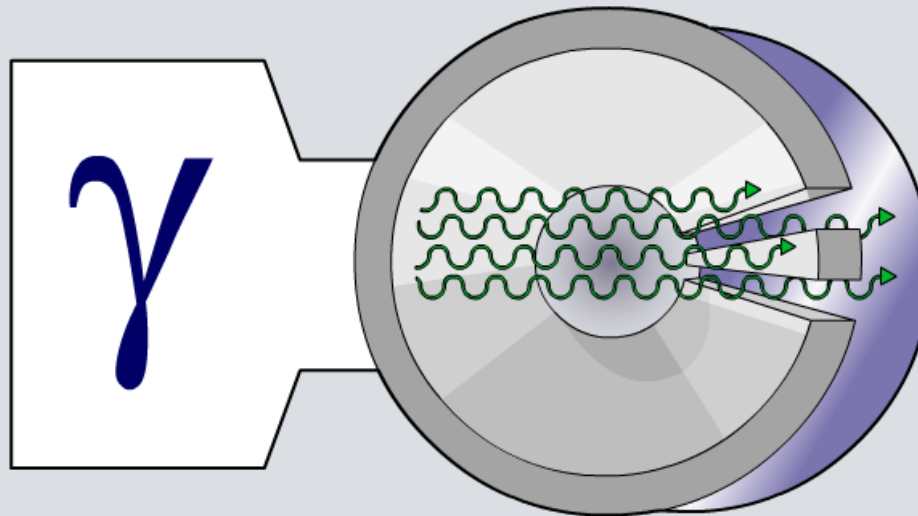


## Uses of Radiation



## What is radiation used for?

Radiation has a surprising number of everyday uses.

How much do you already know about radiation? Click "**start**" to find out.

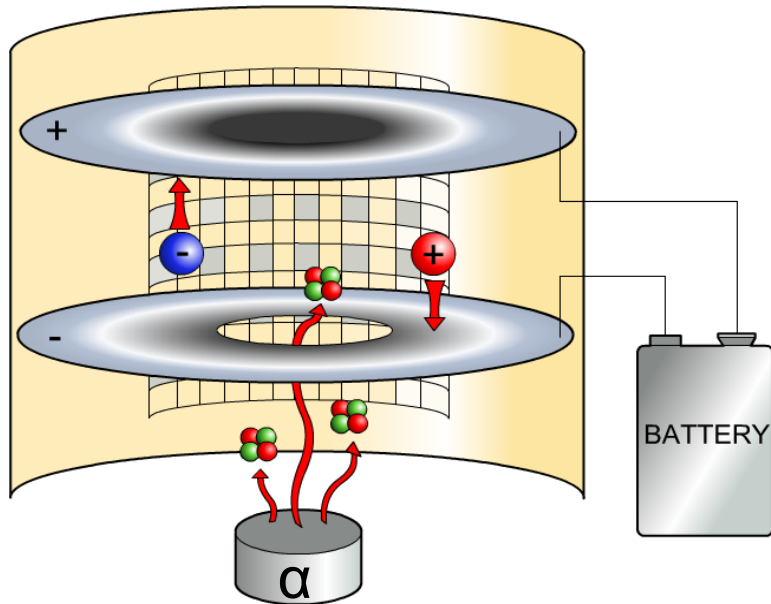
**start**



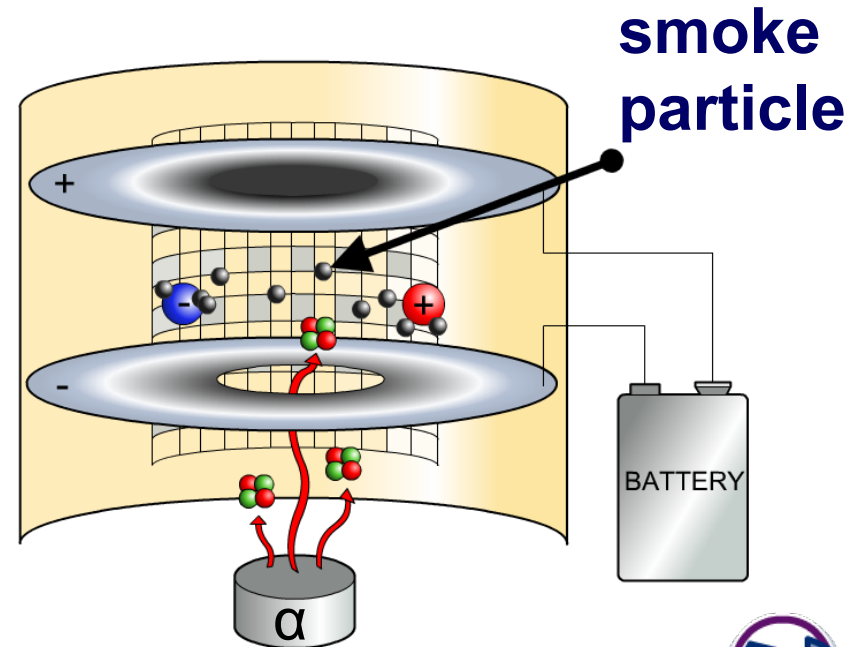
# How can radiation detect a fire?

Smoke detectors contain a weak source of **alpha radiation**.

The alpha particles **ionize** the air.



If there is smoke present, it interacts with the ions produced by the alpha particles and ionization is reduced.



This means that less **current** is flowing through the air, which causes the alarm to sound.

