Name: _____

Nuclear Website Worksheet #1

This activity acts as either a review of, or an introduction to, some of the information that we are learning about nuclear chemistry.

Link #1 http://www.mhhe.com/physsci/chemistry/essentialchemistry/flash/radioa7.swf

Watch the animations and answer these questions.

1. What type of radiation does Carbon-14 emit?
2. What kind of radiation does Rn-222 emit?
3. What is the mass and charge of an alpha particle?

Link #2 http://lectureonline.cl.msu.edu/%7Emmp/applist/decay/decay.htm

Read the directions and play around with the half-life simulation. The abbreviation for half-life is t.

4. Adjust the half-life of the radioactive atom to 20 seconds and watch the simulation. Now change the half-life to 80 seconds. How does changing the half-life affect the simulation?

Link #3 http://www.visionlearning.com/library/flash_viewer.php?oid=2391&mid=59

5. How is a fission reaction started?

6. How many neutrons are released when a U-235 atom splits?

Link #4: http://www.visionlearning.com/library/flash_viewer.php?oid=3602&mid=59

Click on the links for controlled and uncontrolled nuclear chain reactions.

7. In a controlled nuclear reaction, what material is used to make control rods?

8. How do control rods work?

9. How is an uncontrolled reaction different from a controlled reaction?

Link #5: http://lectureonline.cl.msu.edu/%7Emmp/applist/chain/chain.htm

10. Is this a simulation of a controlled or an uncontrolled fission reaction? Why?

11. What do the red dots represent? Why are they significant?

Link #6 http://library.thinkquest.org/17940/texts/fission/fission.html

Read this page and watch the animations.

12. Explain why the "bullet" used to split the atom must be electrically neutral.

13. What is a fissile isotope?

Link #7 http://www.visionlearning.com/library/flash_viewer.php?oid=2747&mid=59

14. What are the names of the two isotopes of hydrogen that are joined in fusion?

15. What techniques are used to raise the temperature of the hydrogen in the fusion reactor?