

Graded Do Now (5 min)

1-25-11

Based on your notes from yesterday...

1. What is the relationship between matter and the elements?
2. What are 5 of the most common elements in the human body?
3. Draw a diagram of a helium atom (hint 2 protons)
4. What does the **atomic number** tell you?

Atomic Weight and Number: Modeling Atoms

1-25-11

1-25-11 Agenda

1. Do Now (5 min)
2. Objectives (2.5 min)
3. Atomic Number vs. Atomic Weight (20 min)
4. Modeling Atoms (20 min)
5. Closing (2.5 min)
6. Exit Slip (5 min)
7. Participation Grades (5 min)

Objectives (3 min)

- Content (The objectives you'll master today)
- **SWBAT:**
 1. *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*
- Language (How you will master the objectives)
- **By:**
 1. *Drawing atomic models*
 - a) *Writing notes based on the PowerPoint*

Atomic Structure vs. Atomic Weight(20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Every atom has its own unique structure

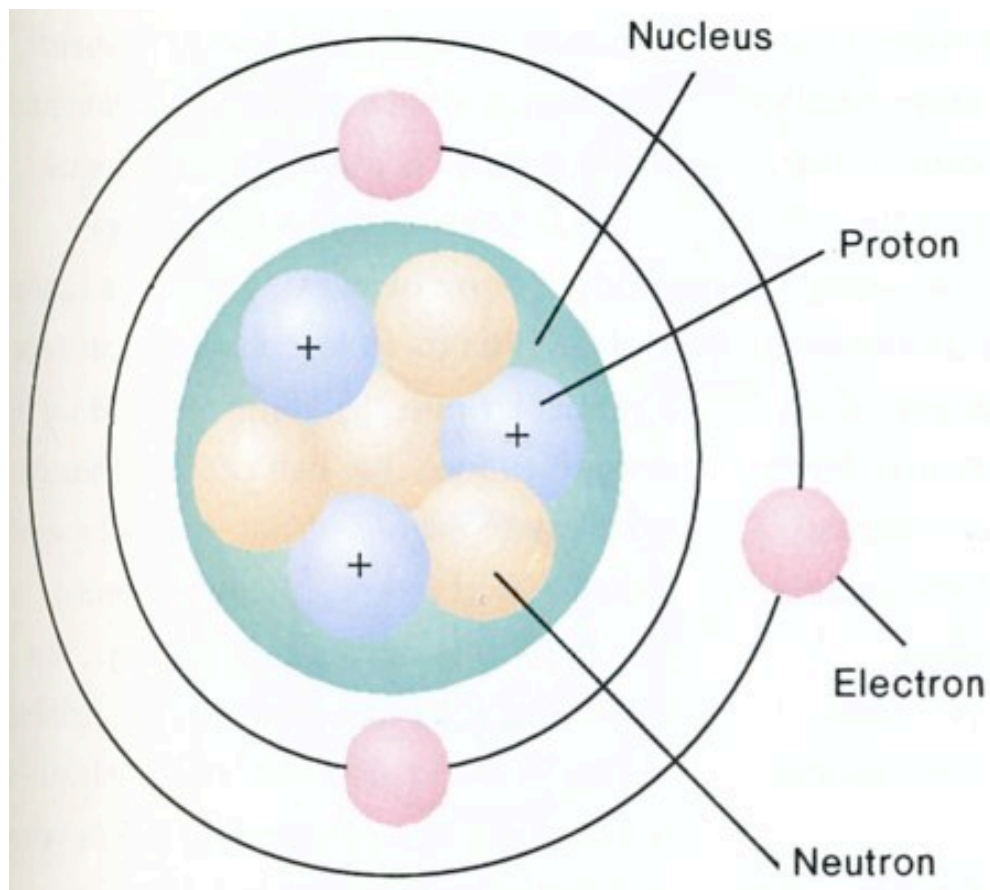
This atom has:

_____Protons(+)

Which means it is an atom of

Since it has _____Protons (+)
it must also have
_____Electrons(-) because...

Protons(+) usually equals
Electrons (-)



Atomic Structure vs. Atomic Weight(20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Every atom has its own unique structure

This atom has:

3 Protons(+)

Therefore we say its *atomic number* is **three**

Atomic Number:

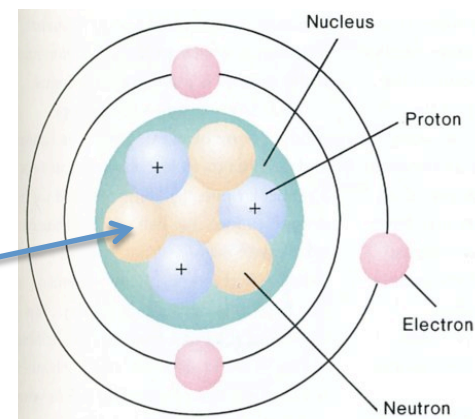
-All atoms also have **neutrons (0)**

(You will have to use the periodic table to figure out the number of **neutrons(0)**)

In this atom, there are 4 neutrons (0)

