

1. How can shape and volume be used to classify the following materials?

Solid:

Liquid:

Gas:

2. What does the kinetic theory of motion say about atoms?
3. Use kinetic theory **and** attractive forces to explain the behavior of gases, liquids, and solids.
4. How does the arrangement of atoms in copper differ from the arrangement of atoms in mercury?
5. Define **kinetic energy**–
6. What does the kinetic theory of matter say?

7. A hazardous chemical is leaking from a tank truck. Rescue workers need to evacuate people who live near the accident. Why are more people likely to be affected if the chemical is a gas, rather than a liquid?

8. What causes gas pressure in a closed container?

9. Define **pressure**–

10. How does temperature affect gas pressure?

11. How does volume affect gas pressure?

12. Two liters of hydrogen gas are stored at a pressure of 100 kPa. If the temperature does not change, what will the volume of the gas be when the pressure is decreased to 25 kPa?

13. You know that a gas in a sealed container has a pressure of 111 kPa at 23°C. What will the pressure be if the temperature rises to 475°C?

14. Define the following phase changes:

Sublimation–

Deposition-

Condensation-

Vaporization-

Melting-

Freezing-

15. Which phase changes are **exothermic**?
16. Explain why water has a different boiling point at an elevation of 300 meters than it does at sea level?
17. What happens to the speed of particles inside an air-filled balloon if the temperature of the balloon increases?
18. How does the movement of your rib cage affect the volume of your chest cavity?