

## Large Combination to Go! Exploration

### Problem:

What similarities are there in common chemical formulas?

### Materials:

periodic table

list of compounds:

LiBr	K <sub>2</sub> Se	NaF
Al <sub>2</sub> O <sub>3</sub>	AlF <sub>3</sub>	KCl
BeS	MgCl <sub>2</sub>	CaI <sub>2</sub>
Na <sub>2</sub> O	B <sub>2</sub> S <sub>3</sub>	NaAt
CaBr <sub>2</sub>	MgTe	BI <sub>3</sub>

### Procedure:

The above 15 formulas represent known compounds. Group the compounds by similarities. A periodic table may give you some clues in your groupings. Make as many groups as you think are necessary and record your groupings.

Based on your patterns, write rules concerning the ratio of elements in a compound.

### Summing Up:

1. Using your rules, predict a formula between Li and F and between Li and O.
2. Using your rules, choose elements to make four compounds that are not already on the sheet.
3. Explain why the formula MgCl<sub>2</sub> is correct, but Cl<sub>2</sub>Mg is incorrect.
4. Explain why MgCl<sub>2</sub> is possible, but MgLi<sub>2</sub> is not possible.