

# Radiation, Radioactivity and Radioactive Materials

- Lightbulb = Has the ability to emit light



Light



Lumen (lm) or Watt (W)

► Unit of light bulb brightness

Lux (lx)

► Unit of brightness

- **Radioactive materials** = Have the ability to emit radiation (radioactivity)



Radiation



Becquerel (Bq)

► Unit of radioactivity

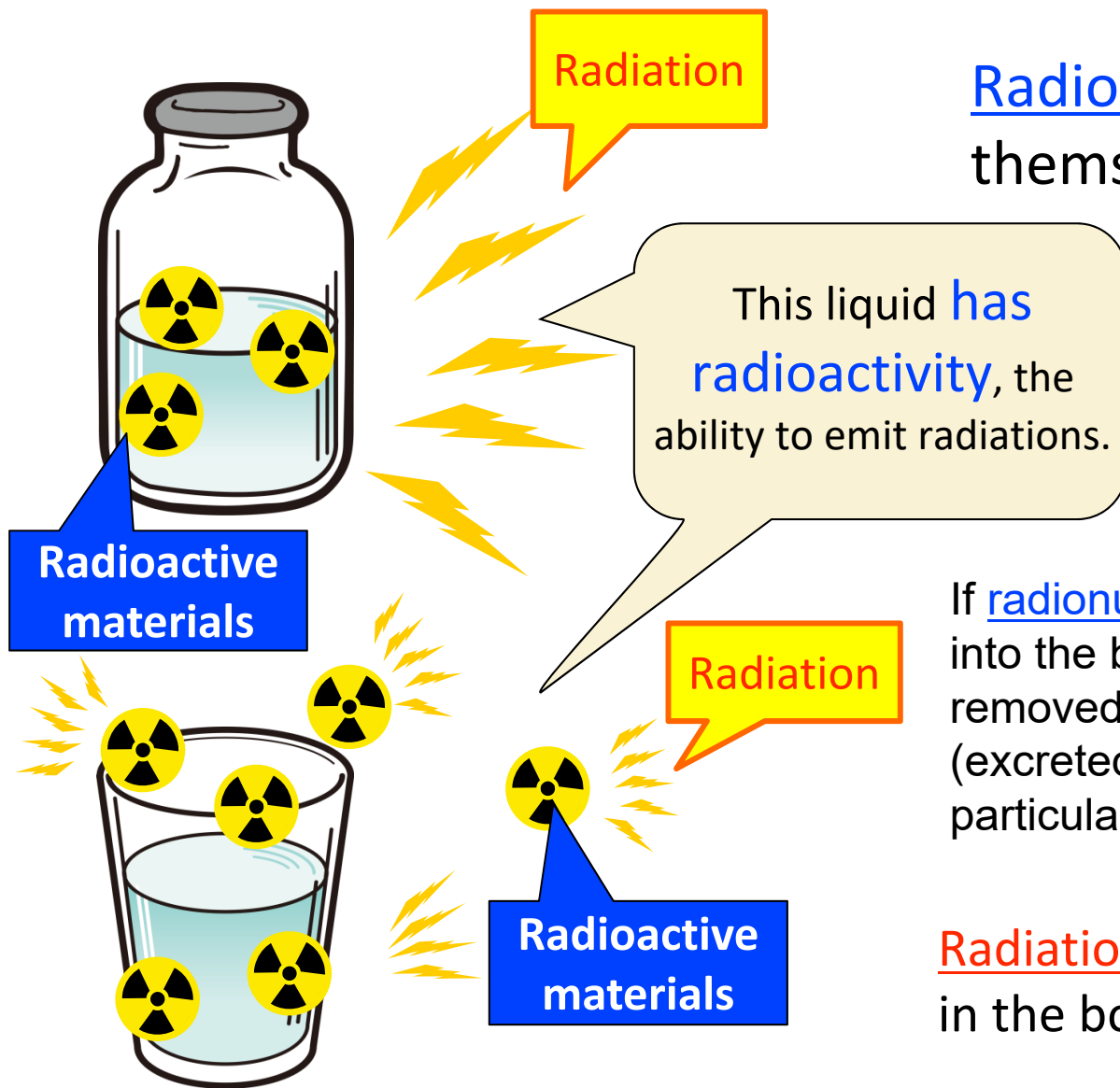
Conversion factor

Sievert (Sv)

► Unit of radiation exposure dose that a person receives

\*Sievert is associated with radiation effects.

