

Name _____ Period _____

College Prep (CP) Chemistry of the Earth

Assignment 2F – Periodic Trends Part 1 – Atomic and Ion Structure

20 Points

Complete the following chart based on the periodic trends for atomic size / ion size

Atomic Size Trends

Define the <i>group</i> trends for atomic size	Define the <i>period</i> trend for atomic size
Explain the <i>group trend</i> above	Explain the <i>period trend</i> above

Ion Size Trends

Define the <i>ion size trend</i> for <i>cations</i> (+ ion)	Define the <i>ion size trend</i> for <i>anions</i> (- ion)
Explain the <i>cation trend</i> above	Explain the <i>anion trend</i> above

Put the elements given in order based on the periodic trends listed

Period Trend

Group Trends

Elements: **O, S, Se** (group 16)

Elements: **B, C, N** (period 2)

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Elements: **Li, Na, Fr** (group 1)

Elements: **Na, Mg, Al** (period 3)

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Elements: **Ni, Pd, Pt** (group 10)

Elements: **Zr, Nb, Mo** (period 5)

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Atomic Trend	Element Order		
	Small → Large		
Increasing Atomic Size			

Determine the relative size of the neutral atoms and ions below

<i>Atom</i>	<i>Cation</i>	<i>Smaller</i>	<i>Larger</i>
Ba	Ba ²⁺		
Al	Al ³⁺		
Cu	Cu ²⁺		

<i>Atom</i>	<i>Anion</i>	<i>Smaller</i>	<i>Larger</i>
Br	Br ¹⁻		
O	O ²⁻		
P	P ³⁻		