

Name _____

Honors Chemistry

An Alien Periodic Table

Background

The Earth has made radio contact with intelligent life on another planet. An exchange of information has begun. The elements on their planet are the same as the elements that make up the Earth. However, the inhabitants of the alien planet have different names and symbols for them. Since the alien scientists do not know the names of our elements, they have radioed the following data on the known properties of the elements. They have not yet radioed the information on transition elements or lanthanides or actinides series, only main group elements up to atomic number of 54. Your job is to determine which element is which, then write the alien element symbols in the periodic table below.

Fill in the periodic table with **their** symbols.

1							18	
	2		13	14	15	16	17	

Their data is as follows:

1. The most reactive metal on the planet is Xtalt (X). The most reactive nonmetal is called boomium (Bm). The lightest element on the planet is called pfsst (Pf) and the heaviest element is called rados (Rd).
2. The Noble gases are Rombal (Ro), Crobble (Cr), jeptum (J), Rados (Rd) and logon (L). Jeptum (J) is noble gas but does not have 8 valence electrons. The outside energy level of logon (L) is in the second energy level. Of these noble gases, Crobble (Cr) has the second greatest atomic mass, rados (Rd) has the greatest atomic mass.

3. The alkali metals are xtalt (X), byyou (By), Chow (Ch), and quackzil (Qk). Of these chow (Ch) has the lowest atomic mass. Quackzil (Qk) is in the same period as Crobble (Cr).
4. The halogens are boomium (Bm), vulcania (V), Magmania (Ma) and kratt (Kt). kratt (Kt) is in the same period as quackzil (Qk) and Crobble (Cr). Magmania (Ma) has the most protons.
5. The metalloids are ernst (E), apstrom (A), highho (Hi), terriblum (T), yumyum (Ym) and sississ (Ss). Sississ (Ss) is the metalloid with the highest atomic mass. Yumyum (Ym) has the lowest atomic mass. Highho (Hi) and terriblum (T) are in group 14. Earnst (E) and apstrom (A) are in group 15. Apstrom (A) has a higher ionization energy than ernst (E). Terriblum (T) has more protons than Highho (Hi). The element called Quazzer (Qz) is a metalloid by position but its properties suggest it is a light metal.
6. The chemical makeup of the alien planet's oceans seems to be about the same as Earth's ocean. When sea water is distilled, the liquid has been shown to have molecules consisting of two atoms pfsst (Pf) and one atom of nuutye (Nu). The solid left behind after the distillation consists of a crystal made up of byyou (By) and vulcania (V).
7. The element called doggone (D) has only 4 protons in its atom.
8. Urrp (Up), oz (Oz), sississ (Ss) and nuutye (Nu) all gain two electrons. Nuutye is diatomic. Oz has a higher atomic number than Urrp (Up).
9. Nedtine (Nd), and grune (Gr) are members of group 15. Grune (Gr) has more electrons than nedtine (Nd).
10. Doadeer (Do) and Femaledeer (Fd) have 4 electrons in their outermost energy level. Doadeer (Do) is a larger atom than femaledeer (Fd). Both Rain (Rn) and dropofgoldensun (Dr) have atoms with four energy levels but Rain (Rn) has a smaller atomic radius than Dropofgoldensun (Dr).
11. The element anatom (An) tends to lose 3 electrons. The elements Wing (Wi) and gamma (Gm) both lose 2 electrons. Gamma (Gm) loses them from its 5th energy, while Wing (Wi) loses them from its third.