

The Periodic Table and Its Trends

“How wonderful that we have met with a paradox, now we have some hope of making progress.” –Neils Bohr

Periodic Table
Atomic Properties of the Elements

FORMAT

The test will be over the periodic table, periodic trends and review. Many of the questions will require critical thinking on your part. So think! Study and you will do well.

VOCABULARY

metals	valence	alkali metals	electron affinity	electronegativity
metalloids	cation	noble gases	periods/series	alkaline earth metals
halogens	anion	chalcogens	families/groups	ionization energy
pnictogen	ion	atomic radii	atomic number	transition elements

KNOW THESE MEN

Dmitri Mendeleev

Henry Moseley

Julius Lothar Meyer

KNOW

- the periodic law
- the periodic table's trends
- electronegativity
- ionization energy
- atomic radius

BE ABLE TO

- determine greater electronegativity
- determine greater ionization energies
- determine greater atomic sizes
- label families and areas of the periodic table

REVIEW

- draw Lewis dot symbols
- determine atomic valence and ionic charge
- write an element's electron configuration
- write out an element's orbital notation
- cations and anions

PRACTICE

DIRECTIONS: Using the periodic table, **(1)** classify each of the following as a representative element, transition metal, or inner transition metal. **(2)** If it is a representative element, tell whether it is a metal, nonmetal or semimetal, and **(3)** give the family name.

gold	radon	uranium	selenium	bromine
lead	radium	hydrogen	francium	strontium

DIRECTIONS: Circle the atom in each of the following pairs with the larger electronegativity.

a. O, F b. S, Cl c. Na, Cl d. F, Br e. I, O

DIRECTIONS: List the following elements according to increasing first ionization energy:

Cs, Ga, Br, Sr, As, Kr

DIRECTIONS: List the following elements according to increasing electronegativity:

N, As, Rb, Sn, F, Na, Ne

DIRECTIONS: Box the smaller atom or ion in each of the following pairs?

a. Mg, Mg⁺ b. Na, Mg c. Cl, Br d. Na⁺, F⁻

WRITE the periodic law.

WRITE the octet rule.

**"It's hard to detect good luck - it looks so much like something you've earned."
-- Fred A. Clark**