

WKS
Kinetic Molecular Theory of Gases

NAME _____
Period _____ **Date** _____

Watch the video “Kinetic Molecular Theory of Gases” and the other videos in the Kinetic Molecular Theory playlist at <https://www.youtube.com/playlist?list=PLzy4QGtywlo8ohJfV3K0rlenriCPN9JG> (open this document online to click on the link or go to my YouTube channel at <https://www.youtube.com/user/doccasagrande>).

Read section 13.1 in your textbook.

Complete each statement.

1. The kinetic molecular theory describes the behavior of gases in terms of particles in _____.
2. The kinetic-molecular theory makes the following assumptions.
 - a. In a sample of a gas, the volume of the gas particles themselves is very _____ compared to the volume of the sample.
 - b. Because gas particles are far apart, there are no significant attractive or repulsive _____ between gas particles.
 - c. Gas particles are in constant, _____ and _____ motion.
 - d. The collisions between gas particles are _____; that is, no _____ energy is lost.
3. The kinetic energy of a particle is represented by the equation _____.
4. _____ is a measure of the average kinetic energy of the particles in a sample of matter.

In your textbook, read about explaining the behavior of gases.

For each statement below, write *true* or *false*.

- _____ 5. Gases are less dense than solids because there is a lot of space between the particles of a gas.
 - _____ 6. The random motion of gas particles causes a gas to expand until it fills its container.
 - _____ 7. The density of a gas decreases as it is compressed.
 - _____ 8. A gas can flow into a space occupied by another gas.
 - _____ 9. The diffusion of a gas is caused by the random motion of the particles of the gas.
 - _____ 10. Lighter gas particles diffuse less rapidly than do heavier gas particles.
 - _____ 11. During effusion, a gas escapes through a tiny opening into a vacuum.
 - _____ 12. Graham's law of effusion states that the rate of effusion for a gas is directly related to the square root of its molar mass.
13. What assumption of the kinetic-molecular theory explains why a gas can expand to fill a container?
14. How does the mass of a gas particle affect its rate of effusion?