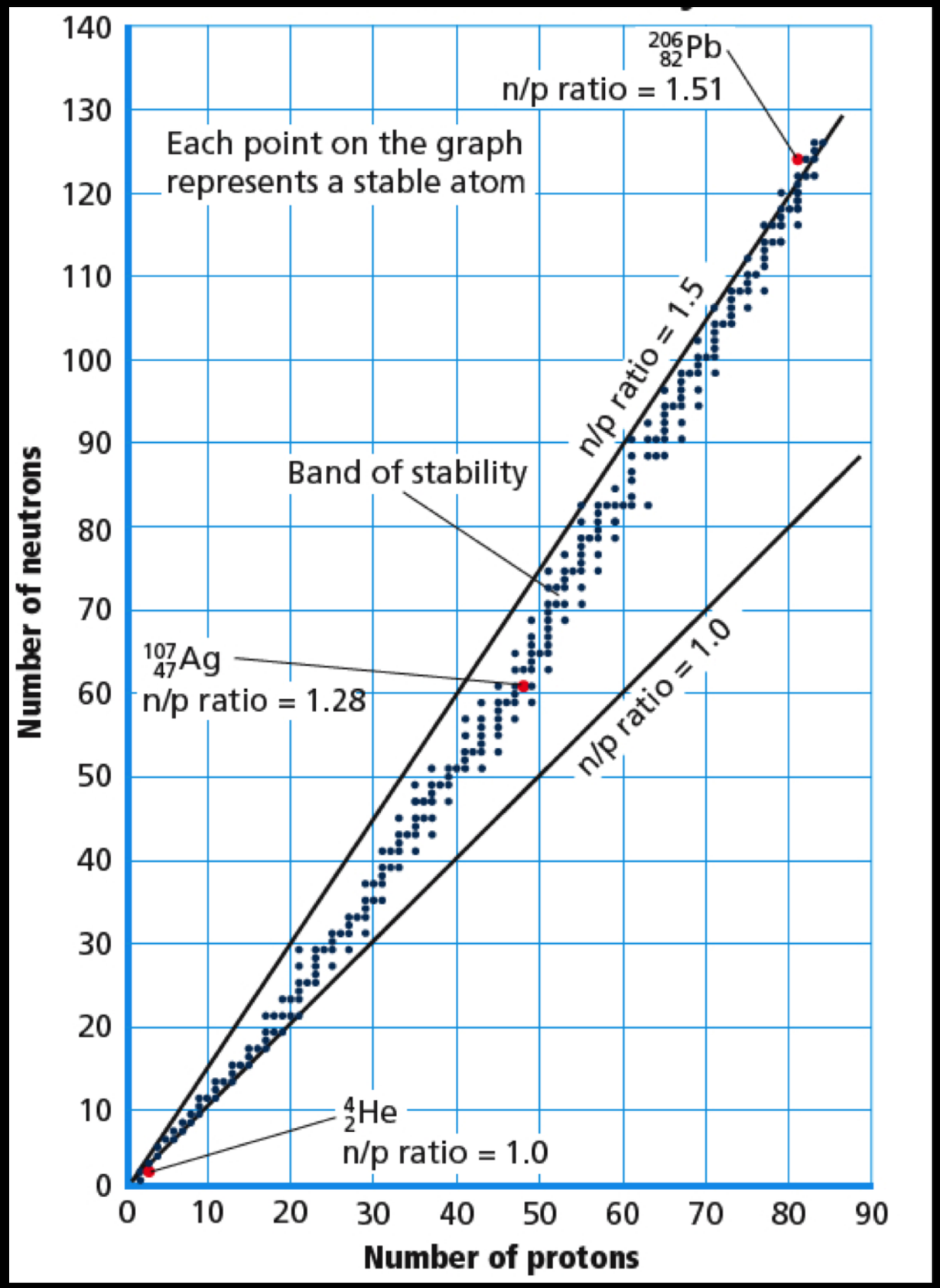
Nuclear Decay

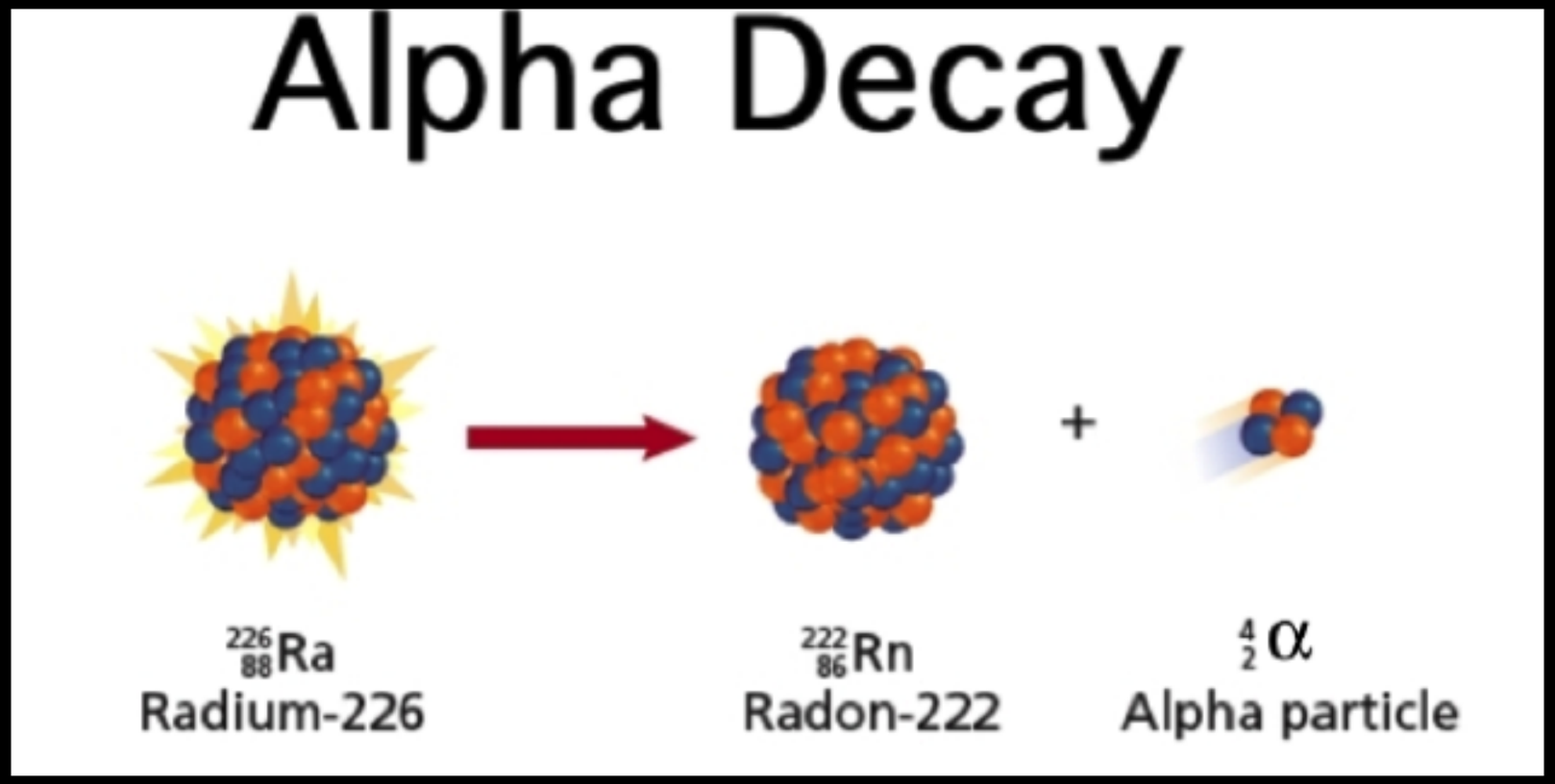
- The stability of a nucleus is dependent on the strong nuclear force being sufficient to overcome all proton-proton repulsions.
- When elements contain too many protons, additional neutrons are needed to have a "stable" nuclei.

