

Unit 3

NAME

Class Work

11/13/13

3.10 Ions

DO NOW: Place your rough draft (Organize and Construct) on your desk for me to check!

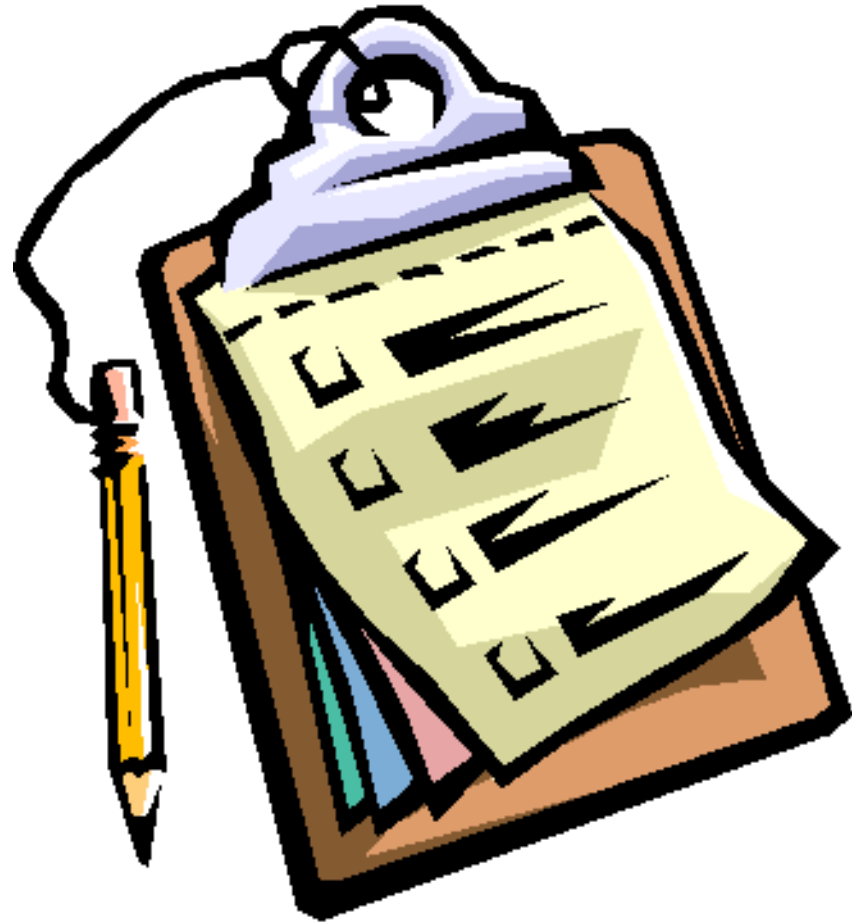
Please complete the questions from Do Now on your sheet of loose leaf.

## Objective

SWBAT determine the number of protons or electrons in an atom or an ion when given one value and interpret ionic notation

# Agenda:

- Do Now
- Objective
- Notes
- Practice
- Homework



# Atoms of an Element

- All atoms of the same element have the same number of protons.....
- What could make atoms of the SAME element different?

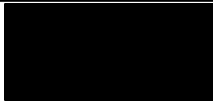

The number of:

– Neutrons

– Electrons

# IONS

Ion – an atom or group of atoms that has a positive or negative charge

Particle	Charge	Mass (a.m.u)	Location
Electron		0	Electron cloud
Proton		1	Nucleus
Neutron	0	1	Nucleus

# IONS

What is the charge of a neutral atom?

0

If you lose an electron?

+1

If you gain an electron?

-1

# Charge Calculation

- The charge of an atom is calculated as:

Charge of an atom = # of protons – # of electrons

# Charge Calculation

What is the charge of a sodium atom with 10 electrons?

How many protons does sodium have?

11 protons

$$\text{Charge} = 11 - 10 = +1$$

Written as  $\text{Na}^{+1}$  or just as  $\text{Na}^{+}$

# Electron Calculations

- How many electrons does the ion  $\text{Pb}^{-2}$  have?

Charge =

Number of protons =

$$\text{Charge} = p^{+} - e^{-}$$

$$-2 = 82 - e^{-}$$

$$e^{-} = 84 \text{ electrons}$$



# Practice Problem 1 – Think, Pair... Cold Call

What is the charge of a Magnesium atom with 10 electrons?

# Practice Problem 2 - Think, Pair...

## Cold Call

- How many electrons does the ion  $\text{Ca}^{+2}$  have?

## Practice Problem 3 – Hands up!

- Which atom has the same number of electrons as  $\text{Be}^{+2}$  atom?

1. Ne

2.  $\text{Cl}^{-1}$

3.  $\text{Al}^{+3}$

4.  $\text{Li}^{+1}$

## Practice Problem 4 - Hands up!

- Which atom has the same charge as  $F^{-1}$  atom?
  1. He with 2 electrons
  2. Cl with 18 electrons
  3. Li with 2 electrons
  4. Ca with 20 electrons

# Create your own ion problems

- 2 questions where the charge is given
- 2 questions where the number of electrons are given.
- Multiple choice or short answer.
- No hands for the first 5 minutes.
- Work independently.
- Winner for the best problems will get a +5 on our next quiz.
- Use any elements on the periodic table.

# Reflection – LOL – Line of Learning

Write a 1-3 sentence response to the following prompt:

- What did learn today?

# Exit Ticket

Complete your exit ticket and pick up your homework!

# HOMEWORK

Complete 3.10 HW Ions



# Chemistry Portfolios

1. Finish your excellence tracker if you have not already done so.
2. Please take out all Unit 1 Material, use the binder clip to secure the materials and place your Unit 1 work in your manila folder.
3. Once you are finished, check your answers to your Review Sheet HW

# Teacher Survey

- You will have 10 minutes to complete the survey. Please be completely honest! This survey is completely confidential.
- When you are finished, take out your Think Ready assignment and make sure you have all sections labeled. Read through your rough draft to yourself and find areas that could be unclear to your reader.

# GOALS for the remainder of class

- Get your rough draft peer edited by at least 2 peers.
- Set three next steps on what you're going to do to improve your ThinkReady project.
- Get together with your partner and plan out/begin constructing your Powerpoint. You may use the laptops
- Reminder: Anions report is due and have presentations on Friday, Cations report is due and have presentations on Monday.
- Sign up on the clipboard to meet with Ms. Hart in the front to discuss your project.

# TOMORROW

- Review for test. YOU NEED TO WATCH THE VIDEOS IF YOU ARE CONFUSED! Stay after school or come early in the morning for extra help!

# HOMEWORK

Complete 3.10 HW Ions

Complete Regents Atomic Review Sheet!

Progress report signed!