Review Sheet for Nuclear Processes Test

- **Define isotopes and give some examples. Be able to calculate the average atomic mass of isotopes. Recognize that they are unstable (radioactive)**

- **Differentiate between alpha, beta and gamma radiation. What are they made of? What charge do they have? Which is the most dangerous? What can protect you from each type of radiation?**

**-List some natural and man-made sources of radiation**

**-Describe how exposure to radiation can affect the body (you cannot just say someone will die)**

**-Calculate the half-lives of substances. Use half-life information to determine the age of rocks and fossils**

**-Use radioactive decay graphs to estimate the amount of parent isotope (original isotope) or daughter product (decay product) that would exist at certain half-lives (times)**

**-Use your knowledge of alpha and beta radiation to determine which decay product would be produced if an alpha particle was lost or a beta particle was lost.**

**For example - If** 90Th232 emits an alpha particle, what is the daughter/decay product?

 What if it emits a Beta particle?

- **Differentiate between fission and fusion – How are they different?**

**-Relate nuclear processes to the sun’s energy and light. What two gases are found in the sun? Does the sun do fission or fusion to create energy? What happens to create this light energy?**

**- Realize that light energy (UV, Infrared and Visible) from the sun can be converted into heat (thermal) energy and electricity.**

**-Recognize that nuclear reactor cores at nuclear power plants use fission to generate electricity.**

**-Recognize that in nuclear reactions the energy is conserved (neither created nor destroyed) – Law of Conservation of Energy.**

**-Mass is also conserved (Law of Conservation of mass)**