The Band of Stability

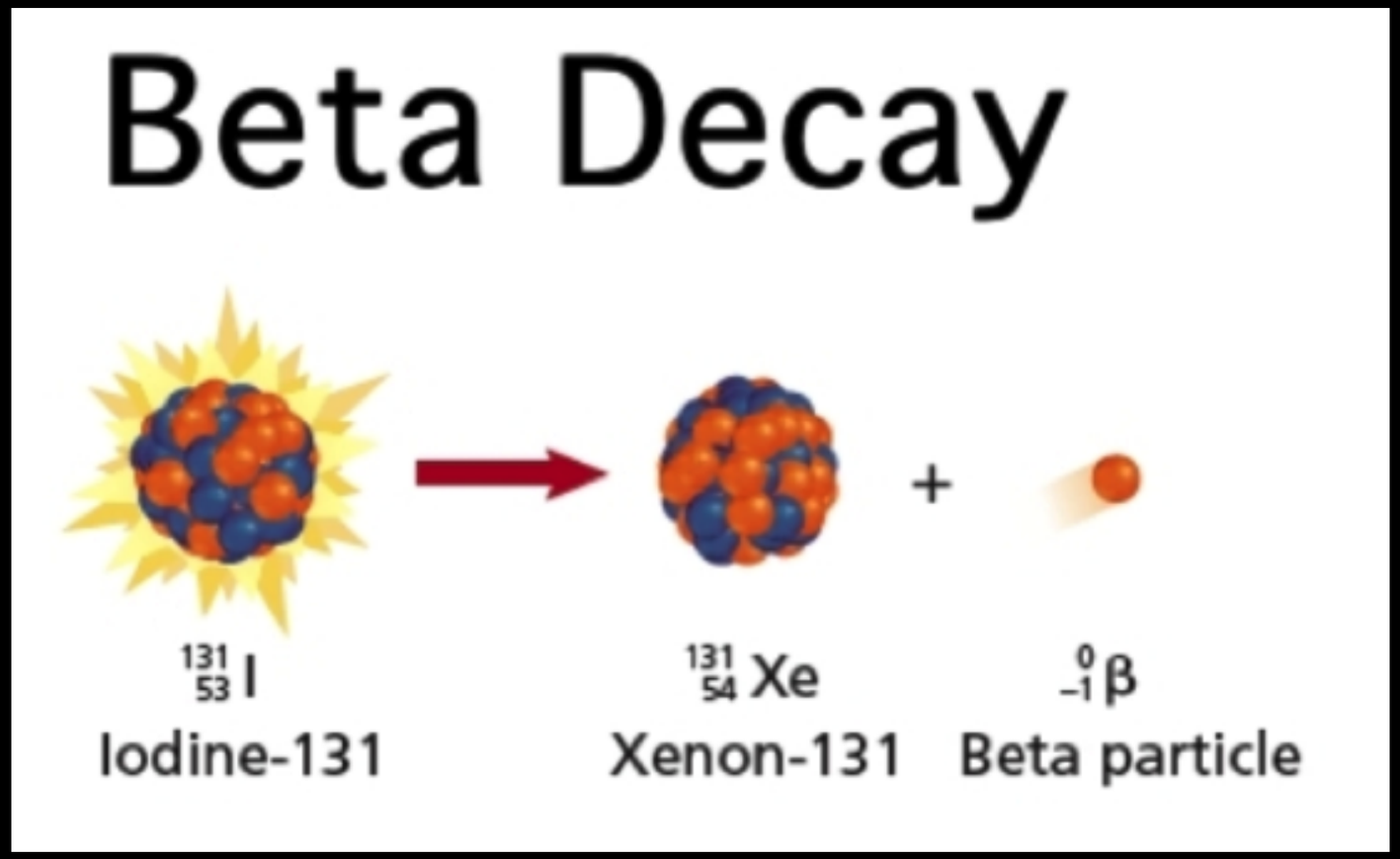


Unstable nuclei will undergo "nuclear decay," where the nucleus of an atom undergoes a change.

