and presentation software.
- Students have prior knowledge in use of various types of lab equipment.
- Students have prior knowledge of Ti-84 graphing calculators.

Procedures:

- Outlined in unit.

Modifications:

- **Special Education:** A peer or teacher could help the student use the Internet sites, and completing the unit. Teacher made worksheets could be available for those who can't create their own. These students would also be allowed to use teacher generated rubric assessment.
- **Gifted:** These students could be required to make a brochure in Microsoft Publisher and a Power Point presentation using information obtained from completing the unit.

Technology Infusion:

- Use of Power Point, Excel, and adobe acrobat software.
- Digital camera
- Use of Search Engines on internet.
- Document camera
- Computer and projector
- Video Conferencing equipment
- Ti-84 calculators
- Various types of lab equipment including triple beam balances and digital scales.

Cultural Connections:

Students could be required to research how different cultures used rocks to aid in everyday life.
(Example: arrow heads made from flint.)

Family Connection:

- Students could ask parents to help with their rock collecting assignment.
- Parents will be invited to view and evaluate class presentations.