Therefore we say the *atomic mass* is **seven**

Atomic Mass:



Note: electrons (-) do not have much mass, so we do not include them in the *atomic mass*

Modeling Atoms (20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

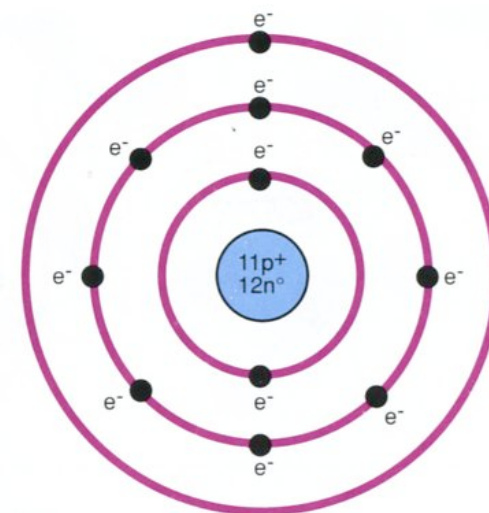
Atomic Number:

number of protons(+)

Atomic Mass: number of protons
and neutrons(0)

Part #1: Answer the Following questions:

1. What is the atomic number of Na (sodium)?
2. What is the atomic mass of Na (sodium)?
3. How many protons does Na (sodium) have?
4. How many electrons (-) does Na (sodium) have?
5. What is the atomic mass of Na (sodium)?
6. How many neutrons does Na (sodium) have?



Note: electrons (-) do not have much mass, so we do not include them in the *atomic mass*

11	Atomic number
Na	Element symbol
Sodium	Element name
22.99	Average atomic mass*

Modeling Atoms (I Do) (20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Atoms have **electron shells**: (circular paths electrons(-) follow)

-Each shell can hold a different number of electrons (-)

-Each shell “wants” to be full

-The shells can hold the following amounts of electrons(-)

Shell #1: up to **2 e⁻**

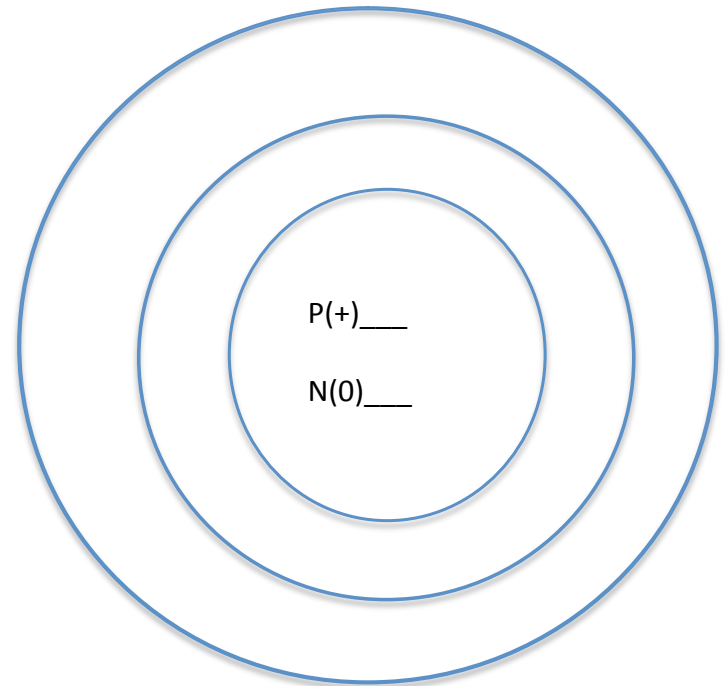
Shell #2: up to **8 e⁻**

Shell #3: up to **18 e⁻**

Shell #4: up to **32 e⁻**

Shell #5: up to **50 e⁻**

Shell #6: up to **72 e⁻**

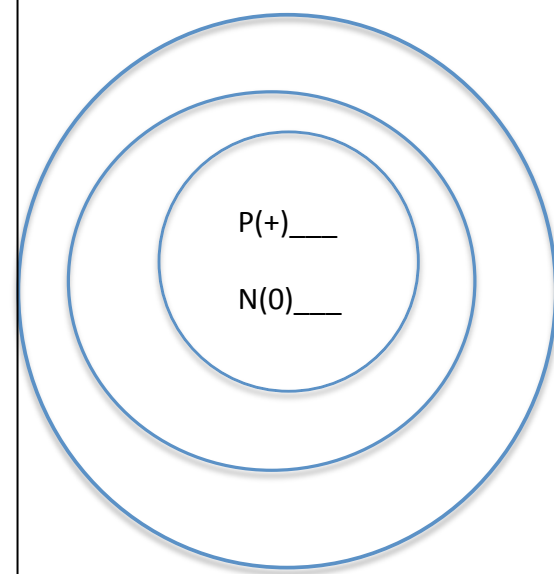


Draw an atomic model of Na (sodium)

