

Elements and the Periodic Table ▪ *Enrich*

Radon Gas

Radon is a radioactive element that is formed from the radioactive decay of uranium-238. Radon-222 is the most common isotope of this element. Its half-life is 3.8 days. Radon is a colorless, odorless, tasteless gas.

Because uranium-238 is fairly rare, so is radon gas. Uranium-238 is found under Earth's surface in some types of rocks. When radon is formed, it tends to rise up to the surface. Because radon is much more dense than air, it tends to stay very close to the ground. As a result, it sometimes builds up in the lower levels of houses, especially in underground areas such as basements.

Being exposed to high levels of radon gas over a period of time can increase a person's chances of developing lung cancer. The level of radon gas in a home can be measured with a testing kit. If radon is found, there are several methods of preventing more of it from entering a house. One method is called *soil suction*. Soil suction involves pulling the radon gas from the soil below the house and into a pipe. The pipe releases the gas away from the house. Other methods involve increasing the movement of fresh air through the house or sealing cracks through which radon gas can enter.

1. If there is almost no uranium in the area where someone lives, should that person be concerned about radon gas in his or her home? Why or why not?
2. Should someone who lives on the sixth floor of an apartment building be concerned about radon in his or her apartment? Why or why not?
3. Do you think radon would be more of a health hazard if it were a solid instead of a gas? Explain.
4. The diagram below shows how uranium-238 decays to radon-222. For each step in this process, fill in the blank to indicate whether an alpha particle or a beta particle is produced. The first step has been done for you.

