

Nuclear Energy

Nuclear Power: Risks and Benefits

Nuclear Safety

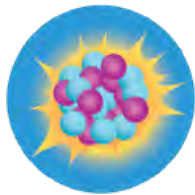
The following activities will encourage you to think about the health concerns that result from harnessing nuclear power, how these dangers can be effectively communicated, and what history has taught us about nuclear safety.

1. The following table includes a list of products that can result from the fission of nuclear fuel or its reprocessing. Such products are unstable and prone to a process similar to fission called nuclear decay. The result is radiation that is potentially harmful to life. Some of the products decay at faster rates than others. The time it takes for half of a radioactive material to decay is called its half-life.

Research the half-life of each isotope to complete the table.

Isotope	Approximate half-life
Xenon-135	
Cesium-137	
Strontium-90	
Plutonium-239	
Technetium-99	





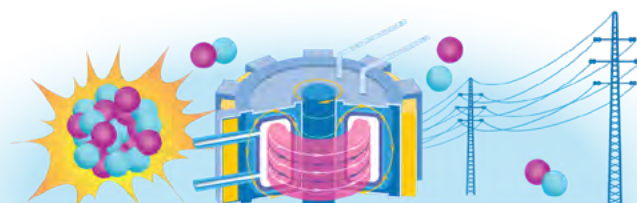
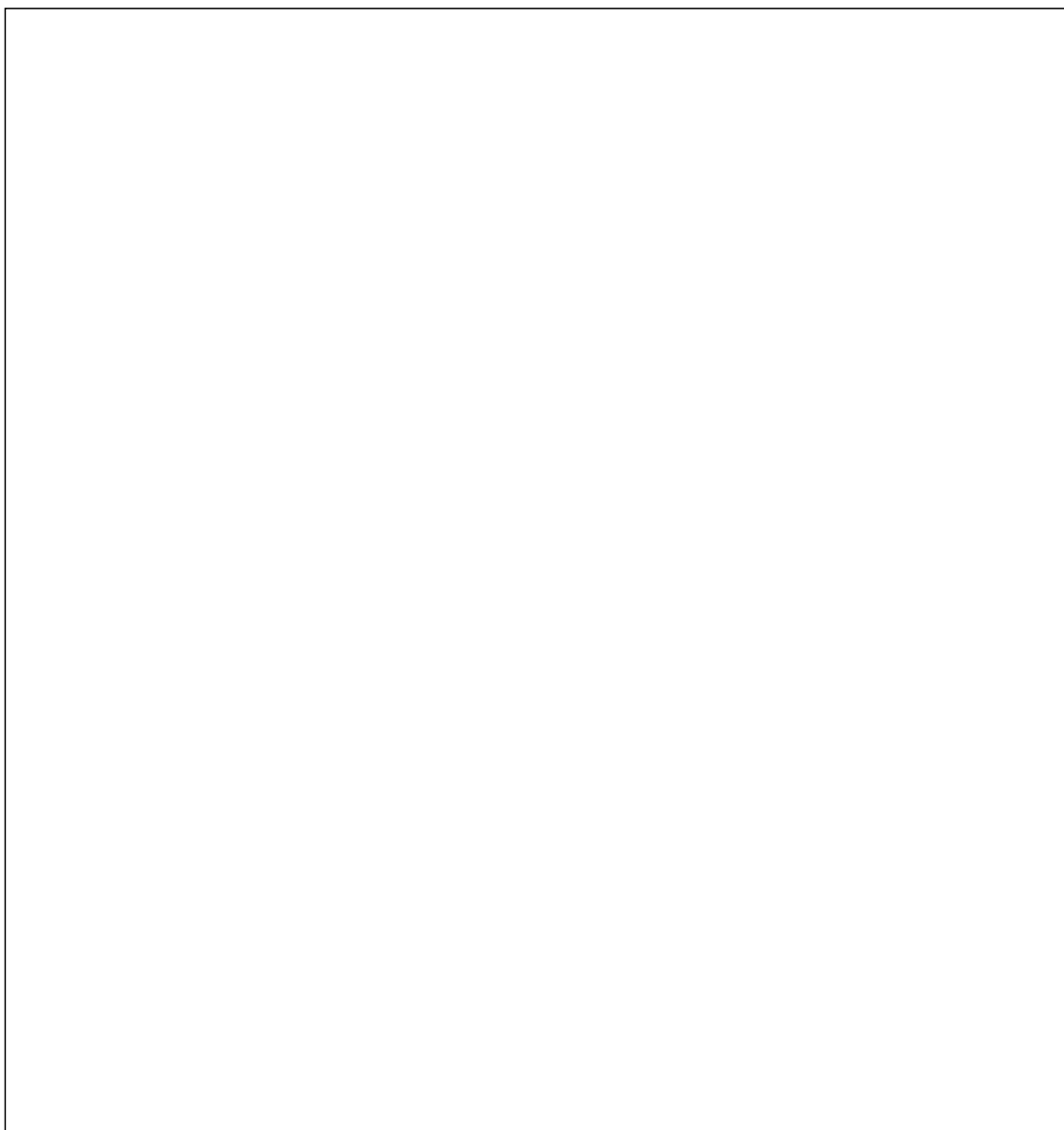
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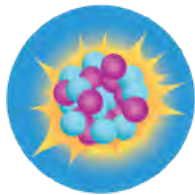
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2. High-level radioactive waste can contain isotopes that take centuries to millennia to decay to a relatively safe level. Although this waste could be stored in a safe place, visitors far in the future would still need to keep clear.

Draw or attach a “danger” or “keep out” sign that could be interpreted by any curious visitor to a nuclear waste facility thousands of years from now who has no experience of our time or, potentially, our language.





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3. In 1986, the Chernobyl nuclear power station, in what was then the Soviet Ukraine, famously suffered a disastrous meltdown. Research the events that caused the meltdown and what transpired in its aftermath. Use this research to construct a timeline of significant events, from prior to the catastrophe to modern times.

