Name_____
Period_____

Picture Guide Chp. 4

Instructions: Draw a picture of <u>each</u> item, even if you give an explanation.

1. **Know the difference between:**

<u>Alpha</u>	**<u>Beta</u>**	**<u>Gamma</u>**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. **There is a lot more energy that comes from nuclear reactions (deals with protons and neutrons) than chemical reactions (deals with electrons).**

3. **Know the difference between the two forces.**

Attractive	**Repulsive**

4. **The nucleus can become unstable if the nucleus is large. Too many neutrons can make the atom unstable because they will change into protons and electrons. Neutrons need to be near a proton to be stable.**

5. **Define half-life and understand what is happening in half-life graphs and decay (half-life) problems. Be able to interpret half-life graphs.**

6. **The shorter the half-life, the greater radioactivity an element has.**

7. **Know how scientists date organisms that were once living. Know the difference between C-12 and C-14.**

8. **Compare risks and benefits of nuclear power (fission).**

9. **Mass can be converted into big time energy.**

10. Know the differences between:

Fission	**Fusion**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

11. You are an archeologist and find that a certain radioactive element has a half-life of 1000 years. If you start with a 150 gram sample of the element, how much is left after 5000 years? How much has transmuted into another element? Show your work using a table as well making a graph with the data.