

CHAPTER 2	Investigation 2.B: Soap Bubble Molecules Answer Key	BLM 2.1.10A
ANSWER KEY		

### Answers to Analysis Questions

1. The shape associated with two same-sized bubbles is linear, and the bond angle is  $180^\circ$ . Examples of molecules with this shape are  $\text{CO}_2$  and  $\text{BeCl}_2$ . The shape associated with three same-sized bubbles is trigonal planar, and the bond angle is  $120^\circ$ . An example of a molecule with this shape is  $\text{BCl}_3$ . The shape associated with four same-sized bubbles is tetrahedral, and the bond angle is  $109.5^\circ$ . An example of a molecule with this shape is  $\text{CCl}_4$ .
2. In Step 6, there are two small bubbles and one slightly larger bubble. An example is  $\text{SnCl}_2$ . In Step 7, there are two same-sized bubbles and two slightly larger bubbles. An example of this shape is  $\text{NH}_3$ .

### Answer to Conclusion Question

3. A soap bubble has both polar portions (carboxyl groups) and non-polar portions (hydrocarbon portions). The non-polar ends are attracted to each other, tending to reduce the size of the bubble. The polar ends of a soap bubble stick point outward, away from the inside of the bubble, and act in a similar way to electrons in an atom.