

Unit Activities: Earth’s History

Name:

Unit Objectives

- Gain an appreciation for the timeline of events in earth's history.
- Use the principles of relative dating to reconstruct the geologic history of a region.
- Retrieve and interpret information about the earth’s history from appropriate resources.
- Recognize the characteristics of an index fossil.
- Construct a complete geologic column from several widely spaced outcrops.
- Understand how the variety of life on earth has changed over time.
- Determine the age of a rock from radioactive decay data.

Notes:

- Principles of Relative Dating
- Rock Correlation
- Absolute Dating

Base Assignments

(underlined assignments are mandatory))

- Assignment 1: Due / / -----
1. Worksheet: Earth’s History: (3 points)
- Assignment 2: Due / / -----
- Choose 3 points
2. Book Work: (3 points) Read or listen to Relative-Age Dating of Rocks on Pp. 557-561 and complete study guide 21-2.
3. Video: Historical Geology: A Glimpse of the Earth's Past (3 points) Watch the video and complete the accompanying worksheet. The video can be accessed online at www.unitedstreaming.org. Type in the username newpaltzhigh and the password streaming and type in the name of the video in the search field to locate it.
4. Make a Game: (3) points Create a game based on a mad dash through geologic history. You may create a board, trivia, or card game. Players should move through geologic time. Topics should include Periods of Geologic Time, Diversity and Evolution of Life, and Fossils and Extinctions. You must include color and a brief description of the rules. You may base this on a familiar game. This may be constructed by one or two people (extra credit may be given based on quality of work.)
5. Web Site Activities: (3 points each) Go to the Earth’s History Unit on the class web site and follow any of the following links: What Stories do Rocks Tell (ES2903) or How Has Life Changed Over Geologic Time (ES3002). Be sure to answer the questions on the accompanying worksheet..
- Assignment 3: Due / / -----
6. Lab: Geologic Profiles: (5 points- lab)
- Assignment 4: Due / / -----
- Choose 3 points
7. Flash Cards: (3 points) Create flash cards using the following words or terms- Principle of Superposition, Principle of Cross-Cutting Relationships, Principle of Original Horizontality, Unconformity, Half Life, Radioactivity, Rock Correlation, Index Fossil, Evolution
8. Book Work: (3 points) Read or listen to Absolute-Age Dating of Rocks on Pp. 562-565 and complete study guide 21-3.
9. Internet Lab: Virtual Dating Isochron: (3 points-lab) Go to the Earth’s History Unit on the class web site and follow the Virtual Dating link. Complete the activity online and print out the certificate once it has been completed.
- Assignment 5: Due / / -----
10. Lab: Stratigraphy: (5 points- lab)
- Assignment 5: Due / / -----
11. Lab: Radioactive Dating: (5 points- lab)

-----Extra Credit Assignments: Due / / -----

- Geologic Time Scale: (Extra Credit) Construct a geologic time scale using adding machine tape, a picture of a clock, football field or other object that can be given a scale. You must include at least 15 major events in geologic history. Your diagram should be neat and should include drawings or pictures. You must include your calculations.
- Stratigraphic Column: (Extra Credit) Create a diagram that shows a geologic cross section of the Catskills. Be sure to label each layer with how old it is (or the name of the Period it is from) and the name of the rock from which it is made. You must also draw the layers with their correct rock symbols. Finally include a brief 2 paragraph description of the geologic history of the Catskills based on the diagram