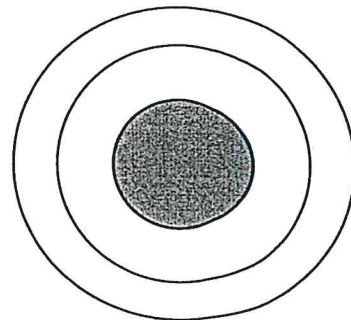


Atomic Basics

Name _____

Part A: Atomic Structure

1. Draw five protons in the nucleus of the atom. Label them with their charge.
2. Draw six neutrons in the nucleus of the atom.
3. Draw two electrons in the first energy level and label them with their charge.
4. Draw three electrons in the second energy level and label them with their charge.
5. What element is represented by the diagram? _____



Part B: Atomic Calculations

6. Label the information provided in the periodic table.

8	← _____
O	← _____
Oxygen	← _____
15.999	← _____

7. What does the atomic number represent?

_____ or _____

8. What does the atomic mass represent?

_____ + _____

9. How would you figure the number of protons or electrons in an atom?

10. How would you figure the number of neutrons in an atom?

11. Use your knowledge of atomic calculations to complete the chart.

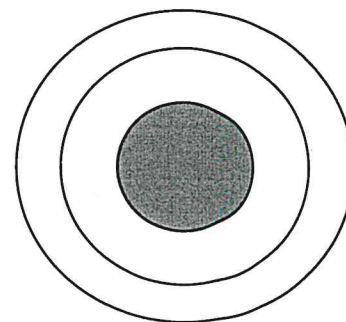
Element	Atomic Number	Atomic Mass	Protons	Neutrons	Electrons
Li	3	7			
P	15	31			
Cl		35	17		
Ni	28			31	
K		39			19
Ag	47			61	
H		1	1		
Si				14	14
W			74	110	
Ne				10	10

Atomic Basics

Name _____

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THE PERIODIC TABLE OF ELEMENTS

hydrogen 1	helium 2																																
3 H	4 He																																
5 Li	6 Be	boron 7 B	carbon 8 C	nitrogen 9 N	oxygen 10 O	fluorine 11 F	neon 12 Ne																										
13 Na	14 Mg	15 Al	16 Si	17 P	18 S	19 Cl	20 Ar																										
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr																
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe																
55 Cs	56 Ba	57-70 * La	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Pt	78 Au	79 Hg	80 Tl	81 Pb	82 Bi	83 Po	84 At	85 Rn																
87 Fr	88 Ra	89-102 * * Ac	103 Lr	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Uun	111 Uuu	112 Uub	113 Uuq	114 Uuq	115 Uuq	116 Uuq	117 Uuq	118 Uuq	119 Uuq	120 Uuq	121 Uuq	122 Uuq											

lanthanum 57 La	cerium 58 Ce	praseodymium 59 Pr	neodymium 60 Nd	promethium 61 Pm	samarium 62 Sm	europium 63 Eu	gadolinium 64 Gd	terbium 65 Tb	dysprosium 66 Dy	holmium 67 Ho	erbium 68 Er	thulium 69 Tm	ytterbium 70 Yb
actinium 89 Ac	thorium 90 Th	protactinium 91 Pa	uranium 92 U	neptunium 93 Np	plutonium 94 Pu	americium 95 Am	curium 96 Cm	berkelium 97 Bk	californium 98 Cf	einsteinium 99 Es	fermium 100 Fm	mendelevium 101 Md	nobelium 102 No

