

Name: _____

























Class/Lab Period: _____

Periodic Trends and the Properties of Elements

Data Table A. Activity of Metals

		Calcium	Magnesium	Aluminum
Reaction with H₂O	Observations			
	Litmus test			
Reaction with HCl	Observations			
	Match test (optional)			

Data Table B. Solubility of Alkaline Earth Metal Compounds

	MgCl ₂	CaCl ₂	SrCl ₂	BaCl ₂	Unknown	
Na ₂ CO ₃	A1 	A2 	A3 	A4 	A5 	
Na ₂ SO ₄	B1 	B2 	B3 	B4 	B5 	
KIO ₃	C1 	C2 	C3 	C4 	C5 	
						

Questions Part A

1. Looking at the placement of these elements on the periodic table what is the pattern of reactivity across a period and down a group? Provide four sources of evidence from your observations/data to support your answer.
2. Draw a Bohr diagram for each of the metals used: Ca, Al, and Mg. *Identify the valence electrons in your drawing using a red colored pencil.*
3. What is the relationship between valence electrons, size of the atom and reactivity?
4. Write the electron configuration for each of the three metals (Ca, Al, Mg) and identify the valence electrons by circling them.
 - a. Why is writing the electron configuration preferred over a Bohr Model?
5. Tonight you are preparing a lasagna dinner for your family. Explain why you will use aluminum foil instead of strontium foil to line the baking dish. Your explanation should include:
 - ✓ a Bohr Model for each element (Al and Sr) with valence electrons indicated in red
 - ✓ explanation of the relationship between valence electrons, size of the atom, and reactivity of the metal.

SS: I would prepare lasagna in Al foil because it is more/less reactive than strontium.

SS: Looking at the Bohr Model of Al shows.....

SS: Looking at the Bohr Model of Sr shows.....

SS: The larger/smaller the atom the harder/easier to remove valence electrons. This applies to Al and Sr because.....

SS: Reactivity of a metal is related to valence electrons because.....