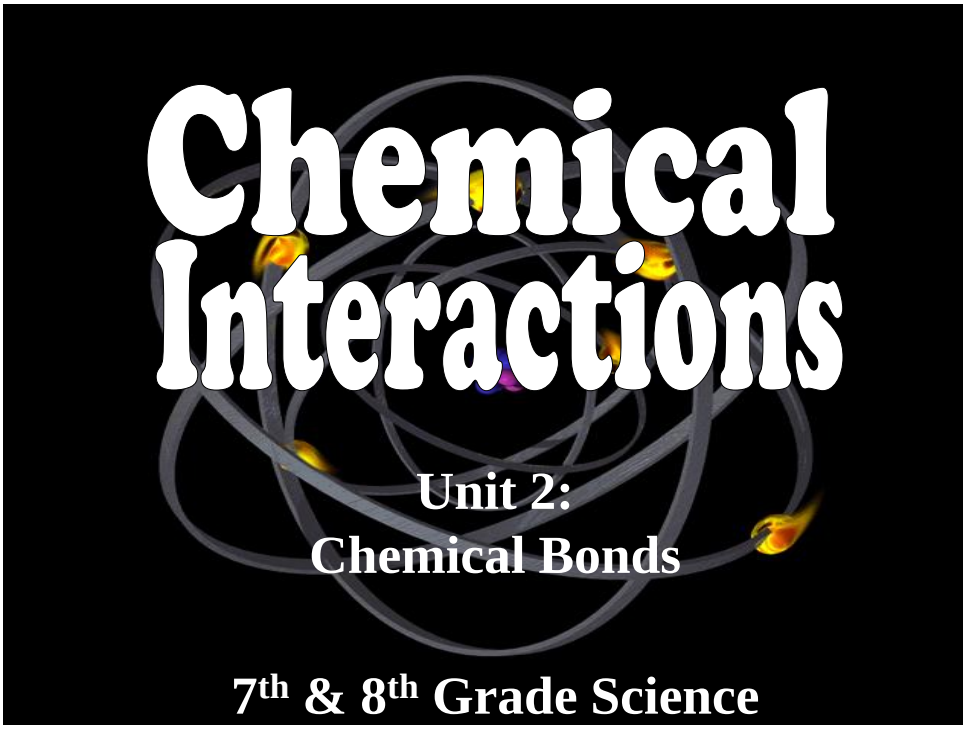


Part A: Read Chem Unit 2 textbook to help you fill in this section.

1. Atoms that have lost or gained electrons are called **IONS**.

2. An atom that lose electrons would have a **POSITIVE** charge and are called **CATION**.
"Cat-Eye-On"

Li 1+
# of Protons = 3 +++
# of Electrons = 3 - - -
# of Valence Electrons = 1
Gives away 1 e-

3. Atoms that gain electrons would have a **NEGATIVE** charge and are called **ANION**.
"An-Eye-On"

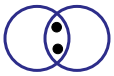
F 1-
# of Protons = 9 +++++++++
# of Electrons = 9 - - - - - - - - -
# of Valence Electrons = 7
Needs to gain 1 e-

4. The **OXIDATION** number is equal to the number of electrons an atom would gain or lose.

5. An **IONIC** bond is a force of attraction that holds together positive and negative ions. It forms between a **METAL** and a **NONMETAL**.

1+ ← OPPOSITES ATTRACT → 1-

6. A **COVALENT** bond is the force of attraction that holds together atoms that share electrons. They form between two **NONMETALS**.



Sharing is Caring

7. What do we call molecules composed of two atoms of the same element? **DIATOMIC**

8. A **METALLIC** bond forms between metal ions and is referred to as a **SEA** of electrons.

Part B: Watch the EDPuzzle videos questions and complete the video quiz to answer these questions!

Video 1: Ionic Bonds

1. How many electrons were transferred from sodium to chlorine to make NaCl? **1**

2. How many valence electrons does a Na atom have? **1**
   How many electrons are in its 2nd shell? **8**

3. How many valence electrons does a Cl atom have? **7**
   How many does it need to fill its outer shell? **1 more (8 total)**

