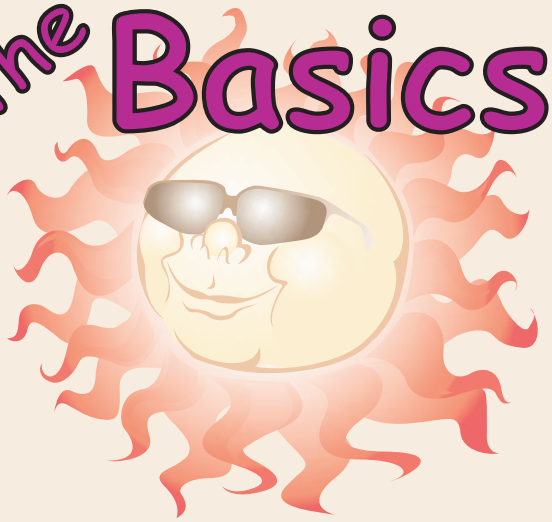
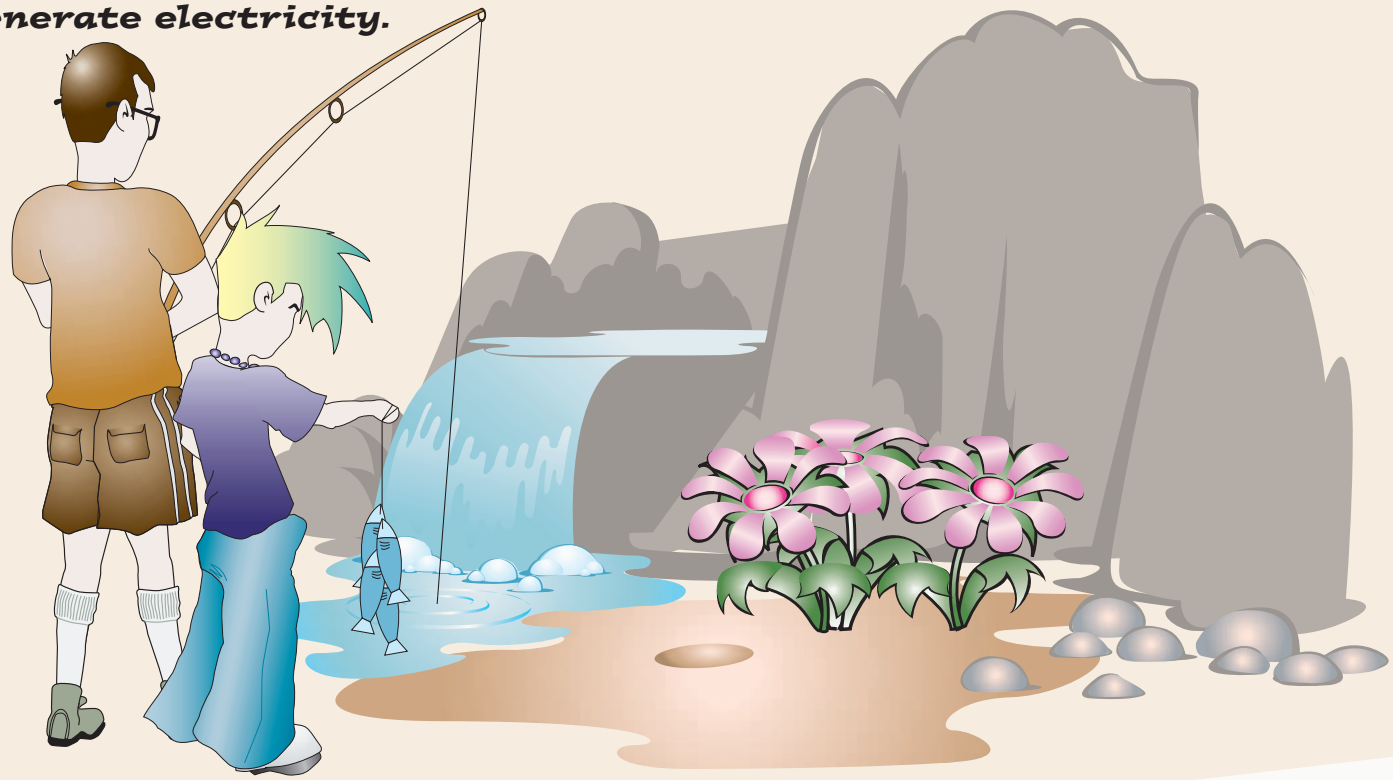
Radiation the Basics



What is radiation?

