

Maya's Ice Cube



Figure 1: A child's hand holding a melting ice cube over a kitchen sink, with water droplets falling and steam rising from a warm mug in the

An ice cube is a solid where particles are close together and vibrate in place. "Why is ice so hard?" she asked her dad.

"All matter is made of tiny particles," Dad said. "In ice, the particles are packed tight together and barely move. They just vibrate in place."

In solids, the particles are close together and vibrate in place. It melted in her warm hand. Water dripped down.

"The particles are moving now," Dad explained. "They slide past each other. That's why water flows."

When water is boiled, it changes from a liquid where particles are separated by spaces and can slide past each other, to a gas where particles are separated by large spaces and are constantly moving in all directions. Steam rose up and disappeared into the air.

"Those particles are racing everywhere," Dad said. "They have huge spaces between them. That's a gas."

Maya smiled. One ice cube. Three states. All made of moving particles.

Words to know

- **particle:** a tiny piece of matter too small to see
- **vibrate:** to shake or jiggle in place
- **solid:** matter with a fixed shape, like ice
- **liquid:** matter that flows, like water
- **gas:** matter with no fixed shape, like steam

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