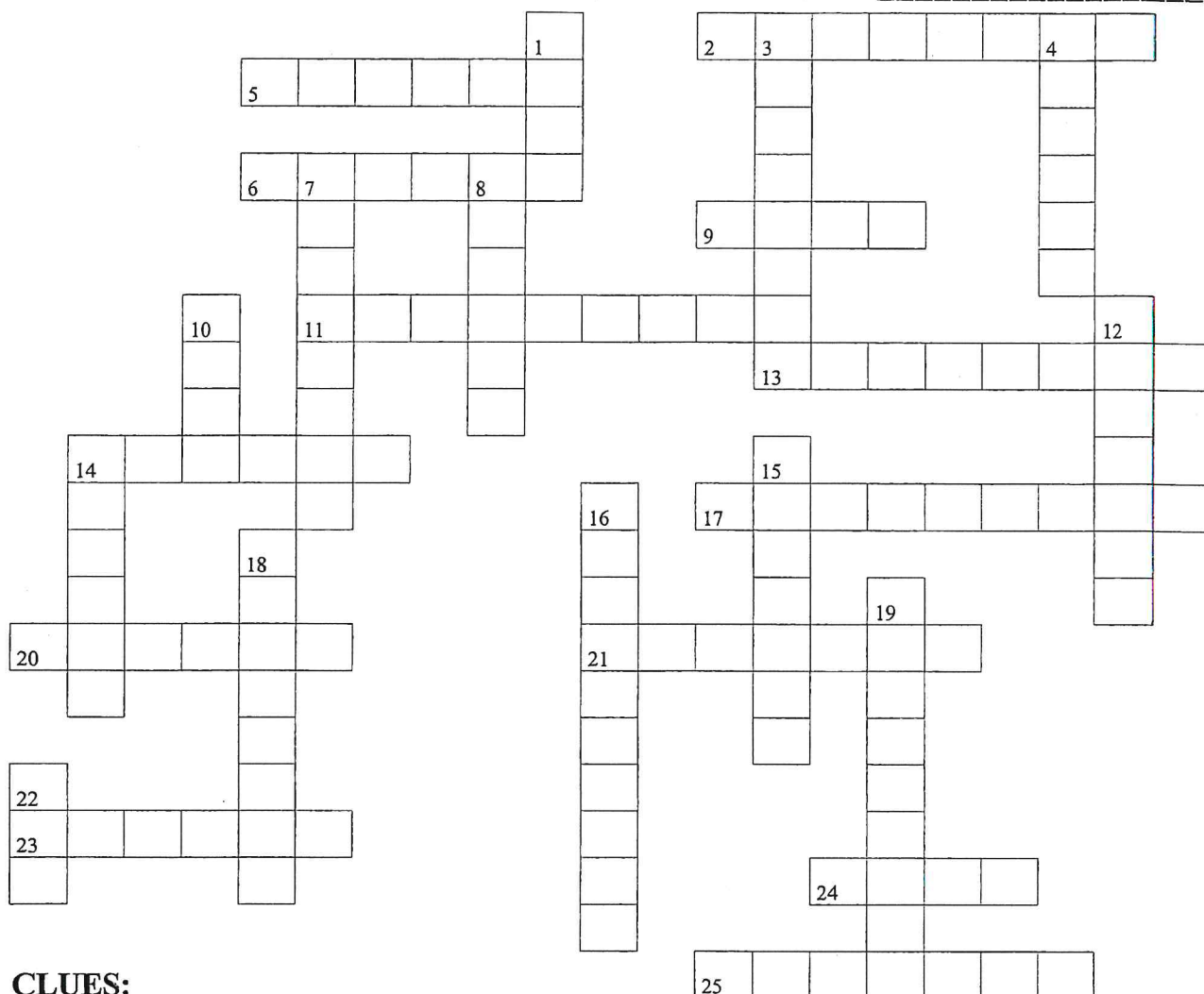
* Lanthanide series

** Actinide series

- Alkali Metals
- Alkaline Earth Metals
- Halogens
- Noble Gases
- Hydrogen
- Lanthanides and Actinides

Periodic Table Puzzle

Name _____



CLUES:

Down:

1. I have 26 protons.
3. I am not really an alkali metal, but since I have only 1 electron I behave like them.
4. I am a metal with 28 electrons.
7. I am a member of the boron family and am the most abundant metal in the Earth's crust.
8. I am a gas with 8 protons and 8 neutrons.
10. I am a member of the carbon family often mistaken for the end of your pencil.
12. I am a metal that is liquid at room temperature.
14. My atomic number is 47 and I am used to make photographic film.
15. I have 20 neutrons and am found in your teeth and bones.
16. I am a member of the nitrogen family with 16 neutrons.
18. I am a gas with a mass number of 19.
19. I am the first element in the fourth period used in making fertilizer.
22. You can find me in the carbon family in the fifth period.

Across:

2. My atomic mass is 35.453.
5. I have 2 electrons in the first shell, 8 in the second shell, and 6 in the third shell.
6. I am the head of the carbon family known as the "basis of life".
9. My atomic number is 79.
11. I am a transition metal with 25 electrons.
13. I make up 78% of the air and am found in the 15th group.
14. I am a silvery white metal used to make salt.
17. I am a member of the alkaline earth metals used to make fireworks and medicines.
20. I am a noble gas with 2 electrons.
21. I am the 2nd most abundant element in the Earth's crust and have 14 neutrons.
23. I am a member of the halide family with an atomic number of 53.
24. I am a transition metal with 30 electrons useful in making paint.
25. I am the only element in the halide family that is a liquid.

1. Identify the *Number of Valance Electrons* and *Draw the Lewis Dot Structure*

Notes: Scientists use *Lewis Dot Structures* to show the valance electrons of an element as dots. Since bonding involves the valance shell electrons only, it is only necessary to illustrate those outer electrons.

Element	Group Number (PT)	# of Valance Electrons	Lewis Dot Structure
Calcium			
Carbon			
Arsenic			
Helium			
Strontium			
Iodine			
Neon			
Sodium			