

29 When α -particles are directed at gold leaf:

1. almost all α -particles pass through without deflection
2. a few α -particles are deviated through large angles.

What are the reasons for these effects?

	1	2
A	most α -particles have enough energy to pass right through the gold leaf	gold is very dense, so a few low energy α -particles bounce back from the gold surface
B	most α -particles miss all gold atoms	a few α -particles bounce off gold atoms
C	the gold nucleus is very small so most α -particles miss all nuclei	occasionally the path of an α -particle is close to a nucleus
D	the positive charge in an atom is not concentrated enough to deflect an α -particle	occasionally an α -particle experiences many small deflections in the same direction