

Radiation

Obj. 10.4: Identify various sources of radiation exposure.



Radiation Sources

Circle any of the following items that can expose humans to radiation

Water
Airport security scanners
Sunlight
Food
Medical procedures
Air
Nuclear weapons test fallout
Computers
Cell phones
Rocks and soil

DISCUSS

Radiation in the Media

Discuss with a partner the various representations of radiation and its impact on health that you have seen in the media (think about movies, television shows, video games, the news, etc.)

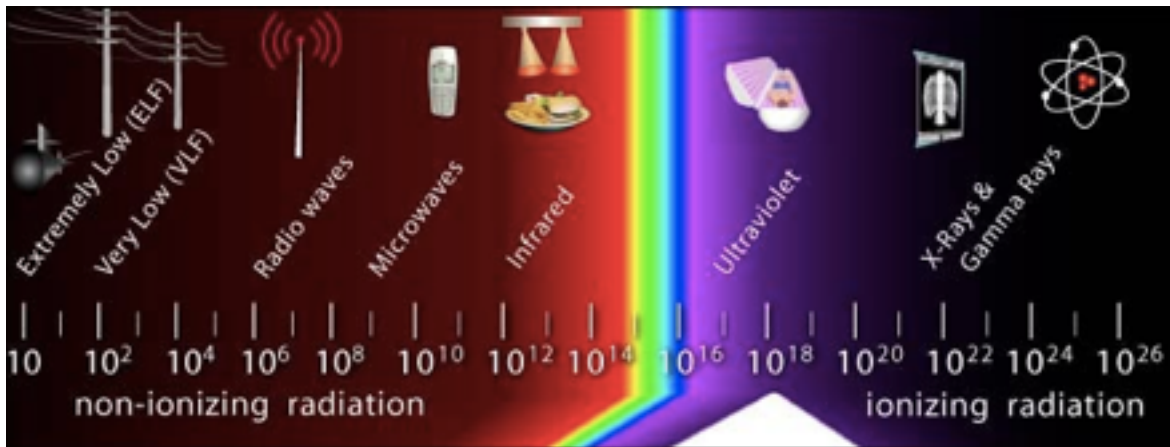
NEW
INFO

Types of Radiation

There are two types of radiation: ionizing and nonionizing. What is the difference?

- Non-ionizing radiation has less energy than ionizing radiation. We use it for common tasks like microwave radiation to heat food, infrared radiation lamps at restaurants to keep food warm, and broadcasting via radio waves.
- The most energetic form of radiation is ionizing radiation. Higher frequency ultraviolet radiation begins to have enough energy to break chemical bonds. It has enough energy to strip off electrons or, in the case of very high-energy radiation, break up the nucleus of atoms. Ionizing radiation is used to generate electric power, treat cancer, take x-rays and disinfect medical instruments.

Examine the picture in order to see the relative strength of each type of radiation.



Radiation Emergencies

Challenge: You are a team of radiation experts working for the government. You must present a strategic plan to prevent and respond to a radiation emergency. You must include clear information about what the radiation emergency is, what the main dangers are, and how people can protect themselves, at the very minimum.

Go to: <http://emergency.cdc.gov/radiation/typesofemergencies.asp>

Read about your assigned radiation emergency on this site, then continue your research on any other credible websites you can find.

Team:

Type of Radiation Emergency:

What is it?

What are the main dangers?

How can people protect themselves?



Present & Learn!

Present your information in a roundtable conference with other experts in the field, taking notes in the table below.

Types of Radiation Emergency	What is it?	What are the main dangers?	How can people protect themselves?
Improvised Nuclear Device & Nuclear Weapons			
Dirty Bomb or Radiological Dispersal Device (RDD)			
Radiological Exposure Device (RED)			
Nuclear Power Plant Accident			
Transportation Accidents			
Workplace Radiation Incidents			



Does Cell Phone Use Lead to Cancer?

Research this question and write a 1-3 paragraph response based on the evidence you find.