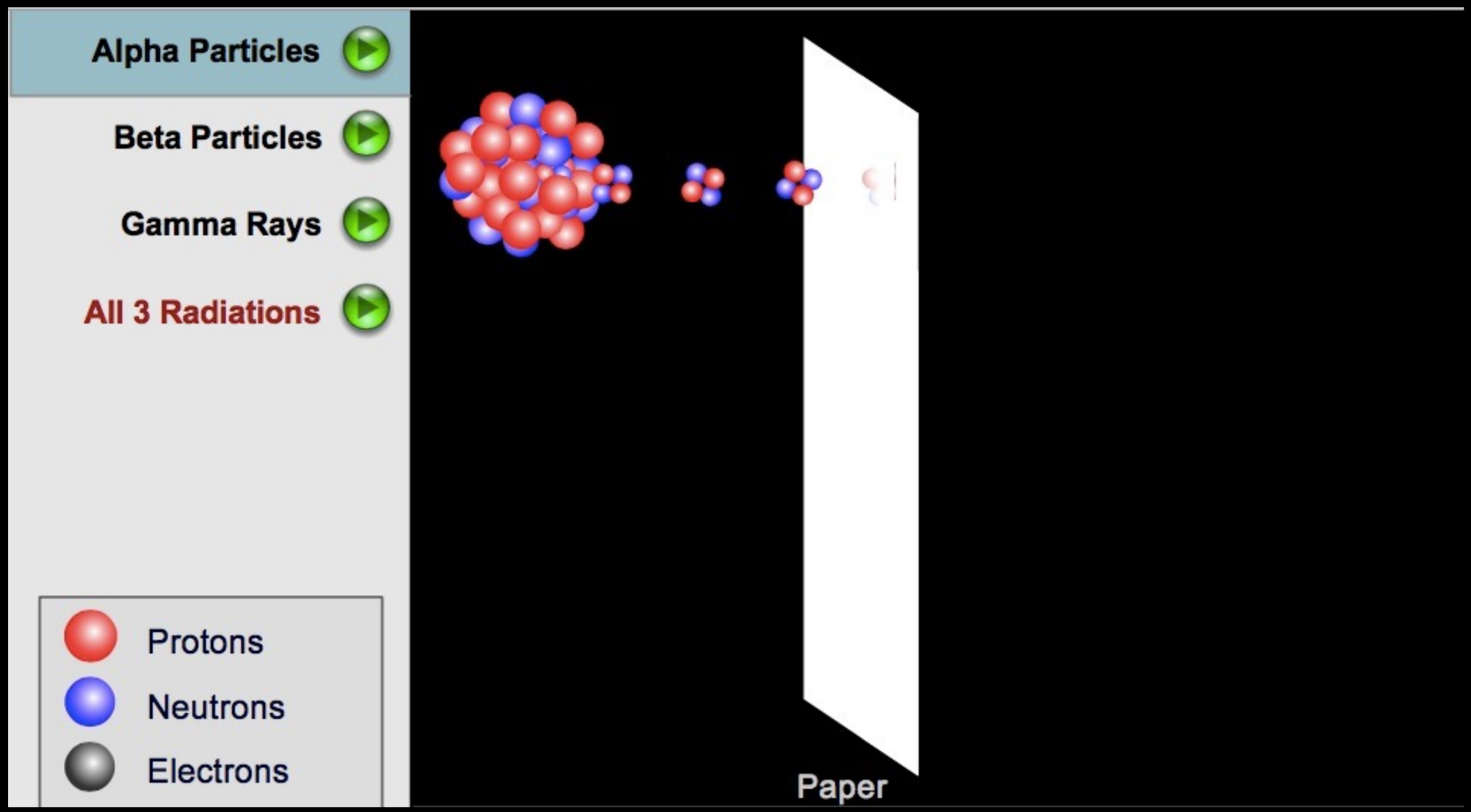
There are two types of nuclear decay:

1. 

2.



Also gamma radiation, which accompanies both alpha and beta decay.

Penetrating power:

1. Alpha particles: stopped by paper
2. Beta particles: stopped by 1-2 mm Al
3. Gamma radiation: stopped by 8-10 cm lead or many meters of concrete.