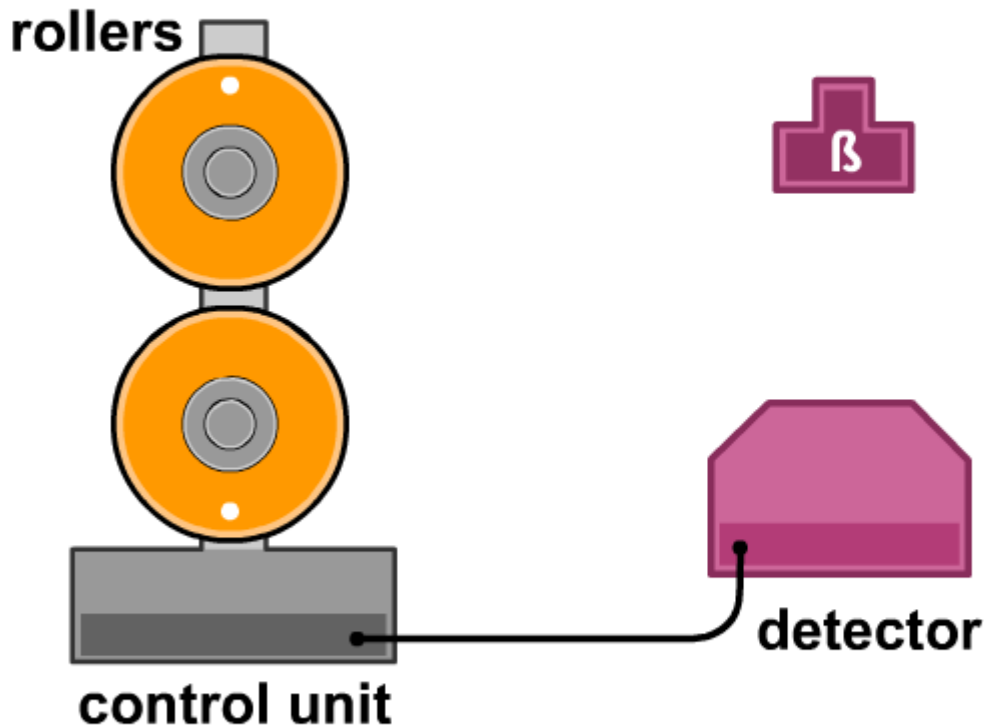


## Using radiation to control paper thickness in a mill

Radiation can be very useful commercially.

One use is to control paper thickness in a paper mill.

Click play to find out how.



# How can radiation find leaks in pipes?



How can you find a leak in an underground pipe without having to dig up the whole pipe?



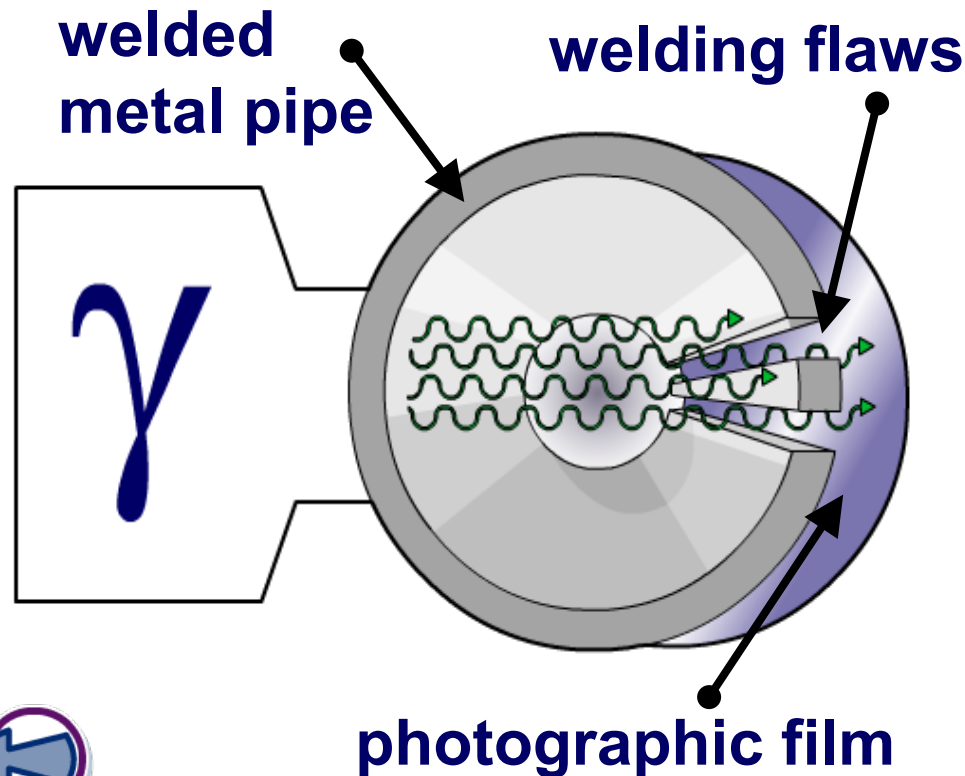
start



# How can radiation detect cracks?

Gamma rays can also be used to detect cracks after an object has been **welded**.

Gamma rays are like **X-rays**.



If a **gamma source** is placed on one side of the welded metal, and a photographic film on the other side, any flaws will show up on the film like an X-ray.



# How is radiation used for sterilization?

Gamma rays are used to kill bacteria, mold and insects in **food**.

This can be done even after the food has been packaged. It can affect the taste, but supermarkets like it because it lengthens the shelf life.



Gamma rays are also used to kill bacteria on **medical equipment**.

It is particularly useful with plastic equipment that would be damaged by heat sterilization.



What type of radiation is used in each of these situations?

alpha

beta

gamma

locating cracks  
in pipes



solve