In its simplest terms, radiation is energy from atoms, travelling through space as waves or particles. It occurs throughout nature. Science has allowed humanity to understand radiation and to use it safely in hospitals, industries, and even in our homes. It is also used to generate electricity.

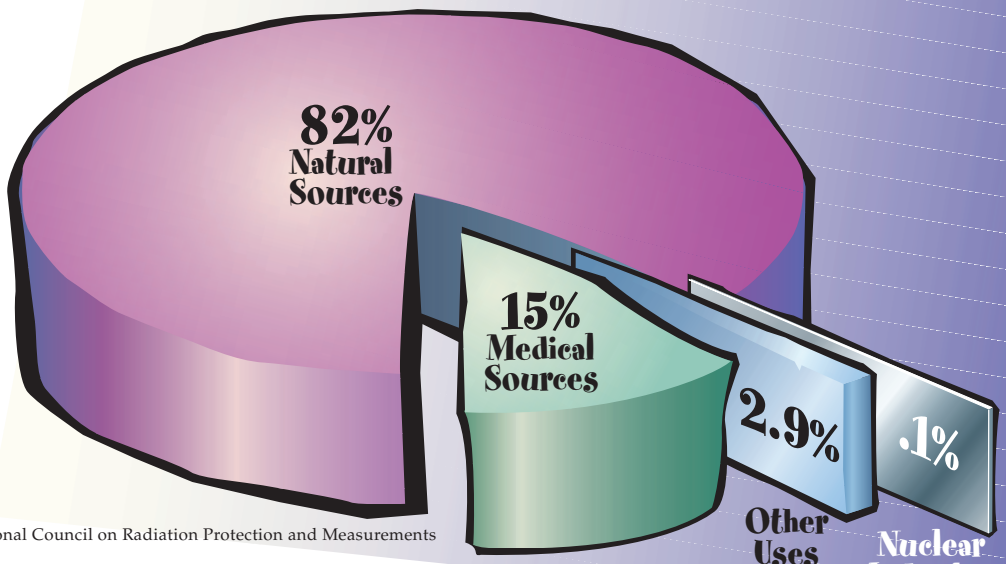


People have evolved through generations surrounded by "background radiation" in air, water, food, rock and soil. The water we drink, the food we eat, the air we breathe – all contain radioactive elements occurring naturally. Radiation called "cosmic rays", continually showers us from outer space. For this reason, we are exposed to more natural radiation at higher altitudes, where the atmosphere is less dense, than we are at sea level. A coast-to-coast flight in an airplane exposes passengers to at least 50 times the radiation they would receive from living for one year within 30 kilometres of a nuclear generating station.

Canada

AECL Atomic Energy of Canada Limited
EACL Énergie atomique du Canada limitée

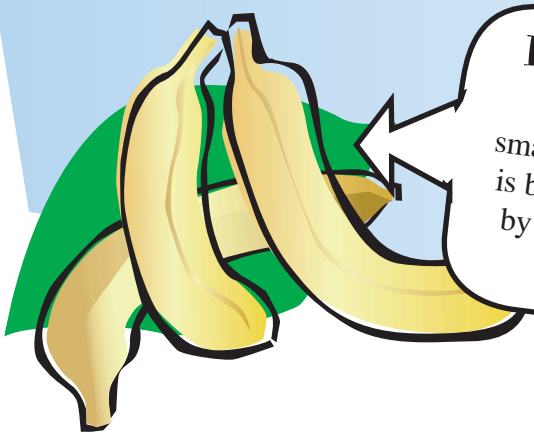
Sources of Radiation



Source: U.S. National Council on Radiation Protection and Measurements

Radiation is all around us, but we can manage its risks. Three factors determine the level of risk: shielding (natural or man-made) against the radiation; our distance from the source; and the amount of time exposed to radiation.

Experts throughout the world agree that dosage, or the amount of exposure to radiation, is key to understanding its risk. In essence, the higher and more prolonged the dose, the greater the risk.



Did you know that we are all naturally radioactive?

It's true! Some of the foods we eat and the water we drink contain small amounts of naturally radioactive materials. One common example is bananas, which contain Potassium-40, an important mineral required by our bodies. Other examples include nuts, water, milk and a host of other vegetables we consume every day.

Fortunately, scientists know more about radiation and its properties than about most other physical and chemical agents in our environment. As a result, strict controls are in place to measure and control man-made radiation, and to limit risk to people and the environment. In Canada, we have an independent agency, the Canadian Nuclear Safety Commission (CNSC), which regulates nuclear energy and materials to protect health, safety, security and the environment.

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