

# Notes for Solids, Liquids, and Gases

## Effect of Heat

- All atoms are in constant motion.
- As heat is added, the motion of the atoms increase and the atoms spread out.
- As a substance cools, the motion of the atoms decrease and the atoms contract.
- Thermometers measure temperature based on how the alcohol expands or contracts.

## Solids, Liquids, and Gases

- Solids – atoms vibrate but remain in place.
  - Have a definite shape and volume.
- Liquids – atoms remain attached but are able to slide past each other.
  - Have a definite volume but take the shape of their container.

- **Gases – atoms break complete free of each other.**
  - **Take both their shape and volume from their container.**

### **Heat and Density**

- **Adding heat causes atoms to spread out, increases volume, and decreases density.**
  - **Hot fluids are less dense, so they rise.**
- **Removing heat causes atoms to contract, decreases volume, and increases density.**
  - **Cool fluids are more dense, so they sink.**

### **Convection Currents**

- **Convection currents occur in the atmosphere, water, and Earth's mantle creating our weather, deep ocean currents, and plate tectonics.**