4. The **OCTET** rule states that every atom wants to have eight valence electrons in its outermost electron shell.

5. Atoms that form ionic bonds have **OPPOSITE** charges.

Video 2: Covalent Bonds

1. Why are noble gases considered stable? **They have full octet in their outer shells.**

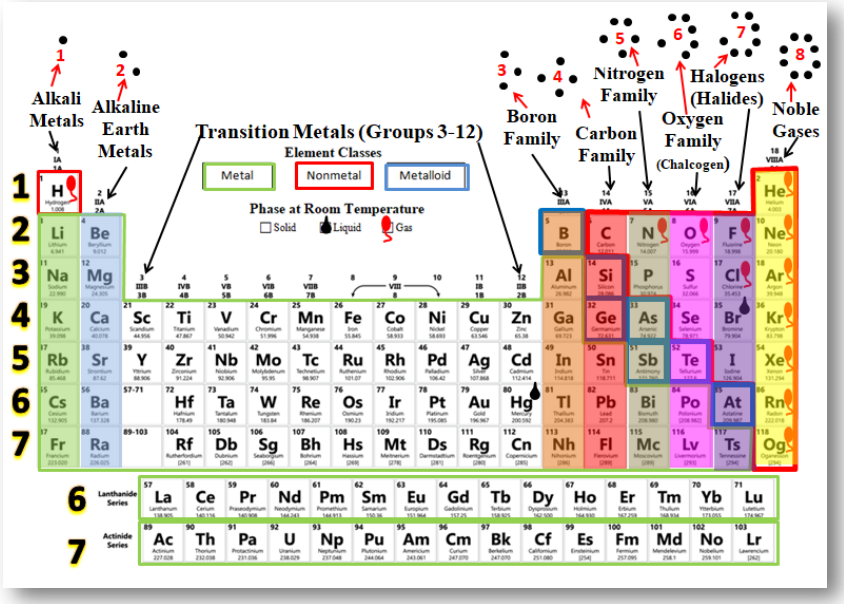
2. How many electrons does a chlorine atom need to gain to fill its outer shell? **1**

3. What type of covalent bond occurs between two chlorine atoms?
SINGLE **1 pair of electrons shared**

4. What type of covalent bond occurs between two oxygen atoms?
DOUBLE **2 pairs of electrons shared**

5. What type of covalent bond occurs between two nitrogen atoms?
TRIPLE **3 pairs of electrons shared**

Remember … elements in the same column have the same # of valence e⁻.

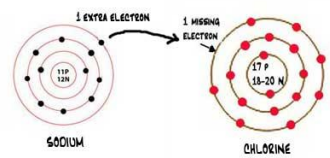


Section A: Complete the chart using a periodic table to help you.

Element	Atomic Symbol	Total # of Electrons	# of Valence Electrons	# of Electrons Gained or Lost	Oxidation Number
Chlorine					
Potassium					
Magnesium					
Fluorine					
A					
S					
Nitrogen					
Oxygen					
Carbon					
Iodine					

Go to https://www.educreations.com/lesson/view/bonding-basics-notes-chart/13543502/ to learn how to complete this section

Part B: What is an ionic bond?

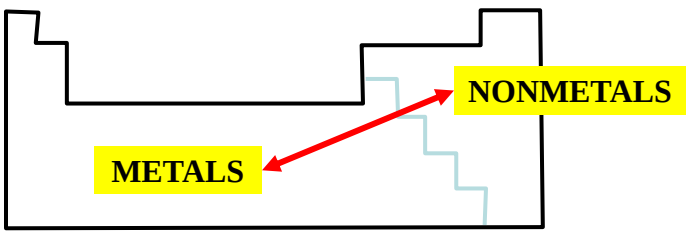


http://scienceforkids.kidipede.com/chemistry/atoms/pictures/salt.jpg

Atoms will transfer one or more **ELECTRONS** to another to form the bond.

Each atom is left with a **COMPLETE** outer shell.

An ionic bond forms between a **METAL** ion with a positive charge and a **NONMETAL** ion with a negative charge.



1+ ← OPPOSITES ATTRACT → 1-

Element Headbands

Before we begin …

Please, please, please …DO NOT bounce the electrons on the table/floor or "click" them together to make a lot of noise.

NOTE: Selfies and photos will be allowed at the end of class IF you FOCUS on the lesson, PARTICIPATE in class, and are NOT ANNOYING in class (i.e. not making noise with the electrons!)

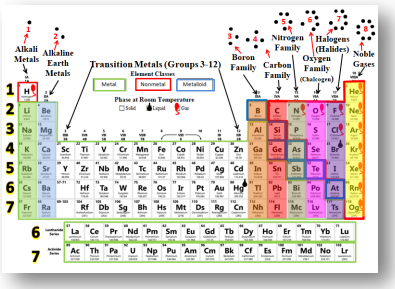
Element Headbands

(1) Each table has several "headbands" – each one labeled with a chemical symbol and pipe cleaners representing the outer shell.

