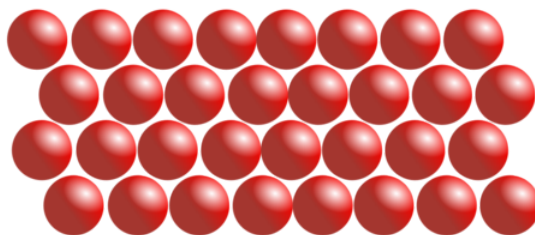


10.2: Solids

The most obvious distinguishing feature of a solid is its rigidity. In the image below, you see fools gold, or pyrite. Like any typical solid, it is hard and rigid, especially when compared to a liquid or a gas.



On the microscopic level this corresponds to strong forces between the atoms, ions, or molecules relative to the degree of motion of those particles. The only movements within a solid crystal lattice are relatively restricted vibrations about an average position. This restricted vibration is due to the tight packing of the atom, as seen in the microscopic depiction of a solid below. Thus we often think and speak of crystalline solids as having atoms, ions, or molecules in fixed positions.



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