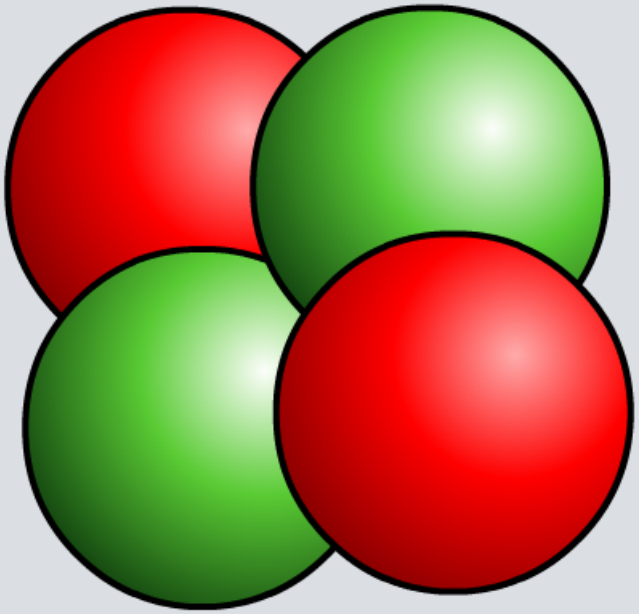
# Radioactivity



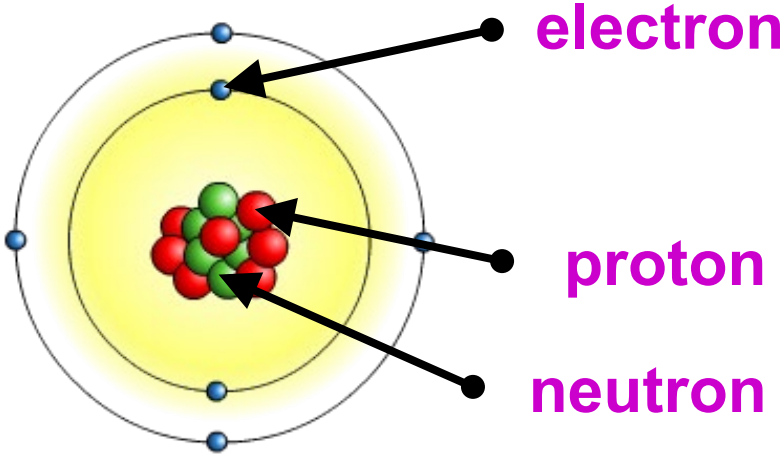
# What do you think of radiation?

# What is ‘radiation’?

The term **radiation** (also known as **nuclear radiation**) refers to the particles or waves emitted by radioactive substances.

Nuclear radiation comes from the nucleus of a radioactive atom.

An atom has electrons orbiting the outside and a central **nucleus**, which is made up of protons and neutrons.



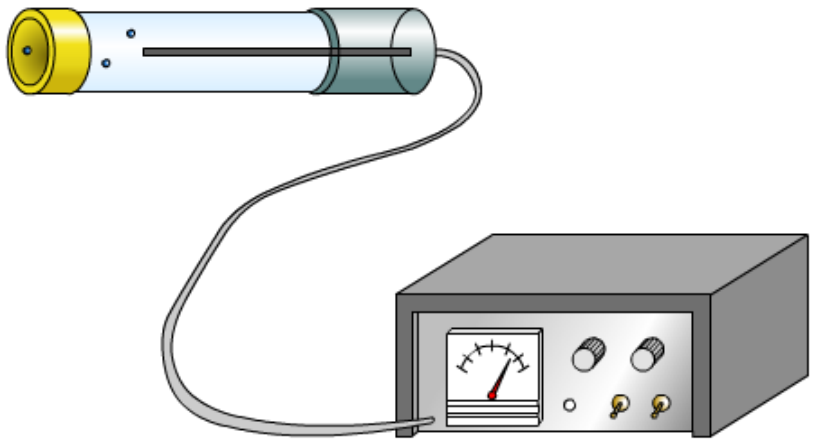

In a radioactive atom the nucleus is unstable, and so it emits particles or waves to form a more stable atom.

This process is called **radioactivity** or **radioactive decay**. It is a natural and completely spontaneous process.

# How can radiation be detected?

Radiation is all around us. It comes from naturally occurring and man-made sources, but it is invisible. How do we actually know it's there?

