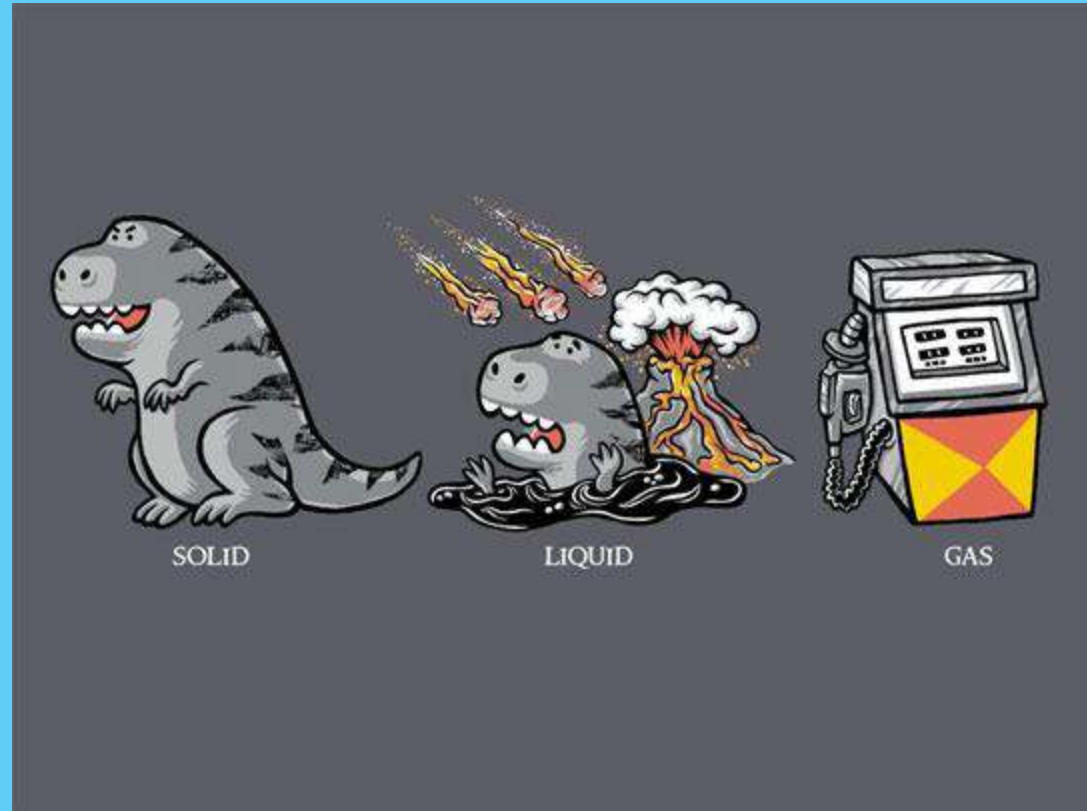


# The Three States of Matter

## Objectives

- Describe the properties shared by particles of all matter.
- Describe three states of matter.
- Explain the differences between the states of matter.



# I. Particles of Matter

**A. Atoms and Molecules** Matter is made up of tiny particles called atoms and molecules. The picture describes three states of matter—solid, liquid, and gas—in terms of the speed and attraction of the particles.



**Particles of a solid** do not move fast enough to overcome the strong attraction between them. So, they are close together and vibrate in place.



**Particles of a liquid** move fast enough to overcome some of the attraction between them. The particles are close together but can slide past one another.



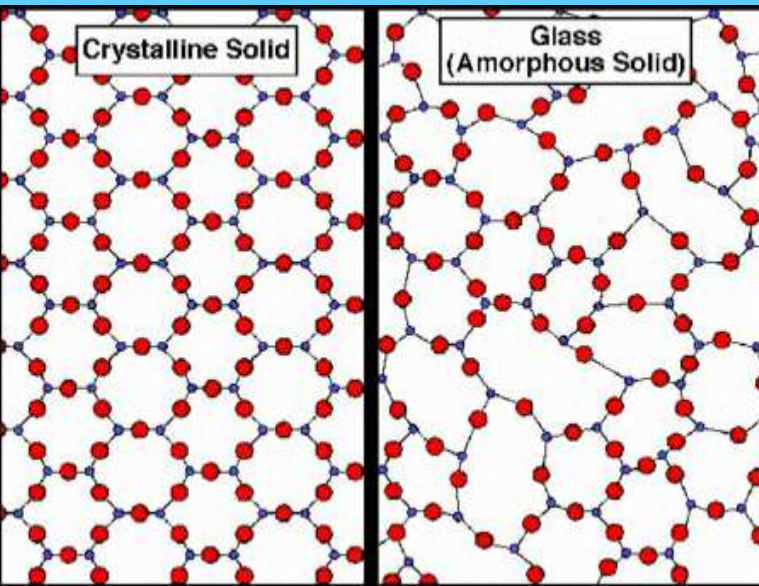
**Particles of a gas** move fast enough to overcome almost all of the attraction between them. The particles are far apart and move independently of one another.

## II. Solids

### A. Solids Have Definite Shape and Volume:

A solid is the state of matter that has a definite shape and volume.

### B. There Are Two Kinds of Solids: There are two kinds of solids—crystalline and amorphous.



# III. Liquids

**A. Liquids Change Shape but Not Volume:** A liquid is the state of matter that has a definite volume but takes the shape of its container.



**B. Liquids Have Unique Characteristics:** A special property of liquids is surface tension. Surface tension is a force that acts on the particles at the surface of a liquid. Another important property of liquids is viscosity. Viscosity is a liquid's resistance to flow.





# IV. Gases

**A. Gases Change in Both Shape and Volume:** Gas is the state of matter that has no definite shape or volume.

