

PARTICLES IN MOTION QUESTIONS

SRB page 27

1. What is kinetic energy?

energy of motion

2. What are two ways to increase an object's kinetic energy?

increase its speed; increase its mass

3. Explain why a balloon inflates when a bottle-and-balloon system is placed in hot water.

Heat increases the kinetic energy of the air particles in the bottle. The particles fly faster and hit harder, pushing the particles farther apart.

The air in the bottle expands into the balloon, making it inflate.

4. What happens to a sample of matter when its particles lose kinetic energy?

Particles don't hit as hard, so they move closer together. The volume of the sample of matter contracts.

5. How are particles in solids, liquids, and gases the same? How are they different?

All particles are in motion; they have kinetic energy. Particles in solids are tightly bonded and only move by vibrating. Particles in liquids are loosely bonded and move over and around one another. Particles in gases are not bonded and move independently through space.