# Difference between Radiation and Radioactive Materials

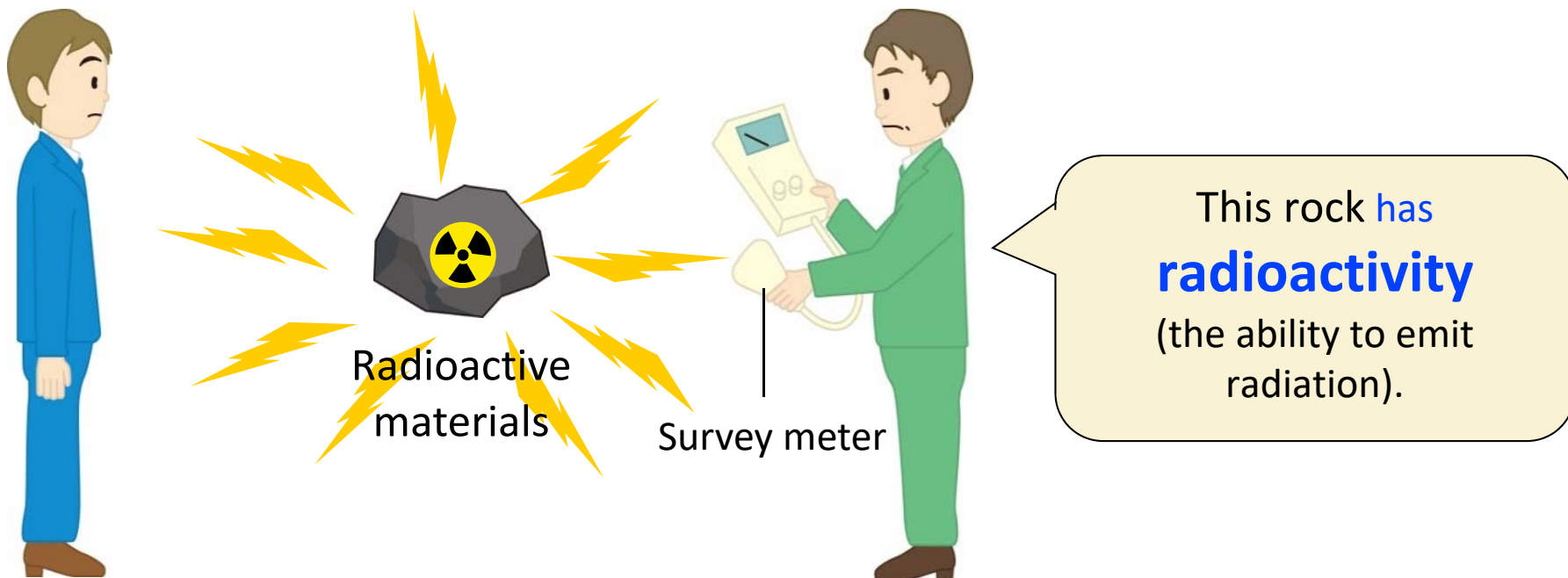


Radioactive materials themselves emit radiation.

If radionuclides are incorporated into the body, they will be partly removed outside the body (excreted) or be transferred to particular organs/tissues.

Radiation itself does not remain in the body.

# Units of Radiation and Radioactivity



## Becquerel (Bq)

Unit for intensity of radiation:  
one nucleus decays (disintegrates) per  
second = 1 becquerel

## Sievert (Sv)

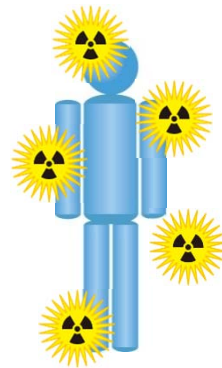
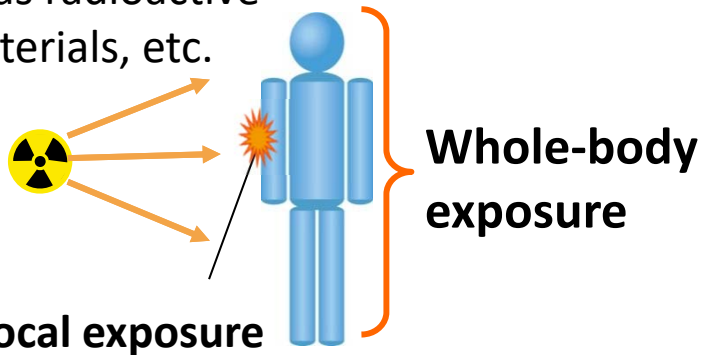
Unit of radiation exposure dose which a  
person receives:  
associated with radiation effects

# Types of Exposure

## External exposure

Exposure due to radiation outside the body

Radiation sources such as radioactive materials, etc.



Body surface contamination

## Internal exposure

Exposure from inside the body

