

What is Radiation?

Broadly radiation is an emission of energy. The sun emits energy as photons that we call light. It also emits high energy photons called gamma rays, which is what most people think of as radiation. The only difference between x-rays and gamma rays is how they are produced. X-rays are usually produced by a machine, which can be turned on and off. Gamma rays come from an atomic nucleus and are governed by the atoms half-life in how many are produced. Gamma and x-ray radiation behave like light. They can travel a long distance and can be blocked, or shaded, by heavy dense material such as layers of lead. Because of their high energy, they can travel through many common materials that block ordinary light. Radiation is also particulate. Alpha particles are essentially helium nuclei that have been stripped of their two electrons. These are emitted from the nucleus of a radioactive atom. They travel a short distance (less than 1 inch). Beta particles are like electrons. They are emitted both from a nucleus and from the electron cloud around the nucleus. They travel farther than alpha particles and not as far as gamma or x-rays.