Boiling Point Trends Activities

I. Ionic compounds

Question	Response
Looking at a chemical	
formula, how do you know	
a compound is ionic?	
Ionic compounds are	
composed of ions. Identify	
two types of ions and	
explain their difference.	
Provide a definition of an	
ionic bond.	

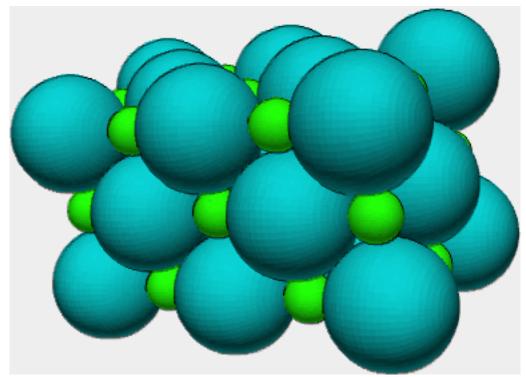


Figure I.

Question	Response
What do you see in the diagram in Figure I above?	

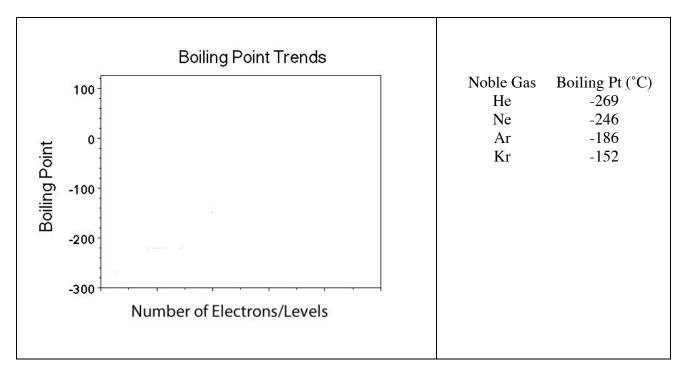
Looking at the diagram of an ionic compound, who is the cation and who is the anion?	
What is the phase of the ionic compound you are discussing/every ionic compound?	
What are some melting points for an ionic compound? Very high? Very low?	

II. Covalent compounds

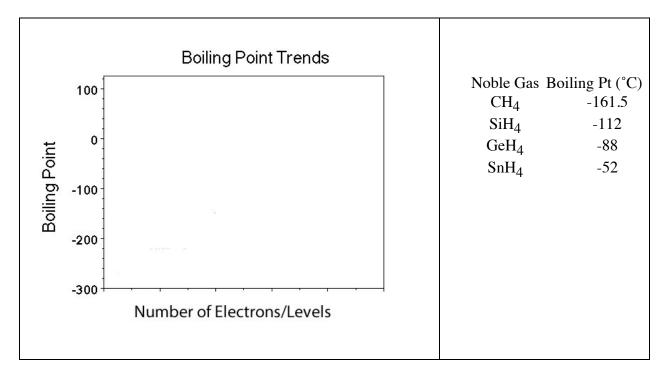
Question	Response
How do you recognize	
covalent compounds from	
their formulas?	
What kind of bonds are in	
covalent compounds?	
What is a covalent bond?	
What is/are the phase(s) of covalent compounds?	
What are some melting points and boiling points for covalent compounds? Very high? Very low?	

III. Boiling points for the Noble Gases

Plot the data found in the right most cell using the graph in the left most cell.

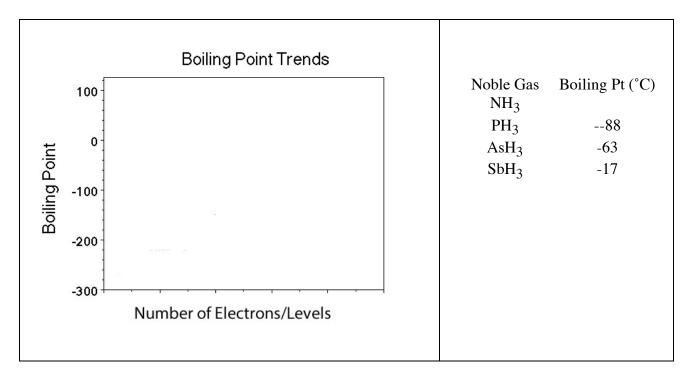


Question	Response
What pattern is evident in the boiling points of the Group VIII elements?	
What trend do you see with electrons?	
What can you say about the polarity of the elements in this group?	



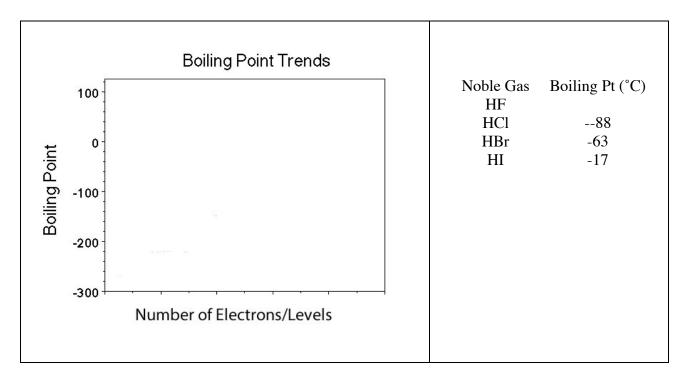
Question	Response
What pattern is evident in the boiling points of the Group IV elements?	
What trend do you see with electrons?	
What can you say about the polarity of the compounds in this group?	

IV. Boiling points for the Group V hydrides

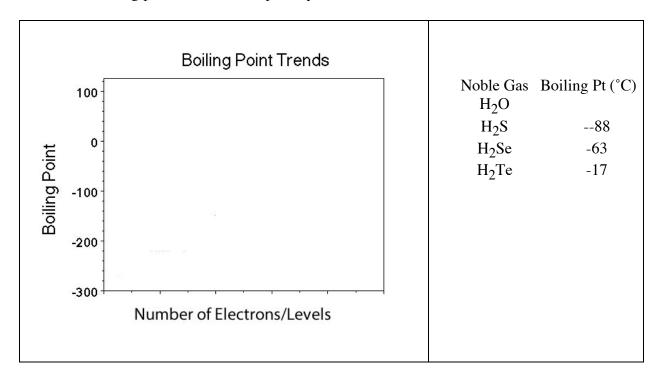


Question	Response
Plot the boiling points for	
PH_3 , AsH_3 , SbH_3 .	
What pattern is evident in the boiling points of the Group V elements?	
What trend do you see with electrons?	
Estimate the boiling point	
for NH ₃	
What can you say about the	
polarity of the compounds	
in this group?	

V. Boiling points for the Group VII hydrides



Question	Response
Plot the boiling points for	
HCl, HBr, HI.	
What pattern is evident in	
the boiling points of the	
Group VII elements?	
What trend do you see with	
electrons?	
Estimate the boiling point	
for HF	
What can you say about the	
polarity of the compounds	
in this group?	



Question	Response
Plot the boiling points for	
H_2S , H_2Se , H_2Te .	
What pattern is evident in the boiling points of the Group VI elements?	
What trend do you see with electrons?	
Estimate the boiling point for H ₂ O	
What can you say about the	
polarity of the compounds	
in this group?	