

## Cosmic Chemistry: Understanding Elements

## Element Research

### TEACHER GUIDE

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#### BACKGROUND INFORMATION

In this lesson students will use the Internet as well as other sources to locate information about one element. This is a good activity to use at the beginning of the year to place students into groups. Students will decide which element group their team will research. Once this is done individuals will decide which element within the group they will research. Most of the research will be done independently. The final product will be a poster of the information found on the element. Teachers may display these posters on the wall in the arrangement of the modern periodic table, or let students determine an arrangement based on the elements researched in class.

#### NATIONAL SCIENCE STANDARDS ADDRESSED

##### Grades 5-8

###### [Science as Inquiry](#)

Understandings about scientific inquiry

###### [Physical Science](#)

Properties and changes in matter

##### Grades 9-12

###### [Physical Science](#)

Structures and properties of matter

###### [Science as Inquiry](#)

Understandings about scientific inquiry

###### [Science in Personal and Social Perspective:](#)

Natural resources



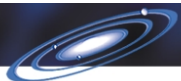
#### MATERIALS

For each student:

- Computer with Internet capability
- Student Activity, "[Element Research](#)"
- 11 x 14 poster paper
- Colored pencils or markers
- Periodic table of the elements

#### PROCEDURE

1. Assign students into groups. If you would like each group in the periodic table covered, then there should be no more than eight groups per class. Decide if each class will be able to choose any element or if you want all elements covered in all classes. (If you do the latter, the students you have at the end of the day will be very limited as to what elements they can choose.)



2. When students are in their assigned student groups, they should decide the top three element groups or families that they would like to research. List the groups on the chalkboard and determine which student group will research which element group. One method might be to draw numbers from a hat if there are conflicts. For some of the larger element groups, you might assign more than one student group. However, only one student will research each element.
3. Students will then choose the element that they will be responsible for researching. Only one person should research each element.
4. Working at the computers, students should follow the directions on their student sheets to collect information about their element. Once students get done with part 14, they should use links or other sources to find more information concentrating on how the element is used as a natural resource. Students may share information with others in their group if there is time.
5. During the class period, or as homework, students should create a poster of the information they found on their element. The poster should contain all of the information that was found on the computer and any additional information. The poster should represent the information in a graphic format. These may be generated on the computer using an illustration program.
6. Once the posters are completed, they can be displayed. If you decided to make sure all elements were researched, then one giant periodic table can be displayed in modern form on a wall. If each class chose their own elements (therefore duplicate elements with all classes), then ask the students to decide how best to organize the elements in their class. Ask them what the periodic table would look like if these were the only known elements. Would there be gaps, and so on?

**Alternate Strategies Tip**

Student groups may create a computerized slide show focusing on the element that each student researched to be presented to the whole class.

**Alternate Strategies Tip**

Students who have completed this activity enjoyed the comics found on the Web Elements Web site. Some asked if they could create element comics on their own. The teacher asked for students to create a six-panel comic strip of their element that tells a story and contains the properties of the element. Students created a cover sheet for their final copy.