



Although solids may seem still, the atoms and molecules they're made of are constantly vibrating and moving. This motion is what gives solids their structure and properties.



Solids often have a crystalline structure with atoms arranged in a repeating pattern, giving crystals their distinct shapes and optical properties.



Not all solids have a crystalline structure. Some, like glass and certain plastics, are amorphous, meaning their atoms are arranged randomly.



Some liquids can be supercooled below their freezing point without solidifying. For example, pure water can remain liquid below $0^{\circ}\mathrm{C}$ if it's free of impurities and disturbances.



Different solids have different densities. For example, metals like lead and gold are much denser than non-metals like wood or plastic.



Some solids, when cooled to extremely low temperatures, can exhibit superconductivity, where they can conduct electricity without any resistance.



Solids have mechanical properties such as hardness, elasticity, and brittleness, which determine how they respond to external forces like pressure and temperature changes.



The study of the structure of crystals, known as crystallography, is an important branch of science that helps understand the arrangement of atoms or molecules in solids.

