

Name _____

States of Matter



Goggles must be worn during this investigation!

Background Information: There are four *STATES OF MATTER*: solid, liquid, gas, and plasma. They are sometimes called PHASES of matter. The state of matter of a substance depends on its temperature and pressure.

Matter is made up of moving particles. The state of matter is determined by how much energy the particles have. This is called the *KINETIC THEORY*.

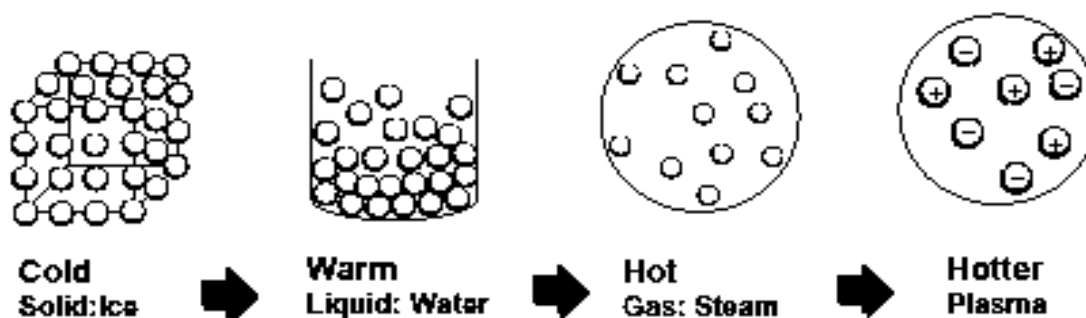
The particles of a *solid* vibrate in a fixed position. They stay close together and give the solid a definite shape and volume.

The particles of a *liquid* are moving much faster and have enough energy to slide past one another. This allows a liquid to take the shape of its container. The particles of a gas are moving so quickly that they have enough energy to move freely away from other particles.

The particles of a *gas* take up as much space as possible and will spread out to fill any container.

Plasma is the most abundant form of matter in the universe. Over 99% of the universe is composed of plasma. In the solid, liquid, and gas form of matter electrons are attached to the atoms nucleus.

Plasma is made when enough heat is applied to take the electrons from the atomic nucleus. It is this form of matter that is used in the fusion process of the Sun. Examples of plasmas on earth are neon signs, fluorescent lights, and lightning.



Problem: To identify the state of matter of different substances.

Materials:

1 beaker of oobleck	1 beaker of glurch	1 beaker of glorax
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Procedure:

1. You will be observing 3 types of matter: oobleck, glurch, and glorax. Make a data chart to record your observations. Have your teacher check and initial your chart before you begin making observations.
2. Begin with the oobleck. Use all of your senses except taste to make observations. Push it, pull it, roll it in a ball...Record your observations in the data chart.
3. After each observation, decide if the observation is a property of a solid, a liquid, or a gas. It may be a property of more than 1 state of matter. Record this also.
4. Repeat steps 2 and 3 with the glurch
5. Repeat steps 2 and 3 with the glorax.

Data:

Make a chart to record your data and have your teacher initial it.

Teacher Initials:

4. How is all of the matter alike?

5. How is all of the matter different?

6. Describe the four states of matter in your own words.