

Behavior of Gas Study Guide

Be able to write a hypothesis about the relationship between the following variables:

- 1) Temperature of a gas and pressure of a gas
- 2) Volume of a container and pressure of a gas

Be able to give an example of each of the above in action.

Answer the Following Questions:

1. What are the three properties of a gas that you can measure?
2. As you rise higher into the atmosphere, what happens to the pressure?
3. What happens to pressure when you change the temperature of a gas (keeping volume constant)?
4. If you were filling up a parade balloon in the morning and were expecting the temperatures to rise later in the morning, how would this effect the way you inflate the balloon?
5. If someone walks into the ballroom wearing A LOT of perfume, would you know it faster if the ballroom was hot or cold? Why?

States of Matter and Their Changes Study Guide

Definitions

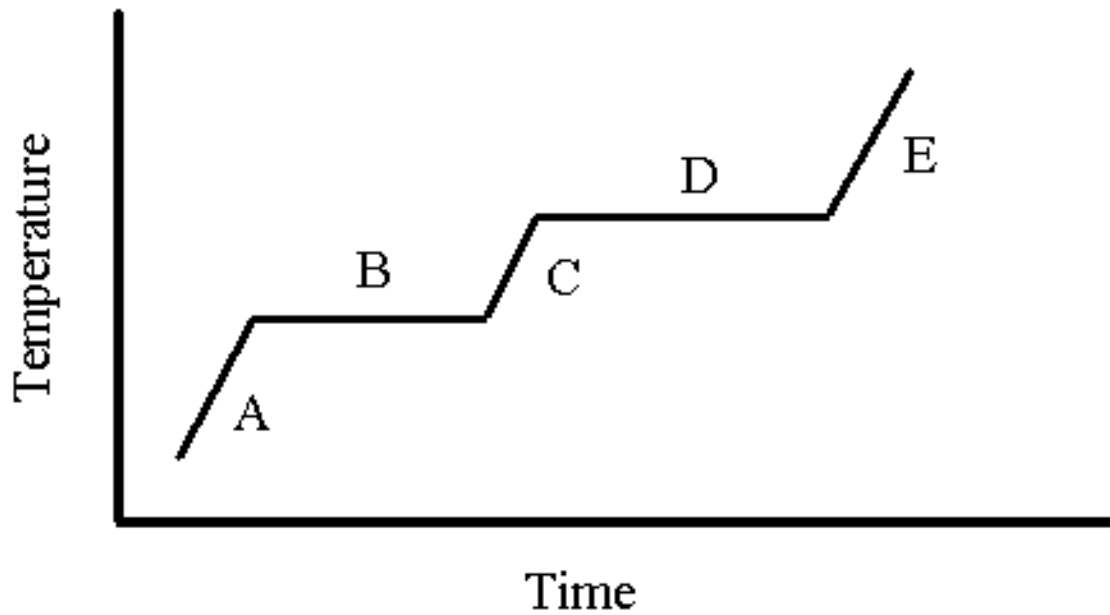
- matter
- kinetic theory of matter
- thermal expansion
- freezing
- melting
- condensation
- vaporization
- evaporation
- boiling
- sublimation
- energy

Questions:

- 1) Which state of matter is the most compressible? Why?
- 4) What must states of matter gain or lose in order to change state?
- 7) Using the law of thermal expansion, explain why the mercury in a thermometer reacts to changes in temperature the way it does.
- 10) Which causes worse burns, steam or boiling water? Why?
- 11) When you wake up on a **cold** morning in a tent, the inside of tent is very wet even though it did not rain. Why is this?
- 12) When a patient has a high fever, doctors will swab the forehead with rubbing alcohol, knowing the alcohol will evaporate quickly. Why would this help bring down the fever? Explain in terms of kinetic theory.

Fill in the chart: with the three states of matter, how the molecules move according to the kinetic theory, how much relative energy the molecules have and whether or not they have a definite shape and volume.

State of Matter	Motion of Molecules	Energy Level of Molecules (lowest to highest)	Definite Shape? (Yes or No)	Definite Volume? (Yes or No)



1) Label all the points on the graph.

- A.
- B.
- C.
- D.
- E.

Then, draw an arrow showing how energy is increasing.