The effects of radiation can be seen, and so it can be detected using instruments such as a **Geiger-Müller tube**.



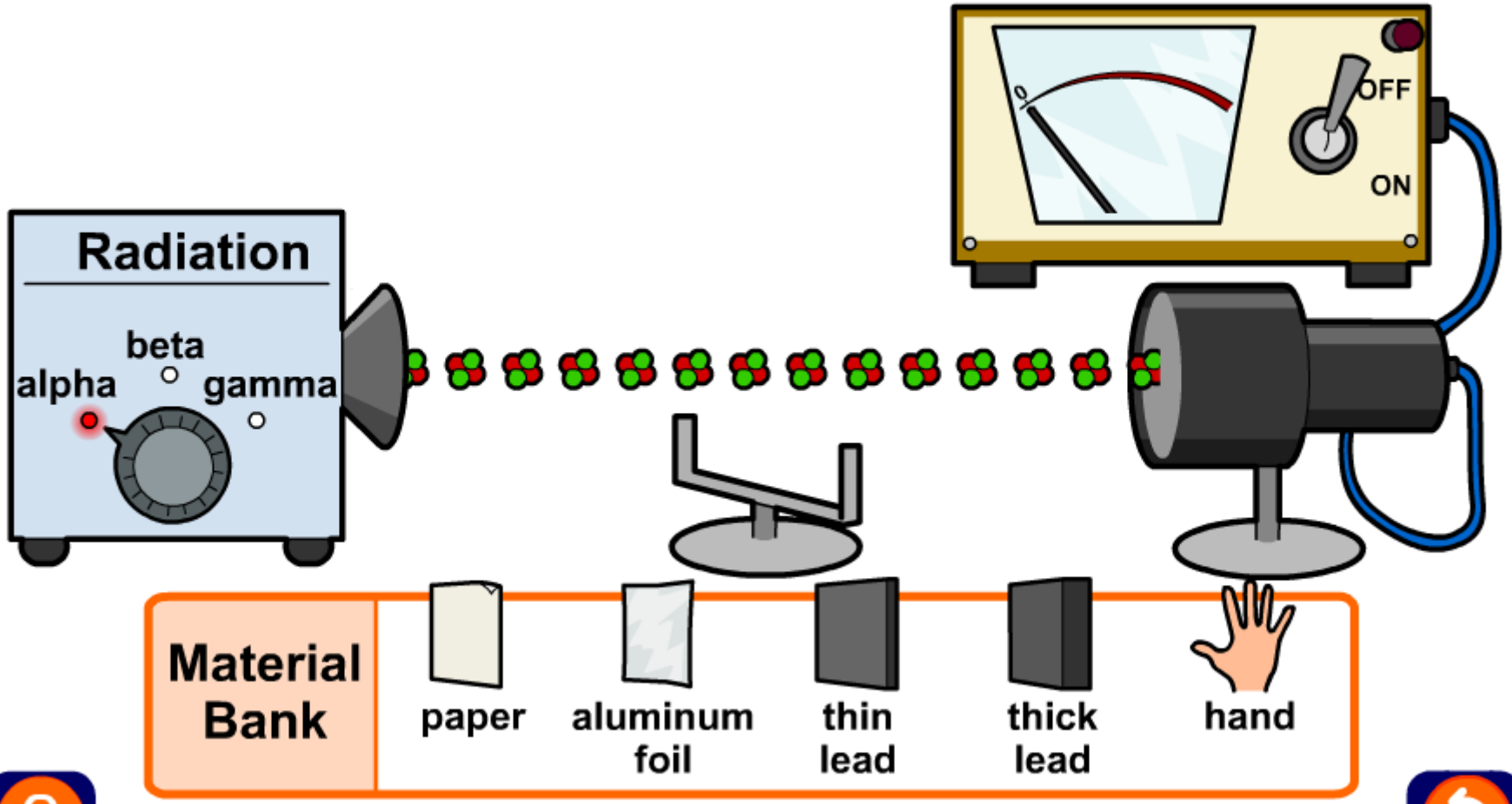
This is a device that can detect and measure radiation.

Radioactivity can also be detected by the presence of photographic film, which darkens when struck by radiation. This effect led to the initial discovery of radioactivity more than one hundred years ago.

# What is radioactive decay?

# How do materials affect radiation?

## Investigate the penetrating power of radiation



# How do magnetic fields affect radiation?