**In-Class Activity**

Thinking about reactions of ions with water

As shown in this week’s demo video (<https://www.youtube.com/watch?v=GlDUYWpJj8g>), AlCl3 reacts violently with water to produce fuming HCl gas.

1. HCl (hydrochloric acid) is often a liquid at room temperature. What does the fact that HCl is produced as a gas in the video tell you about the energy change of the reaction between AlCl3 and water?
2. What ions does AlCl3 break up into when initially dissolved in water?

1. Thinking about intermolecular forces, what type of interactions are likely to be present between these ions and water?
2. Draw a picture of what you think this interaction will look like for each ion.
3. Why might this interaction lead to the type of energy change you discussed in question 1?
4. Of the two ions that result from the dissolution of AlCl3, which do you think will have a stronger interaction with water? Why?
5. Where does the hydrogen come from to form HCl?