

## Ionic Bonding Puzzle Instructions

**Step one:** Color all of the “ion puzzle pieces” according to the following rules:

- Color all puzzle pieces with a +1 charge red.
- Color all puzzle pieces with a +2 charge orange.
- Color all puzzle pieces with a +3 charge pink.
- Color all puzzle pieces with a -1 charge blue.
- Color all puzzle pieces with a -2 charge purple.
- Color all puzzle pieces with a -3 charge green.

**Step two:** Cut out each of the puzzle pieces.

**Step Three:** Complete the Ionic Bonding Puzzle Activity using the “ion puzzle pieces” to show the compounds.

**Step Four:** Once you have finished putting together all of your pieces for the Puzzle Activity, reuse the puzzle pieces to make and glue the following compounds onto page \_\_\_\_\_ in your notebook. Write their name and formula under each set of glued puzzle pieces on your notebook page.

- Lithium bromide
- Magnesium oxide
- Calcium chloride
- Potassium nitride
- Aluminum phosphide
- Aluminum sulfide

**Step Five:** Complete the worksheet.

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## Ionic Bonding Puzzle Activity

Use your puzzle pieces to combine the following ions to show how they make a compound.

Write down the chemical formula for the final compound. Remember: Positive ion is written first, negative ion is second! Include subscripts to show the number of atoms!

H + F \_\_\_\_\_      Be + O \_\_\_\_\_      Be + I \_\_\_\_\_

Al + N \_\_\_\_\_      Al + P \_\_\_\_\_      Li + P \_\_\_\_\_

Li + F \_\_\_\_\_      Li + Br \_\_\_\_\_      Ca + O \_\_\_\_\_

Ca + S \_\_\_\_\_      H + O \_\_\_\_\_      Al + N \_\_\_\_\_

Al + Br \_\_\_\_\_      K + Cl \_\_\_\_\_      K + I \_\_\_\_\_

Mg + S \_\_\_\_\_      K + S \_\_\_\_\_      Rb + I \_\_\_\_\_

Rb + Br \_\_\_\_\_      H + Cl \_\_\_\_\_

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## Ionic Bonding Puzzle Worksheet

1) What happens to the total charge of the compound after the ions bond together?  
(Hint: add together the charges of the ions in the compound).

2) How many lithium ions are required to bond with one nitrogen ion? Why?

3) How many chlorine ions are required to bond with one aluminum ion? Why?

4) Describe how you can use the periodic table to predict the charge of an ion?

5) Predict the charges for the following: (include the “+” or “-” sign)

Cs \_\_\_\_\_      Sr \_\_\_\_\_      In \_\_\_\_\_

Ra \_\_\_\_\_      As \_\_\_\_\_      Se \_\_\_\_\_

At \_\_\_\_\_      Fr \_\_\_\_\_      Ba \_\_\_\_\_



