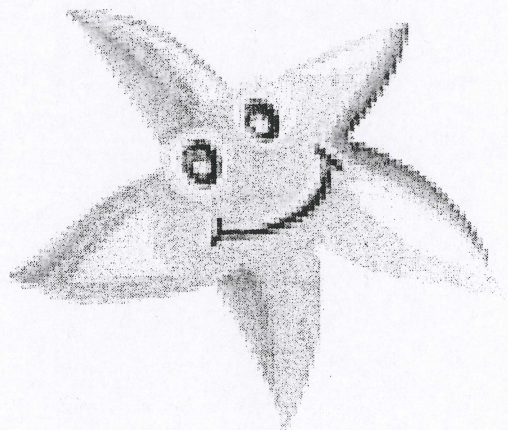


What Is Matter?

Listed below is a list of things that are considered matter and things that are not considered matter. Put an X next to each of the things that you consider to be matter.

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> rocks | <input type="checkbox"/> Mars |
| <input type="checkbox"/> baby powder | <input type="checkbox"/> Jupiter |
| <input type="checkbox"/> milk | <input type="checkbox"/> steam |
| <input type="checkbox"/> air | <input type="checkbox"/> rotten apples |
| <input type="checkbox"/> light | <input type="checkbox"/> heat |
| <input type="checkbox"/> dust | <input type="checkbox"/> sound waves |
| <input type="checkbox"/> love | <input type="checkbox"/> water |
| <input type="checkbox"/> cells | <input type="checkbox"/> bacteria |
| <input type="checkbox"/> atoms | <input type="checkbox"/> oxygen |
| <input type="checkbox"/> fire | <input type="checkbox"/> stars |
| <input type="checkbox"/> smoke | <input type="checkbox"/> gravity |
| <input type="checkbox"/> salt | <input type="checkbox"/> magnetic force |



Explain your thinking. Describe the "rule" or reason you used to decide whether something is or is not matter.

Gases and liquids are two of the _____ main states of matter. _____ are the third. Matter is anything that takes up _____ the universe is made of. All physical matter is composed of tiny particles called _____. These atoms behave differently depending on the _____ and pressure of their environment. (Zoom into glass of water.) Water is made up of tiny particles called _____. Each water molecule is made up of two hydrogen atoms and one _____ atom.

At room temperature, and in normal atmospheric pressure, these molecules form a _____. The particles within a liquid are pretty close together, but they are not arranged in any kind of rigid _____. They move around and slide past each other pretty regularly. Liquids have a fixed _____ but not a fixed _____. If you put liquid in a glass, it will take the shape of the glass. If you put it in a water gun, it will take the shape of the water gun.

If we raise the temperature of the water, for example _____ it, it will change state and become a gas. When you increase the temperature of the water, you are adding _____ to it. The particles get excited—they start moving around a lot _____ and get farther and farther away from one another. The changes in state are only _____ — the chemical



Word Bank

- space
- oxygen
- shape
- atoms
- colloids
- volume
- ice
- boil
- plasma
- physical
- energy
- faster
- shape
- molecules
- temperature
- liquid
- three
- energy
- structure
- solids
- volume
- matter

structure stays the same. The particles are still water molecules made up of oxygen and hydrogen. Unlike liquids, gases don't have a fixed _____ . They have a tendency to expand, which means they'll fill up any container you put them in.

You are probably already familiar with solid water, we call it _____. When you lower the temperature of water, you are removing _____. As a result, the particles do not move around much. They are still made of hydrogen and oxygen—but now they are locked into a pretty rigid structure. Solids have a definite _____ and a definite volume. Under normal conditions, they look pretty much the same, no matter what container you put them in. The main states of matter are not just for water, all _____ can be a solid, liquid, or gas.

Another state of matter is called _____, it's an electrically charged gas. Every star in the sky, including the sun, is made up of plasma. So is lightning. Fluorescent light bulbs in your classroom are filled with plasma.

_____ are mixtures that contain two separate phases of matter. Butter, gelatin, and paint are all colloids.

