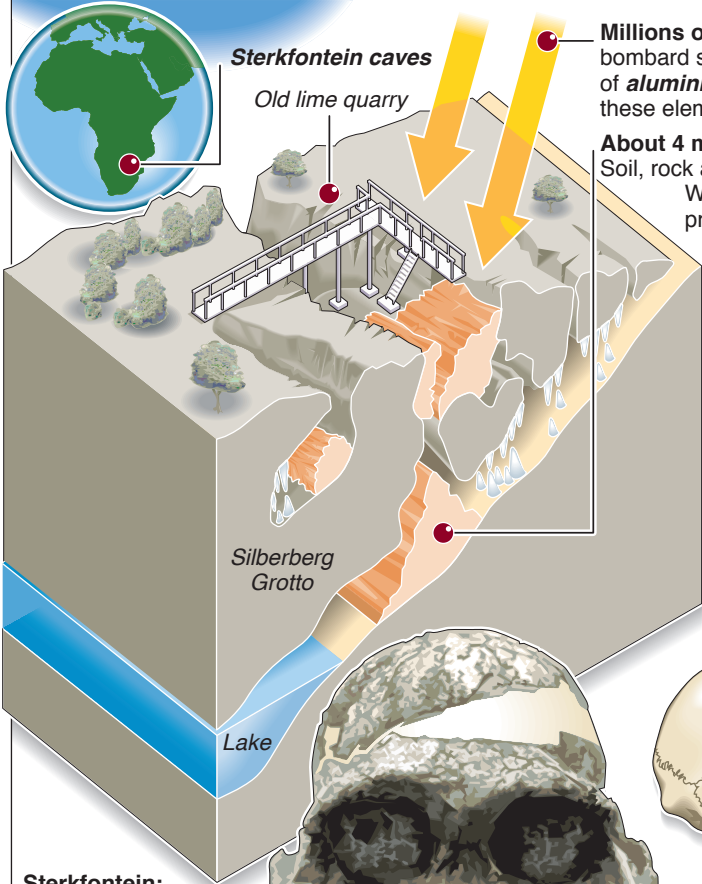


Cut-and-paste conversion:
1.2 metres = 4 feet

Ape-man fossils buried 4 million years ago

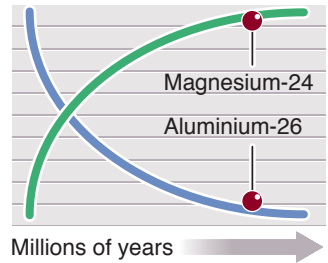
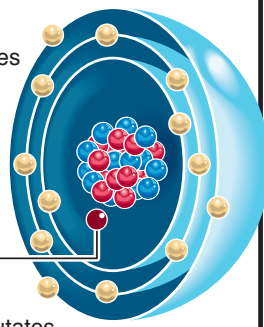
Fossils of *Australopithecus* – a hominid with both human and ape-like features, found in caves in South Africa – may be one million years older than previously thought. The age was determined by measuring the decay of radioactive isotopes in cave sediments in which the fossils were buried



Millions of years ago: Cosmic rays bombard surface rocks forming isotopes of **aluminium-26** and **beryllium-10** – these elements do not occur naturally

About 4 million years ago: Soil, rock and bones fall into caves. When rocks are buried production of isotopes stops

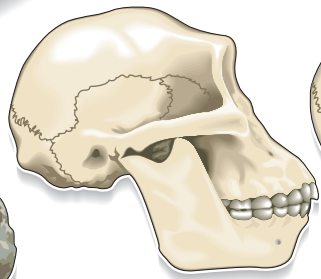
Radioactive decay: Nucleus of aluminium-26 isotope is unstable. Atom spits out radiation and mutates to become lighter, but stable, magnesium



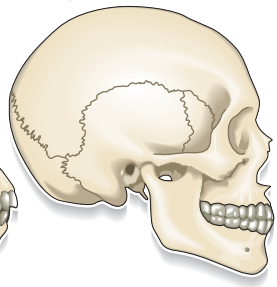
Measuring slow isotope decay indicates how much time has passed since rocks lay near surface

Sterkfontein: More than 500 hominid fossils and 9,000 stone tools have been found

Mrs Ples: *Plesianthropus* – meaning almost human – one of the best-preserved skulls of *Australopithecus africanus* is found by Robert Broom in 1947



Australopithecus africanus: Brain capacity of 380-450 cubic cm is similar to ape, but anatomy of ankle joints shows that hominid was bipedal – able to walk upright. Typical height of 1.2 metres



Homo sapiens: Brain capacity of 1,350 cubic cm. Larger brains of **Homo** – human ancestors – believed to have evolved about 2 million years ago

