

PS1e. Students know matter has three forms: solid, liquid, and gas.

States of Matter

Just about everything you see is **matter**. Whatever you are standing on is matter. Everything you are wearing is matter. Everybody you know is made of matter. All those things you eat, drink, and breathe are matter. Matter is the stuff that everything is made of.

Solid Matter

Matter is found on Earth in three common forms or **states**. Matter can be hard like bricks, flashlights, and spoons. Bricks, flashlights, and spoons keep their shape if you put them in a basin, on a table, or in a bag. And they will be the same shape tomorrow. Bricks, flashlights, and spoons are all **solid**. Solids have definite shape. And they keep that shape all the time.

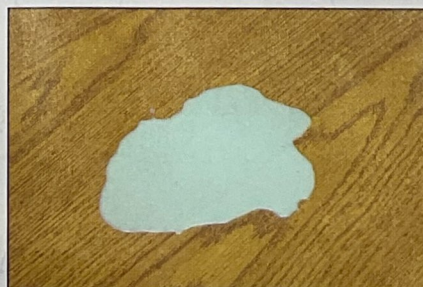


Matter can be soft. Socks, stuffed toys, and sponges are all matter. And socks, stuffed toys, and sponges keep their shape if you put them in a basin, on a table, or in a bag. And they will be the same shape tomorrow. Socks, stuffed toys, and sponges have definite shape. And they keep that shape all the time.



Liquid Matter

Matter can be wet and shapeless like water, oil, and shampoo. Water, oil, and shampoo are not the same shape if you put them in a basin, on a table, or in a bag. And they will be a different shape everywhere you put them. Water, oil, and shampoo are **liquid**. Liquids flow or pour. Liquids have no shape of their own. Liquids take the shape of the containers they are in. The amount of a liquid does not change, but its shape does.



Gas Matter

Matter can be invisible and difficult to feel, like air and helium. Air and helium have no shape. You can't put them in a basin or on a table. They will drift away. Air and helium are **gas**. You can hold a gas in a bag. But the gas will change shape to fill the space inside the bag. Gases spread out everywhere. The shape and volume of gases can change.



Small Solids

Solid matter can be in tiny particles. Flour, salt, and sand are all solid matter. But sand in a basin looks different when you pour it on a table or put it in a bag. Sand can pour. Is sand a liquid? No, sand is solid. The tiny pieces of sand are hard, and their shape and volume do not change.



Here's how to test a sample of matter to see if it is liquid or solid. Try to make a pile. If the matter will make a pile, it is solid matter. If it flows into a puddle, it is liquid matter.



Solid particles make a pile, but liquid does not.

Here's another test. Try to place a large nail on the matter. If the nail stays on top, the matter is solid. If the nail sinks, the matter is liquid.



A nail sinks in liquid but stays on the surface of a solid.

Review Questions

1. **What is matter?**
2. **How can you tell if a sample of matter is solid?**
3. **How can you tell if a sample of matter is liquid?**
4. **How can you tell if a sample of matter is gas?**
5. **How can you tell if a sample of matter that pours is solid or liquid?**