Activity #3: Graphing Communication an Application Exercise of Alkanes and Alcohols

Analyze the trends in table #1 and answer the questions below:

Table #1 Boiling Point of alkanes and alcohols

Alkane	Boiling Point ($^{\circ}$C)	Alcohol	Boiling Point (^{o}C)
Methane	-164	Methanol	65
Ethane	-89	Ethanol	79
Propane	-42	1-propanol	97
Butane	-0.5	1-butanol	117
Pentane	36	1-pentanol	138
Hexane	69	1-hexanol	156

Question #1

Trends in Properties of Alcohols and Alkanes

1. Graph A: Boiling Points of alkanes from Table #1.
2. Graph B: Boiling points of alcohols from Table #1

Determine in class how you are going to graph alkanes and alcohols (Hint: Carbon Chains). How will the x and y axis be labelled?

Question #2: Research using the Internet and textbook, why melting points don't follow this similar trend?

Question #3: Account for the trend using ideas related to intermolecular forces (dipole-dipole, London Dispersion forces), bond and molecular polarity and alkyl group or chain size. You may need to refresh your understanding of these intermolecular forces (see text, Section 4.7, p.239).

Question #4: Extrapolate to predict the value of the variable property of another organic compound (long, shorter, more groups). Check you prediction using other resources available (see text or Internet). Assess your prediction and thinking of accuracy for your idea.