Modeling Atoms (We Do) (20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

<u>Atomic Number:</u> number of protons(+)	<u>Atomic Mass:</u> number of protons and neutrons(0)
<p>Part #1: Answer the Following questions:</p> <ol style="list-style-type: none"> 1. What is the atomic number of Cl (chlorine)? 2. What is the atomic mass of Cl (chlorine)? 3. How many protons does Cl (chlorine) have? 4. How many electrons (-) does Cl (chlorine) have? 5. What is the atomic mass of Cl (chlorine)? 6. How many neutrons does Cl (chlorine) have? <p>Part #2: Draw an atomic Model of Cl</p>	<p>-Each shell can hold a different number of electrons (-)</p> <p>-Each shell “wants” to be full</p> <p>-The shells can hold the following amounts of electrons(-)</p> <p>Shell #1: up to 2 e⁻ Shell #2: up to 8 e⁻ Shell #3: up to 18 e⁻ Shell #4: up to 32 e⁻ Shell #5: up to 50 e⁻ Shell #6: up to 72 e⁻</p>



Note: electrons (-) do not have much mass, so we do not include them in the *atomic mass*

Modeling Atoms (You Do) (20 min)

Objective: SWBAT: *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Atomic Number:

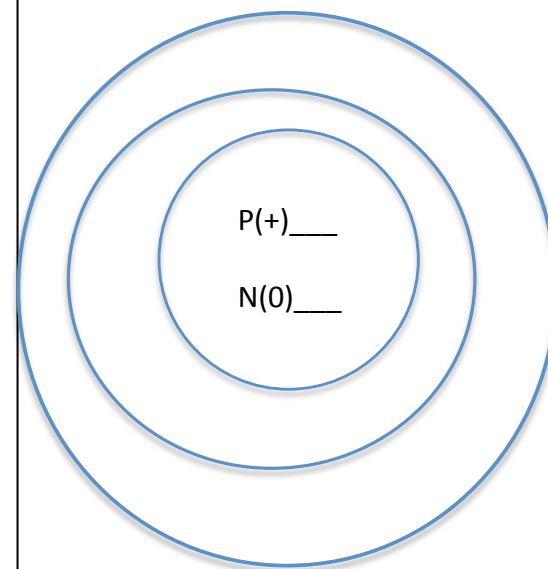
number of protons(+)

Atomic Mass: number of protons
and neutrons(0)

Part #1: Answer the Following questions:

1. What is the atomic number of Cl (chlorine)?
2. What is the atomic mass of Cl (chlorine)?
3. How many protons does Cl (chlorine) have?
4. How many electrons (-) does Cl (chlorine) have?
5. What is the atomic mass of Cl (chlorine)?
6. How many neutrons does Cl (chlorine) have?

Part #2: Draw an atomic Model of Cl



Note: electrons (-) do not have much mass, so we do not include them in the *atomic mass*

Closing/**HW** (5 min)

- Did you master the following objectives?

Content (The objectives you'll master today)

SWBAT:

1. *Explain the structure of atoms by drawing atomic models and by writing notes based on the PowerPoint*

Language (How you will master the objectives)

By:

1. *Drawing atomic models*
 - a) *Writing notes based on the PowerPoint*

Exit Slip (5 min)

Periodic Tables AWAY! 😊

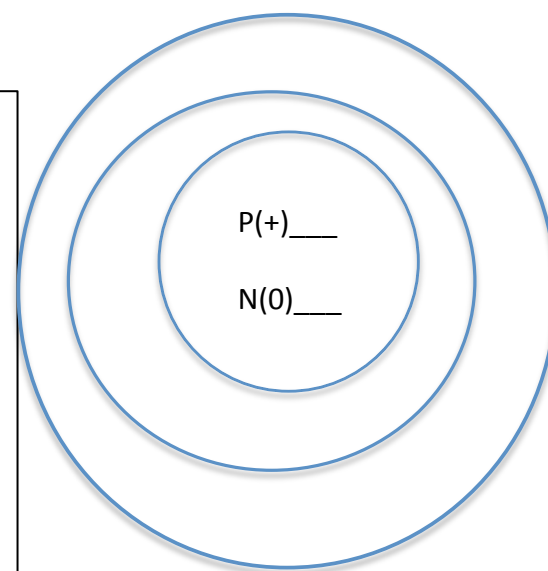
Part #1: Answer the Following questions on a separate sheet:

Facts:

- The atomic number of N (nitrogen) is 7.
- What is the atomic mass of N (nitrogen) is 14

1. How many protons does N (nitrogen) have?
2. How many electrons (-) does N (nitrogen) have?
3. How many neutrons does N (nitrogen) have?

Part #2: Draw an atomic Model of N



Note: electrons (-) do not have much mass, so we do not include them in the *atomic mass*

Participation Grades (5 min)

- Each day **YOU** will decide the grade you deserve...Though, I reserve the right to change these.
- Your 5-point daily participation grade is based on CLA's core-values:
 - CLA Students are S.M.A.R.T.
 - S = Self-Controlled
 - M = Motivated
 - A = Accountable
 - R = Respectful
 - T = Timely
 - One point for each core-value
 - (5 points possible each day)
- What do you deserve today?