



Entanglement



Entanglement is a concept that describes how two particles can be tied together. Particles have properties like **position**, **momentum**, and **spin**. Think of a particle like a spinning top—it has a place, somewhere it is moving to, and a direction that it spins. Tops can spin clockwise or counterclockwise, and similarly, particles can spin up or down. However, unlike tops, particles can be entangled. When particles are entangled, measuring the properties of one particle instantly tells us something about the other particle, no matter how far apart they are. For example, if two particles are entangled, their spins must be equal and opposite: one up and one down.

Quantum computers use fundamental quantum characteristics like entanglement to solve certain types of problems in ways that regular computers cannot. Entanglement lets the computers explore more possibilities at once for answers to problems, making them exponentially faster than regular computers in some cases.