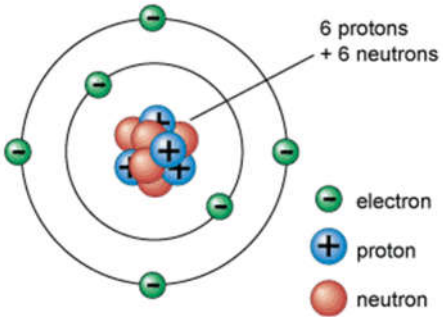
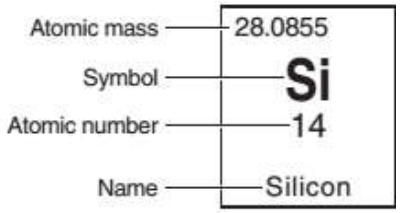
Biology
Ms. Ye

Name _____
Date _____ Block _____

**Review: Bohr Model of the Atom**

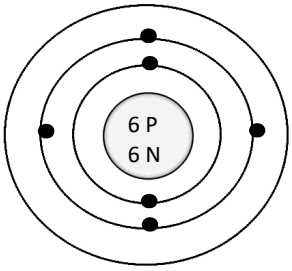
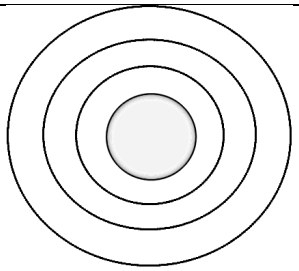
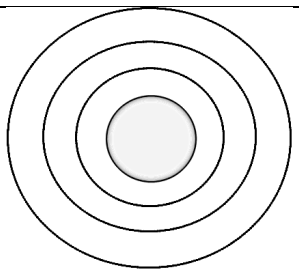


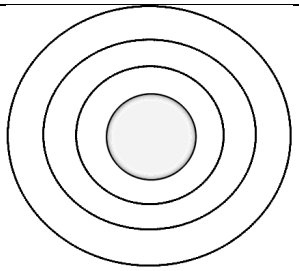
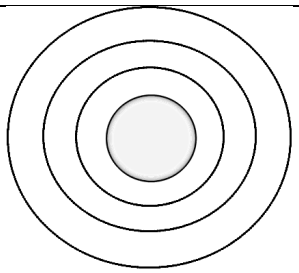
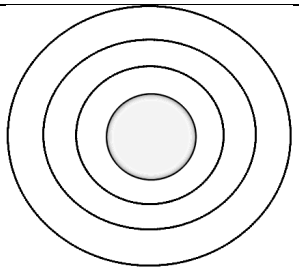
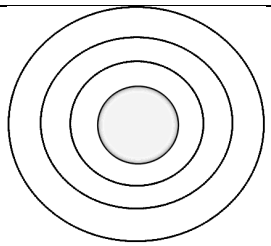
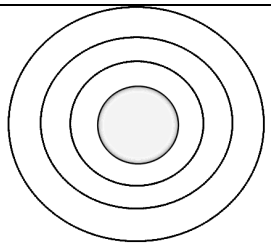

- Electrons are shown in concentric **shells** or **energy levels** around the nucleus
  - The first shell can hold up to _____
  - The second shell can hold up to_____
  - The third shell can hold up to _____
  - The fourth shell can hold up to _____
  - When filling electrons, you fill the _____ _____ first
  - **Valence electrons**= _____




- **<u>Atomic number</u> = <u># of protons</u>**
- **<u>Mass number</u> = <u># protons</u> + <u># neutrons</u>**
- **For <u>*neutral*</u> atoms, <u># electrons</u> = <u># protons</u>**

**Bohr Diagrams Practice: You may round to the nearest whole number for the atomic mass**

| Element | Subatomic Particles | Bohr Diagram | # Valence Electrons |
|---|---|---|---|
| Carbon<br><br>$^{12}_{6}C$ | # protons=6<br><br># neutrons=6<br><br># electrons=6 |  | 4 |
| Hydrogen<br><br>H | # protons=<br><br># neutrons=<br><br># electrons= |  | |
| N | # protons=<br><br># neutrons=<br><br># electrons= |  | |

| Element | Subatomic Particles | Bohr Diagram | # Valence Electrons |
|---|---|---|---|
| O | # protons=<br># neutrons=<br># electrons= |  | |
| P | # protons=<br># neutrons=<br># electrons= |  | |
| S | # protons=<br># neutrons=<br># electrons= |  | |
| Ne | # protons=<br># neutrons=<br># electrons= |  | |
| **$Na^{1+}$ | # protons=<br># neutrons=<br># electrons= |  | |

*Look at the atomic structure for Neon compared to the other elements. What is different about its outermost shell?

**What happens to the # of valence electrons when an atom becomes an ion?

**Valence Electrons**

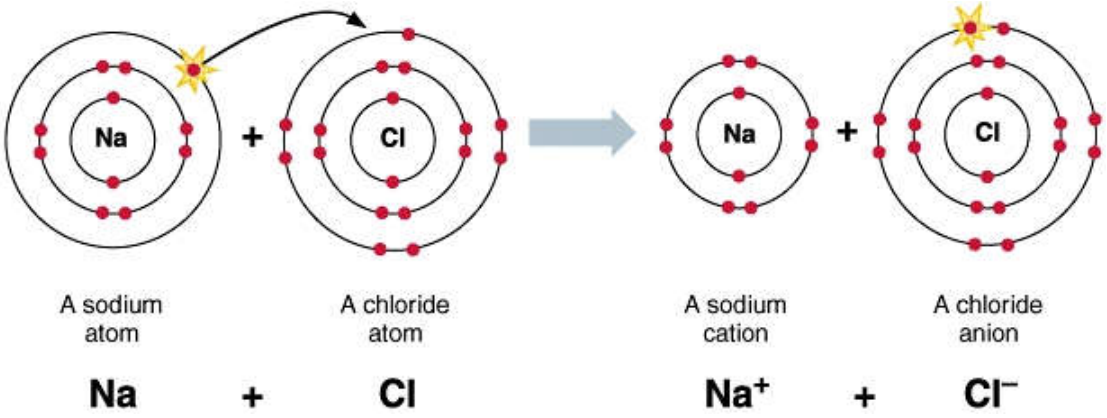
- Atoms are most stable when their "_____"
- **"_____ is great!"** (exception: Hydrogen and Helium are happy with 2)
- Atoms of elements can _____ and form new substances called _____.

  By doing so, they can obtain a _____ (or for hydrogen, 2)

**Bonding:**

There are two types of bonds that can be formed between atoms:

- **Ionic Bonds**
  - **Electrons are _____ from one atom to another**
  - **Ionic Compounds have a relatively _____ melting and boiling point**




- **Covalent Bonds**
  - **Electrons are _____between atoms**
  - **Covalent Compounds have a relatively _____ melting and boiling point**