Scientists use radiometric dating methods to determine the age of ancient artifacts or geological formations by measuring the abundance of certain radioactive isotopes and their decay products. The most common method is radiocarbon dating, which measures the decay of carbon-14 in organic materials. Other methods include potassium-argon dating, uranium-lead dating, and rubidium-strontium dating, each suitable for different time scales and materials. By comparing the ratio of parent isotopes to daughter isotopes, scientists can calculate the age of the sample.