What is the difference between a solid, a liquid and a gas? — 1

Read the text.

How many of these things can you find in your classroom? A book, a bottle of glue, a ruler, a cup of water, a chair and a blown-up balloon? They are all different types of matter. Matter is anything that takes up space and has mass (weight). Matter is all around you—even the air is a form of matter! Matter can be a solid, a liquid or a gas. These are called states of matter. We can tell the difference between solids, liquids and gases because they have different properties (things they can do).

All solids, liquids and gases can be weighed. A solid like a pebble won’t weigh much but it can be weighed. A gas like the air may feel like it doesn’t weigh anything at all but it too can be weighed.

A solid has a definite size and shape. It can be hard like a brick or soft like a pillow. A solid can change its shape only if we do things to it like bending it or cutting it.

A liquid has an exact size but does not have a definite shape. It changes shape according to the type of container it is in. A liquid can be poured but a solid can not. We say a liquid can flow. Some liquids are thicker than others; for example, honey is thicker than milk.

A gas does not have a shape or size. It spreads out until it fills the container it is in. Like liquid, a gas can flow. A gas can get bigger or smaller to fit in different sized containers. A gas like the air has no colour—we cannot see it. We can feel air blowing and see bubbles of air if we blow air into a straw placed in a glass of water.

Why do solids, liquids and gases have different properties? Matter is made up of tiny particles. In a solid, these particles are packed together so tightly they can hardly move. That’s why a solid keeps its shape. In a liquid, the particles are close together, but they are always moving around each other. That’s why a liquid can flow. In a gas, the particles are far apart. They bounce off each other and flow so easily they can spread out to fill up any space.

Try to answer this question without reading the answer!

Do you think sand is a solid, a liquid or a gas?

(Turn the page upside-down to find out)


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