P.13 Half Life Analogy

Purpose:

✔ To use a string of licorice as an analogy of radioactive decay.

✔ To show graphically how the length of licorice changes with each half-life.

Materials:

one string of licorice
one meter stick

Procedure:

1. Prepare a data chart with two headings: *Number of Half-Lives* and *Length of Licorice (cm)*.

2. Obtain a string of licorice. Measure the string to the nearest 0.1 cm. Record the length.

3. Fold the licorice in half. Eat one half and measure the other half to the nearest 0.1 cm. Record the length.

4. Repeat step 3 as many times as possible.

5. Graph your data.

Questions:

1. Radioisotopes are considered to be safe after decaying for 10 half-lives. Were you able to "decay" your licorice to a safe level? Explain.

2. Using the half-life equation, what length of licorice would be left after 10 half-lives if you started initially with 100.0 cm of licorice?