

Directions: Visit each station. Answer the following questions on a separate sheet of paper.

**STATION 1:**

Sample	Ionic or Molecular	Did the light bulb turn on?	Is the sample a conductor of electricity?

1. What do you observe when the sample conducts electricity?
2. Which sample(s) conducted electricity?
3. Discuss how the conductivity of the NaCl samples were different.
4. What conclusions can be made about how the conductivity of ionic compounds is different from that of molecular compounds?

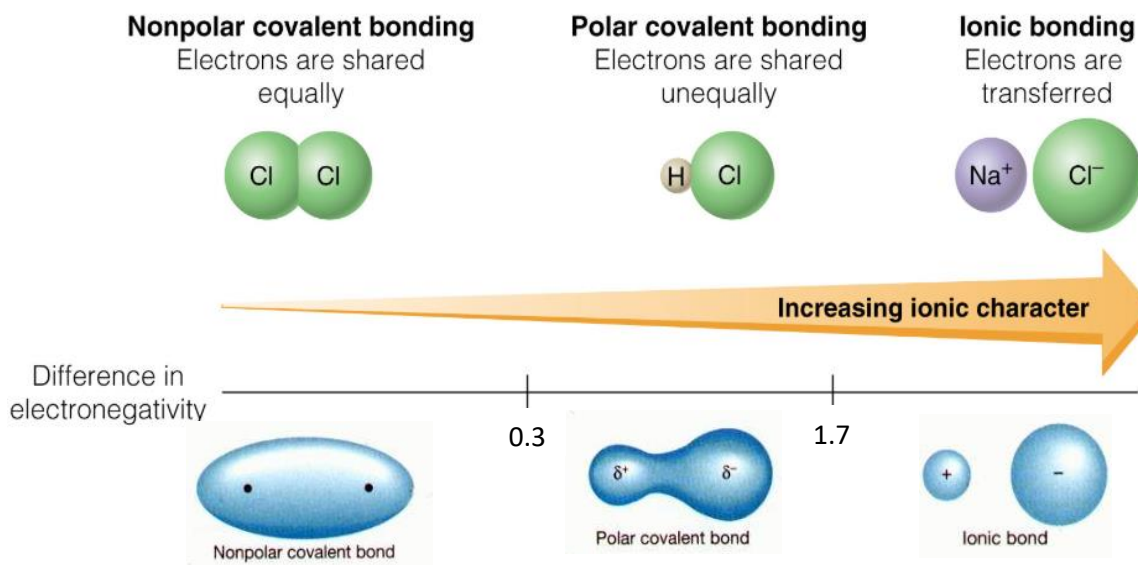
**STATION 2:** Examine the graph of Electronegativity vs. Atomic Number.

1. Which element has the highest electronegativity value?
2. Why do He, Ne, and Ar have electronegativity values of zero?
3. What is the general electronegativity trend as atomic number increases, but number of energy levels remains constant? Why do you think this trend occurs?

**STATION 3:** Examine the table of Electronegativity Values.

1. Which elemental family is excluded from this table? Why do you think this family has been excluded?
2. In general, do metals or nonmetals have a greater attraction for electrons in a chemical bond? Why do you think this is?

**STATION 4:**



Copy the rest of Station 4 notes on loose leaf

### **STATION 5:**

1. Record the electronegativity value for each element below.
  - a. Sodium (Na)
  - b. Chlorine (Cl)
  - c. Phosphorus (P)
2. For each bond below, determine the atom that would have the highest attraction for the electrons in the chemical bond.
  - a. Na and Cl
  - b. P and Cl
  - c. Cl and Cl
3. Calculate the electronegativity difference ( $\Delta EN$ ) between the atoms in each bond below. You may express your answers as positive values.
  - a. Na and Cl
  - b. P and Cl
  - c. Cl and Cl
4. Predict whether valence electrons will be transferred, shared equally or shared unequally between the atoms in each bond below.
  - a. Na and Cl
  - b. P and Cl
  - c. Cl and Cl
5. Classify each bond as either ionic, polar covalent or nonpolar covalent.
  - a. Na and Cl
  - b. P and Cl
  - c. Cl and Cl

### **STATION 6:**

1. Identify each compound as either ionic or molecular.
2. Name each compound.
3. Examine the pictures of ionic compounds vs. molecular compounds.
  - a. What do all ionic compounds have in common?
  - b. What do all molecular compounds have in common?

### **STATION 7: At your desk, watch the video *Melting Sugar vs Salt Comparison*.**

Scan the QR code or find the video in Schoology.

[https://www.youtube.com/watch?v=E\\_q6OC1quSk](https://www.youtube.com/watch?v=E_q6OC1quSk)

1. Which substance melted first?
2. Which substance has the highest melting point?
3. The substance with the highest melting point (#2), has what type of bond?
4. Complete the statement: Ionic compounds have \_\_\_\_\_ melting points than molecular (covalent) compounds.



### **CONCLUSION**

1. Why do you think atoms bond with each other?
2. How do you think atoms bond with each other?