

Activity # 5

Name _____

Date _____

Date due _____

Assignment on the Periodic Table

NOTE: This assignment is based on material given in your notes as well as pages 174-181 in the Science Probe textbook.

1. Explain why putting elements in alphabetical order in a table was not a practical idea.

2. Elements were first arranged in order of atomic _____.
3. How many elements were known in Mendeleev's time? _____ How many are known now? _____. Mendeleev arranged the elements in order of atomic mass and also put them in groups based on similar _____.
4. Did Mendeleev come up with his periodic table all at once or did he have to "play around with it" a lot? _____.
5. Give some reasons you think might explain the fact that the periodic table today looks much different than Mendeleev's table pictured on page 175 of Science Probe.

6. What did Mendeleev do when he came to a space where no known element would fit?

7. What happened to Mendeleev’s “blank spaces” later on? _____

8. How did Mendeleev predict the properties of elements in the blank spaces? _____

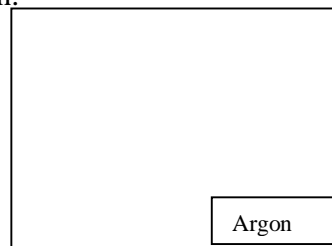
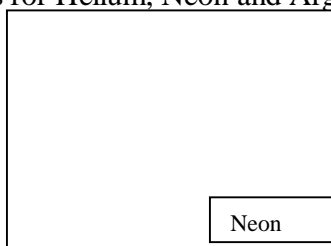
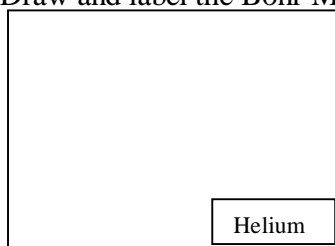
9. On the diagram of the periodic table, show the location of the *Alkali Metals*, the *Halogens*, and the *Noble Gases*.

The Periodic Table

Group # →																		18
1	2											13	14	15	16	17	18	
H	He																	
Li	Be											B	C	N	O	F	Ne	
Na	Mg	3	4	5	6	7	8	9	10	11	12	Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra	Ac																

Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

10. Vertical columns of the Periodic Table are known as Groups or Chemical _____.
11. Elements are no longer listed in order of atomic mass, but in order of atomic _____.
12. What is similar about elements in the same family? _____
13. The family on the far right of the periodic table is called the _____.
14. Draw and label the Bohr Models for Helium, Neon and Argon.

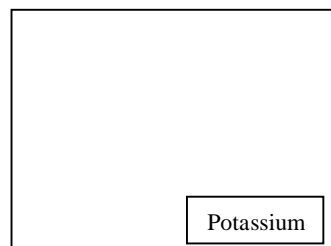
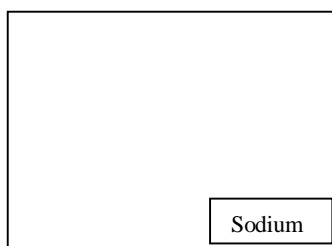
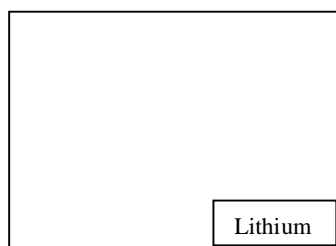


15. What can be said about the highest “orbit” in each one of the **noble gas** atoms? _____

16. How chemically reactive are the noble gases? _____
17. Why don't noble gas atoms want to take or give away electrons? _____

18. What noble gas makes up about 1% of the air in our atmosphere? _____
Why don't we notice it? _____
19. What is the main use of helium? _____
20. What are some uses of argon? _____
21. Where is neon used? _____
22. Where are krypton and xenon used? _____
23. Why is the element radon considered dangerous even though it is not chemically reactive?

24. The family on the far left of the periodic table is called the _____.
25. Draw the Bohr Models for the elements Lithium, Sodium and Potassium.



26. What can be said about the outermost orbit in each of the alkali metal atoms? _____

27. What would alkali metal atoms need to do in order to end up with the same stable electron arrangements as the noble gases? _____
28. What can be said about the chemical reactivity of the alkali metals? _____

29. When alkali metals are put into water, what happens? _____

30. Are alkali metals ever found in their pure form in nature? _____

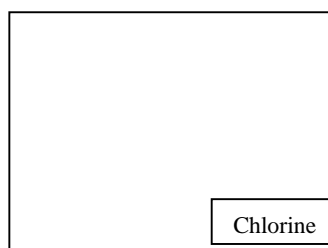
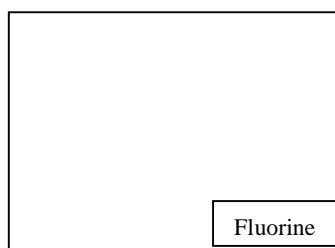
Explain why or why not. _____

31. What is the most common compound that contains sodium? _____

32. The family second from the right side of the periodic table (Group # 17) are called the

_____.

33. Draw the Bohr models for fluorine and chlorine.



34. The outer orbits of these two halogen atoms each have _____ electrons. This is one (more/less) _____ than the nearest noble gas atom.

35. In order to achieve the stable arrangement of noble gas atoms, each halogen atom would have to _____ electron.

36. Are the halogens metals or non-metals? _____

37. What can be said about the chemical reactivity of the halogens? _____

38. Why, other than reactivity, are halogens considered dangerous to work with? _____

39. The most common halogen found in compounds is the element _____.

40. What was one of the main problems with fluorine when it was first produced? _____

41. Which halogen is found in common table salt? _____

42. Give some major uses of the element chlorine. _____

43. Which common halogen is in the solid form at room temperature? _____

44. Why is hydrogen called “a family of one”? _____

45. Draw the Bohr model for hydrogen.



46. Hydrogen can achieve stability either by _____ or _____ an electron.

47. Is hydrogen found free in our atmosphere? _____

48. Where in nature can hydrogen be found free in huge quantities? _____

How do we know this? _____

49. What is the most common compound of hydrogen on the earth? _____

50. What are the main reasons that hydrogen may become a major fuel in the future ?

51. What are the two main problems with using hydrogen as a fuel now? _____

52. Horizontal rows on the periodic table are also called _____.

53. Give the symbols for the two elements in Period 1. _____

54. Give the symbols for the eight elements in Period 2. _____

55. Metals are found on the _____ side of the “staircase” and non-metals are found on the _____ side.
56. What can be said about the elements that have a higher atomic number than Uranium (92)?

57. Do you think more elements will be discovered in the future? _____
58. If you discovered an element, what would you call it? _____