

Student directions [Radioactive Dating Game](#) activity

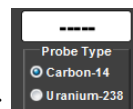
Learning Goals: Students will be able to:

- Identify isotopes that are commonly used to determine how old matter might be.
- Explain how radiometric dating works and why different elements are used for dating different objects.
- Use the percent of an isotope measured in an object to estimate its age.
- Identify types of nuclear reaction used for dating; include how elements change and balanced reaction.

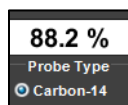
Directions:

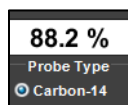
1. Explore [Radioactive Dating Game](#) . Try all the tabs to figure out why there is more than one element used to estimate how old things might be.
2. What elements' isotopes are used to estimate how old something is? Why do scientists use more than one type? (Be specific, it is not just to get repeated results)


3. Pretend you are a scientist and have a tool like the one on **Dating Game** tab:



- a. How do you decide which to use: Carbon-14 or Uranium-238?



- b. How does the percentage  help you estimate the age?

- c. If you can't get a reading on one object like the fish fossil  , what else can you try? Determine the approximate age of the fish fossil and explain what you did to estimate the fossil age.

4. If you were a forensic scientist and found a dead buried body, could you use one of the isotopes in the simulation to figure out how long ago the person died? Explain.
5. What type of reaction do Carbon -14 and Uranium- 238 undergo? Explain how you figured this out and write the reaction for each.