**Periodic Table of the Elements Activity—Instructor’s Notes**

*Earth Materials—Prof. Laura Wetzel*

*Homework:*

Give each student one, or more, of the pre-formatted cards with specified elements.

92 elements = 23 pages with 4 elements on each page.

Distribute these evenly among the students—some can do extras or I can assign more than one student to do some of the elements.

Collect the homework, and then make as many copies of the cards as needed, with a maximum of four total, one set for each lab table. Cut up the pages after making copies.

Optional: Use the Period Table quick study cards for after they have completed the exercise.

Optional: Use a few of the Ward’s cards to look up the mineral info.

*Space Needed:*

Each 4 x 8 foot lab table is perfect for the 92 elements:

18 cards across x 4.3” per card = 77.4” = 6.45’

9 cards down x 5.5” per card = 49.5” = 4.125’ (While this is a little longer than 4 ft., the last row is just the 3 actinide elements.)

*Homework Below:*

If you do not use pre-formatted cards for the elements, then students can simply use index cards and hand write multiple copies as needed.

**Properties of the Elements—Homework**

*Earth Materials—Prof. Laura Wetzel*

Create an index card for each element you have been assigned. (The list is on the next page.) Include the following information prominently displayed on one side of the index card:

Element name

Element abbreviation

Atomic number

Atomic mass

Electron configuration (e.g., Carbon: 1s22s22p2)

Element classification:

alkali metal, alkaline earth metal, transition metal, post-transition metal, lanthanide, actinide, metalloid, halogen, noble gas, other non-metal

Common chemical properties

On the other side of the index card indicate the following information:

Your name

Element name

Element abbreviation

Major uses for the element

Names and chemical formulae of four minerals containing the element OR an explanation indicating why there are not six minerals containing the element (e.g., element is not naturally occurring on Earth, element has a short half-life, element is liquid at room temperature).

Arrange all information neatly and consistently in the same format on each card. Organize the information in a manner that makes sense to you, which means that your cards may not be organized in the same way as those created by others.

On one additional index card indicate your name, the names of the elements you were responsible for, and the sources of your information.

*These cards will be used in an exercise in class, so it is crucial that you complete them by the deadline.*

**NOTE: Because we have \_\_\_\_\_\_\_ students in class, we need \_\_\_\_\_\_\_\_ copies of each element card. In this way, we will be able to spread out people in multiple groups.** Simply make your original cards and then write the necessary number of duplicates to bring to class.

*Last modified by LRW on February 6, 2013.*

**Elements (1-92)**

To randomly assign elements, we will go around the room, with each person receiving an element in each round. Absent individuals will also be assigned elements.

Actinium  
Aluminum   
Antimony   
Argon  
Arsenic   
Astatine   
Barium   
Beryllium   
Bismuth   
Boron   
Bromine   
Cadmium   
Calcium   
Carbon   
Cerium   
Cesium  
Chlorine  
Chromium   
Cobalt   
Copper   
Dysprosium  
Erbium  
Europium   
Fluorine   
Francium   
Gadolinium   
Gallium   
Germanium   
Gold   
Hafnium   
Helium

Holmium  
Hydrogen  
Indium   
Iodine  
Iridium   
Iron  
Krypton   
Lanthanum   
Lead   
Lithium   
Lutetium   
Magnesium   
Manganese  
Mercury   
Molybdenum   
Neodymium   
Neon   
Nickel   
Niobium   
Nitrogen   
Osmium   
Oxygen  
Palladium   
Phosphorus   
Platinum   
Polonium   
Potassium   
Praseodymium  
Promethium   
Protactinium   
Radium   
Radon   
Rhenium   
Rhodium   
Rubidium   
Ruthenium   
Samarium   
Scandium   
Selenium   
Silicon   
Silver   
Sodium  
Strontium   
Sulfur   
Tantalum   
Technetium   
Tellurium   
Terbium   
Thallium   
Thorium   
Thulium   
Tin  
Titanium   
Tungsten   
Uranium   
Vanadium   
Xenon   
Ytterbium   
Yttrium   
Zinc   
Zirconium

**Notes:**

References

Elements can be sorted in various ways:

http://www.science.co.il/PTelements.asp

Basic history of Periodic Table:

Student paper: http://serendip.brynmawr.edu/exchange/node/158

Sortable table:

http://en.wikipedia.org/wiki/List\_of\_elements

Other Periodic Table Sources:

http://www.lenntech.com/periodic/elements/

http://www.webelements.com/

chemicalelements.com

http://education.jlab.org/itselemental/

http://periodictable.com/ (This is the poster I have of all the elements in their pure state. The website is clickable with embedded info.)

Provides geological information for each element in the Periodic Table:

http://www.webelements.com/geology.html

Chemistry Info:

http://chemistry.about.com/

http://chemistry.about.com/od/famouschemists/p/mendeleevbio.htm

Mineral Information:

http://www.galleries.com/minerals/by\_class.htm

**Misc Info:**

http://chemistry.about.com/

## [This Day in Science History - February 8](http://chemistry.about.com/od/februaryinscience/tp/february8history.htm) - Dmitri Mendeleev

February 8th is Dmitri Mendeleev's birthday. Most people associate Mendeleev the first [accepted periodic table](http://chemistry.about.com/od/periodictableelements/f/who-invented-the-periodic-table.htm) of the elements. His table ordered the elements by increasing atomic weight where columns of elements had similar chemical properties and is the immediate forerunner of the modern [periodic table](http://chemistry.about.com/library/blperiodictable.htm).  
  
Mendeleev was also the man responsible for making Russia "metric". As Director of Russia's Bureau of Weights and Measures, he was instrumental in bringing the metric system to Russia.  
  
In his personal life, he was famous for his "grooming". Mendeleev was widely known for his long hair and wild beard. He would only cut his hair or trim his beard once a year. He had one minor scandal where he was labeled a bigamist for a legal technicality for not waiting the required seven years after a divorce before marrying his second wife.