

Nova's Guide to the States of Matter

Explore the building blocks of our universe with Nova the Owl!

- **Solids have a fixed shape and volume because their particles are packed closely together in a neat, vibrating pattern.**
- **Liquids can flow and take the shape of their container because their particles are close together but can slide past one another.**
- **Gases have no fixed shape or volume; their particles are far apart and move rapidly in all directions to fill any available space.**
- **When a solid is heated, it gains energy and turns into a liquid through the process of melting.**
- **When a gas cools down, it loses energy and turns into a liquid through the process of condensation.**

Did you know? Did you know? Even though a block of ice, a puddle of water, and the steam rising from a kettle look very different, they are all made of the exact same substance: H₂O! The only thing that changes is how much energy the particles have and how they move.

Key vocabulary: Solid · Liquid · Gas · Particle · Evaporation · Condensation · Melting · Freezing · Thermal energy