FLINN SCIENTIFIC

Name_____

Carbon Dating Activity Worksheet

Discussion Questions

1. How and where is carbon-14 produced?

2. How is carbon-14 different from carbon-12? Give two differences.

3. If more and more C-14 is constantly being produced, why doesn't its concentration in the atmosphere keep increasing?

4. Explain the "cup" analogy used in the puzzle (Part I).

5. Explain the pathway by which C-14 is incorporated into our bodies.

6. If we are constantly taking in more and more C-14, why doesn't its concentration in our bodies keep increasing?

7. As far as C-14 is concerned, what is the significance of death?

8. For each of the following, decide whether or not C-14 dating could be used (Answer **Yes** or **No**).
   ___ To determine the age of a wooden axe handle believed to be 10,000–13,000 years old.
   ___ To determine the age of the oldest living pine tree believed to be 5,000–10,000 years old.
   ___ To determine the age of an animal skin believed to be 3,000–4,000 years old.
   ___ To verify the age of a man claimed to be 6,493 years old.
   ___ To determine the time of death of a murder victim who was found last Tuesday.
   ___ To determine the age of a wooden spear, believed to be 100,000–120,000 years old.
9. If a newly cut piece of wood gives a Geiger tube reading of 124 cpm (counts per minute) and a artifact from the same type of wood gives a reading of 31 cpm, how old is the artifact?

10. C-14 is not the only isotope used for radioactive dating. List some others and explain why they might be better suited in some cases. *Hint:* Consult reference sources.

11. In the puzzle, the spear is labeled 5200 B.C. Show the exact math that gives this number.