

Nuclear Unit: Part I Objectives Checklist

My action plan to help me improve my learning includes:

- ✘ Use this checklist as your personal guide to assess your level of readiness for quizzes and the unit test.
- ✘ Circle the descriptor that best describes how you feel about your mastery of each objective.
- ✘ NOTE: IF IT IS NOT A ☺, YOU PROBABLY ARE NOT READY FOR THE QUIZ/TEST!!!!

☺ = I get it ? = I need more practice/review ! = I need to get help

I feel confident that I... (*An asterisk indicates an overarching theme from a past unit!*)

During Unit Before Test

☺	?	!		☺	?	!	1. Can explain the experiments (and the scientists who performed them) that led to the discovery of the nuclear radiation.
☺	?	!		☺	?	!	2. Understand and define nuclear radiation, ionizing radiation and non-ionizing radiation.
☺	?	!		☺	?	!	3. Understand Rutherford's experiment that concluded the existence of alpha, beta and gamma rays.
☺	?	!		☺	?	!	4. Can explain the difference between alpha, beta and gamma rays.
☺	?	!		☺	?	!	5. Can explain the atomic theory by listing the scientists in order (NO dates needed), the experiment they performed, and the conclusions drawn (including a picture of the model of the atom they proposed).
☺	?	!		☺	?	!	6. Can explain in detail Rutherford's gold foil experiment with the conclusions he drew from the results.
☺	?	!		☺	?	!	7. Can identify the parts of the atom, their properties and their location in the atom.
☺	?	!		☺	?	!	8. Can define isotope; can write and interpret notations for isotopes.
☺	?	!		☺	?	!	9. Can define and list various forms of background radiation.
☺	?	!		☺	?	!	10. Understand the effects of ionizing radiation on living material and the factors that determine the extent of biological damage.
☺	?	!		☺	?	!	11. Understand how radon gets into a home/building and its negative effects.
☺	?	!		☺	?	!	12. Understand the basic process by which any radiation detector works.
☺	?	!		☺	?	!	13. Can explain how to protect/prevent oneself from exposure to ionizing radiation.
☺	?	!		☺	?	!	14. Can describe the specific particles/energy released by alpha, beta and gamma radiation and understand the properties of each.
☺	?	!		☺	?	!	15. Can write equations for alpha decay, beta decay and gamma radiation.
☺	?	!		☺	?	!	16. Can write equations for artificial transmutation reactions.
☺	?	!		☺	?	!	17. Understand half-life and be able to perform calculations involving half-life
☺	?	!		☺	?	!	18. Understand how radioisotopes can be used as tracers and irradiators in medicine.
☺	?	!		☺	?	!	19. Understand and distinguish between nuclear fission and nuclear fusion
☺	?	!		☺	?	!	20. Understand how a nuclear power plant works
☺	?	!		☺	?	!	21. Know the facts of the nuclear accidents at Chernobyl and Three Mile Island

- ✘ What study skills did you USE to move from ? or ! to ☺ while studying for the test.

I have carefully self-assessed my work during this unit and have taken steps to get my questions answered before the quiz/test.

Student Signature: _____

Parent Signature: _____

Date: _____