


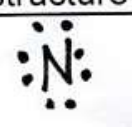

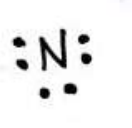


This week's quiz is one day early: Thursday

## Purpose:

How do we use symbols to draw stable atoms?

## WARMUP :

Copy & write the symbol for each:

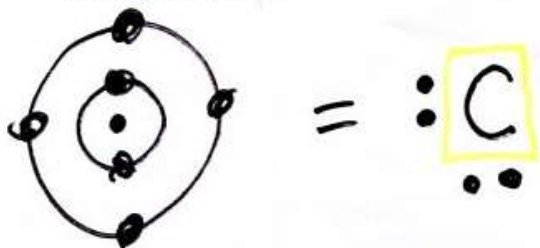
particles	bohr drawing	Lewis Dot structure	octet rule satisfied?
7p 10 e			yes
7p 8e			NO
8p 7 e			NO

1. Orbits are a way of showing the energy level of an electron. They don't show the true shape that the e- moves in.

2. Valence orbit is outermost orbit of an atom
  
3. How to draw the Bohr Structure for the first twenty elements:
  - a) For the protons and neutrons, draw the nucleus.
  - b) For the electrons, fill inner orbits with e- before going to a new orbit.
  - c) Orbits are full:
    - 1<sup>st</sup> orbit holds up to 2 e-
    - 2<sup>nd</sup> orbit holds up to 8e-
    - 3<sup>rd</sup> orbit holds up to 8 e-

4. How to draw a Lewis dot structure for any element

- write the letter symbol for the element.
- draw electrons as dots around an imaginary square.



5. Atoms are ~~cool~~ **stable** when their valence orbit is full.

Unstable	Stable
	unstable
	stable
	unstable

The octet/duet rule:

Atoms with 8 valence  $e^-$  are stable (except small **ATOMS** with one orbit are stable with 2 valence  $e^-$ )

Why the trends?

Chemistry: <http://genest.weebly.com>

Stop in for help every day at lunch and Tues. & Thurs. after school!



Name \_\_\_\_\_

Period \_\_\_\_\_

Definitions.

Define the following terms:

a. Period

THE SIDEWAYS, ROWS

b. Group

THE VERTICAL COLUMNS

c. Atomic radius

HALF OF THE DISTANCE BETWEEN TWO ATOM NUCLEI THAT ARE IN A MOLECULE

d. Electronegativity

The attraction of an element for a shared electron

e. Ionization Energy

The energy needed to remove an electron

Questions.

You can answer these from your notes today or, if you have a Smart Phone, the textbook pictures on the top of pp. 401, 403, & 406. You can view the textbook pages at our class website: [genest.weebly.com](http://genest.weebly.com) using any Internet device.

1. What happens to the atomic radius between elements two and three?

increases

2. What happens to the atomic radius between elements eleven and eighteen?

decreases

3. Which group on the periodic table has the highest ionization energy?

the noble gases

4. Which group has the periodic table has lowest ionization energy?

the first group  
alkali metals

5. What happens to the ionization energy between elements ten and eleven?

Decreases

6. What happens to the ionization energy between elements three and ten?

INCREASES

7. What happens to the ionization energy between elements four and five?

goes down

8. What happens to the ionization energy between elements seven and eight?

goes down

10. Summarize the overall trend observed for atomic radius for elements in a period

Decreases as you go right

11. Summarize the overall trend observed for atomic radius for elements in a group

increases as you go down

12. Summarize the overall trend observed for electronegativity for elements in a period

increases as you go right

13. Summarize the overall trend observed for electronegativity for elements in a group

decreases

14. For which of these properties does lithium have a larger value than potassium?

a. first ionization energy

b. atomic radius

c. electronegativity

18. arrange these elements in order of decreasing atomic size: sulfur, chlorine, aluminum, and sodium.

Na

Al

S

Cl

19. Does your arrangement in the previous question demonstrate a periodic trend or a group trend?

PERIOD TREND

20. Which element in each pair has the larger ionization energy?

a. Li or K

b. phosphorous or oxygen

21. Which element in each pair has a smaller atomic radius?

a. Li or K

b. phosphorous or oxygen