(2) Your table will need to add "electrons" to each headband to represent the number of valence electrons the atoms would have.

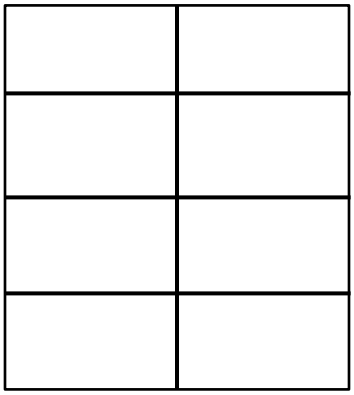
(3) Add "electrons" (ping pong balls with a sad face – they are negative) to the pipe cleaners to show the valence electrons.

How do we know how many valence electrons to add?



Let's get ready to create some bonds …

Divide page 39 into 8 parts →



Wait quietly for everyone to finish.

This means you should not keep moving your head around to click the ping pong balls together or continue to talk to your classmates!

Ionic Bonds – Transfer e⁻

Need Lewis Structures, Arrows, Charges, and Final Formula

Ex 1: Sodium + Chlorine	**Ex 2: Magnesium + Iodine**
Ex 3: Potassium + Fluorine	**Ex 4: Sodium + Oxygen**
Ex 5: Barium + Sulfur	**Ex 6: Aluminum + Chlorine**

Go to https://www.educreations.com/lesson/view/chemistry-ionic-bonding/377075/ to learn how to complete this section

Your Turn …

Example 7: _____+_____

Example 8: _____+_____

What are some other ionic bonds that can be formed with your element? Complete the bond structures for TWO different compounds in the extra spaces on your page.

Before tomorrow …
Use online resources to find the scientific names, common names (if it has one), and uses. Write this information in the boxes for your examples.

End of class – SELFIE TIME!.
Remove all electrons and put in the plastic tub.
Stack all the headbands on top of the tub and return the tub to the side counter.

Challenge: Complete these ionic bonds.

Tin + Sulfur **Radium + Bromine** **Aluminum + Oxygen**

Today's Assignments:
Finish researching your ionic compounds – scientific name, common name, uses
Finish the Legends playlist for this week.
Work on other homework/interventions with any extra class time you have.

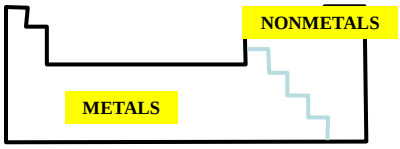
What ionic compounds did you create?

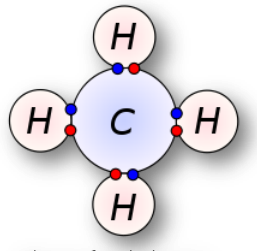
Part C: What is a covalent bond?

Atoms **SHARE** one or more electrons with each other to form the bond.

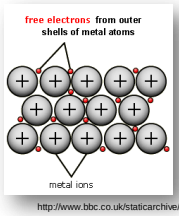
Each atom is left with a **COMPLETE** outer shell.

A covalent bond forms between two **NONMETALS**.





http://upload.wikimedia.org/wikipedia/commons/thumb/1/17/Covalent.svg/200px-Covalent.svg.png



http://www.bbc.co.uk/staticarchive/fba2965c626a450042effd6174b49257d3b3a69f.gif

Think About It: What type of bond forms between two metals?

METALLIC

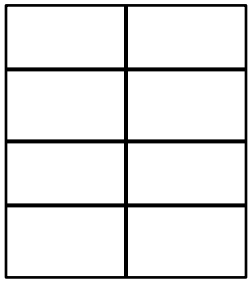
Let's get ready to create some bonds …

(1) Divide page 38 into 8 parts.

(2) Wait for your teacher to pass out headbands and then set it up with the correct number of valence electrons.

(3) Sit quietly and wait for everyone to finish!

This means you should not keep moving your head around to click the ping pong balls together or continue to talk to your classmates!



Covalent Bonds – Share e⁻

Need Lewis Structures, Circles, Bond Diagram, and Final Formula

Ex 1: Hydrogen + Hydrogen	**Ex 2: 2 Hydrogen + Oxygen**
Ex 3: Chlorine + Chlorine	**Ex 4: Oxygen + Oxygen**
Ex 5: Carbon + 2 Oxygen	**Ex 6: Carbon + 4 Hydrogen**

Go to https://www.educreations.com/lesson/view/chemistry-covalent-bonds/380481/ to learn how to complete this section