

# Unit 4: Atoms/The Periodic Table

## Reading Assignments

No textbook reading assignments

## Supplementary Reading

- 9 “Bang, Sparkle, Burst and Boom”,  
*Science News For Kids* (29 Jun 2005) Due: \_\_\_\_\_

## Homework/Activities

- 9 **Activity 1: Beginning the Language** Due: \_\_\_\_\_  
Think: *Separate Handout*  
Activity: *Separate Handout*  
Read: *Separate Handout*  
Apply: *Separate Handout*
- 9 Worksheet: Protons, neutrons, and electrons Due: \_\_\_\_\_
- 9 **Activity 2: Learning the Alphabet** Due: \_\_\_\_\_  
Think: *Separate Handout*  
Activity: *Separate Handout*  
Read: *Separate Handout*  
Apply: *Separate Handout*

## Concepts/Topics

- 9 Atomic structure: nucleus, protons, electrons, neutrons
- 9 Subatomic particles: charge, mass, location
- 9 Atomic symbol, atomic #, atomic mass
- 9 Model of the atom, Rutherford’s experiment
- 9 Isotopes, ions (including notation)
- 9 Periods, Families/Groups
- 9 Metals, non-metals, metalloids
- 9 Noble gases, halogens, alkali metals, alkaline earth metals
- 9 Trends: Atomic #, mass #, atomic radius, electronegativity

## Target Outline

### *Beginning the Language*

- ...identify the parts of an atom and give their mass, charge and location
- ...draw an accurate (correct particle #s and locations) diagram of an atom
- ...identify atomic symbol, atomic #, and atomic mass on the periodic table
- ...calculate # of protons, neutrons, and electrons from the periodic table
- ...know what an isotope is and how that affects the numbers of the subatomic particles
- ...know what an ion is and how that affects the numbers of the subatomic particles
- ...be able to give the correct symbolic notation for a given ion or isotope.

### *Learning the Alphabet*

- ...be able to explain the arrangement of the periodic table in periods (rows) and families/groups (columns)
- ...be able to differentiate between metals, non-metals, and metalloids on the periodic table
- ...know that families of elements share traits or characteristics
- ...be able to name four important families (noble gases, halogens, alkali metals, alkaline earth metals) and show their places in the periodic table
- ...be able to state the trends (and reasons for the trends) on the periodic table for the following properties: atomic number, atomic mass, electronegativity, atomic radius

## Web Resources

- Protons, Neutrons, & Electrons  
[science.widener.edu/svb/tutorial/protonscsn7.html](http://science.widener.edu/svb/tutorial/protonscsn7.html)
- Protons, Neutrons, & Electrons Game  
[education.jlab.org/elementmath/index.html](http://education.jlab.org/elementmath/index.html)
- Inside an Atom  
[web.buddyproject.org/web017/web017/ae.html](http://web.buddyproject.org/web017/web017/ae.html)
- Isotopes  
[www.chem4kids.com/files/atom\\_isotopes.html](http://www.chem4kids.com/files/atom_isotopes.html)
- Periodic Table  
[web.buddyproject.org/web017/web017/pertab.html](http://web.buddyproject.org/web017/web017/pertab.html)
- Metals, Non-metals, Metalloids  
[web.buddyproject.org/web017/web017/metals.html](http://web.buddyproject.org/web017/web017/metals.html)