

EARTH SCIENCE CONTRACTS

Earth science projects of varying difficulty
for individuals and groups

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This student contract package is written with teacher flexibility in mind. The package contains sufficient activities for seven one or two week “units,” each of which has a wide selection of tasks at various ability levels.

While writing **EARTH SCIENCE CONTRACTS**, the author incorporated various learning styles and theories, including Howard Gardner’s Theory of Multiple Intelligences and Bloom’s Taxonomy of the Cognitive Domain. (See pages 3-7 immediately following this Overview.) Consequently, when students work on their contracts dealing with the fascinating world of geology, they use different learning styles while completing varying assignments requiring higher levels of thinking.

This unit is divided into four sections based on fields of study within the science of geology. As students do their unit contracts, they must create at least one product per week. Each week each student focuses his/her energy to create one of the following kinds of products.

w = written

o = oral

v = visual

k = kinesthetic (moving/making)

m = musical

a = art

(Of course, creating certain products involves more than one learning or presentation style, but the student knows that the focus is mainly on a **visual** or **written** product during a certain week.)

The unit proceeds as follows:

- The amount of time set aside for the unit is explained.
- The necessity of working to create each differing kind of product is emphasized.
- The student fills out a contract to complete certain contracts within the time allowed.
- A parent also signs the above contract.
- The students work alone or within activity groups.
- The contracts are completed with teacher help and displayed or presented.
- The contracts’ products are evaluated.
- If possible, some kind of culminating activity such as an open house is held.

Parent/child planning can really help the student. And of course, this circumstance increases the home-school communication.



The projects students have created make excellent open house material.

Rocks and Minerals

Activity Cluster—Weeks 1-2

- To help you succeed in EARTH SCIENCE CONTRACTS, *study all the suggestions found in the early pages of your Student Guide.*
- While examining each activity below, note how each is coded for **learning style** (one of these letters: w ... 0 v ... k ... m ... a ...) and a **difficulty factor** (a number from 1 to 4). If the two letters **CL** appear, they indicate that you are to work with one or more persons in a **Cooperative Learning** activity.
- Remember that during the unit's seven weeks *you must use all of the six learning styles at least once.*

Select two:

1. Read to find out about **birthstones**. Is there more than one for each month? Why? What is yours? Select five friends or family members and find out what their birthstones are. Tell the class what you learned. (O-1)
2. Write a **letter** to each of five national parks or monuments asking for information relating to the geology at that location. Make a bulletin board display using maps, booklets, etc. (K/W-2) **CL**
3. Interview a **geologist** and write a paper about his/her **career**. Make a list of 12–15 important questions (i.e., What kind of education is needed? What businesses employ geologists? What types of work do they do?). Turn in your report and notes. (W-3) **CL**



POINTS and EVALUATION

Value Points

When you examine the contract options on each week's handout, notice the numerical value (1 to 4) that appears at the end of the contract description. This number represents two things: a *difficulty factor* (how demanding this project's work will be); and the number of **value points** you can earn on the project. This difficulty factor reflects the following considerations:

- the **complexity of materials or resources** you must find, use, and understand
- the **amount of work** required to complete the project successfully
- the **level of Bloom's Taxonomy** the project requires ... (Your teacher will explain Bloom's six increasingly difficult levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.)
- whether **team work** is involved ... (When more than one person works on an activity, the product should be even better because there is more effort put into it. Also, additional learning often takes place when individuals interact with one another.)

Evaluation

Each activity will be graded. You will be expected to present your material in such a way that you clearly demonstrate how much work you did and what you learned.

Here is how you can earn an **A**, a **B**, or a **C** for your work in EARTH SCIENCE CONTRACTS:

- You will earn a **C** grade for a) successfully completing one activity in each of the seven weeks and for b) earning a minimum of 18 total points during the seven weeks.
- You will earn a **B** grade for a) successfully completing one activity in each of the seven weeks **plus** one additional activity and for b) earning a minimum of 22 total points during the seven weeks.
- You will earn an **A** grade for a) successfully completing one activity in each of the seven weeks **plus** two additional activities and for b) earning a minimum of 26 total points during the seven weeks.

COMPLETING THE ACTIVITIES - 1

The remainder of page 2 plus pages 3 through 5 give you many suggestions on how to prepare and present your contracts. Following these recommendations will help you complete work you will be proud to show others.

Oral projects

1. These projects should be three to five minutes in length.
2. Decide upon what information you would like to present.
3. Decide upon a clear purpose. Write it in one sentence. (See #4 under Plays/Skits/Newscasts on page 3 for an example.)
4. Start your speech dramatically with an **interest catcher**: a question, some statistics, a brief story, or something visual that will capture everyone's eyes.
5. If possible, practice your speech at home in front of a mirror. Imagine that you are looking classmates *right in the eye*. And of course, try to be *enthusiastic*.
6. Be sure to schedule the presentation time with your teacher. Oral presentations are usually better if you use some kind of prop or visual aid.
7. You may wish to help your teacher prepare to videotape or audiotape the presentation if you feel it may be good enough to present at the open house.

Using something visual really helps to hold listeners' attention. You might wish to put something on poster board, the chalkboard, or an easel.

