

1. What happens to the average speed of gas molecules as the temperature increases? Why?
2. When gas molecules collide (for example molecules of O_2 or N_2 in the air), why don't they stick together?
3. Imagine a system composed of two different types of molecules, one relatively light and one relatively heavy. At a particular temperature, how do their **average velocities** compare? Why?
4. Imagine a system composed of two different types of molecules, one relatively light and one relatively heavy. At a particular temperature, how do their **average kinetic energies** compare? Why?

5. You place a thermometer into a solution - why does it take time for the reading on the thermometer to correspond to the temperature of the solution?
6. Why don't all the gas particles move with the same speed at a given temperature?
7. If gas molecules are moving so fast (around 500 m/s), why do most smells travel at significantly less than that? (if I open a container of smelly stuff at the front of the CH 101 auditorium it takes a few seconds to smell it – why?)