

Test Review Sheet

The test will be given on Wednesday October 31, and will include all of the topics from chapter 3 (Atomic Structure). You are allowed to use one $8\frac{1}{2}'' \times 11''$ “cheat sheet” (both sides), which must be turned in with your test.

You should be able to answer the following:

- Match the names of scientists with their contributions to the theory of the atom:
 - Democritus
 - John Dalton
 - J.J. Thompson
 - Robert Millikan
 - Lord Kelvin
 - Ernest Rutherford
- List the 5 major points of Dalton’s atomic theory.
- Describe Robert Millikan’s oil drop experiment and what he learned from it.
- Describe Rutherford’s gold foil experiment and what he learned from it.
- Understand the major subatomic particles (proton, neutron, electron), including their charges, masses, and where they’re found within the atom.
- Be able to do problems like the *Isotopes* worksheet.
- Be able to calculate the average atomic mass of an element from percent abundance data. (*Average Atomic Mass* worksheet)
- Understand that protons and neutrons are made of three quarks each, and based on the number and charge of the “up” and “down” flavored quarks, why protons have a +1 charge and neutrons have no charge.
- Understand that the strong force holds the quarks together in the nucleus. The weak forces changes the spin on a quark, which causes radioactive decay.
- Know the three major types of radioactive decay: alpha (α) particles, beta-minus (β^-) particles, and gamma (γ) rays.
- Be able to solve radioactive decay equations like the ones in the *Radioactive Decay* worksheet.