Groups	of the	Periodic	Table
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For each section below, use the information provided at the tables and from the QR codes to fill in the questions or statements.

A. Groups of the Periodic Table

1) What direction are the elements in group?

2) How many different groups are on the periodic table? _____

3) In each group on the periodic table, there are similar properties and characteristics the elements have.

a) Looking at only group 1,	what are two things that	are same going down the
group?	and	

b) Looking at only group 2, what are two things that are same going down the group? ______ and ______

c) Looking at only group 14, what are two things that are same going down the group? ______ and ______

d) Looking at only group 17, what are two things that are same going down the group? _____and _____and ______

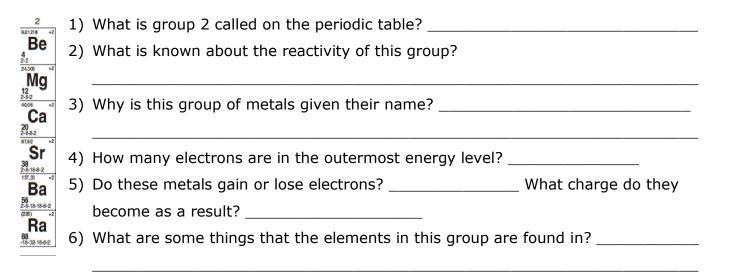
4) Based on the above information, what one similarity (characteristic) is it that leads elements of each group to have similar characteristics and properties?

B. Group 1

1 6941 +1	-	What is group 1 called on the periodic table?		
3	2)	How many electrons are in the outermost energy level?		
3 2-1 22.96977 +1 Na	3)	Do these metals gain or lose electrons? What charge do they		
11 2-8-1 39.0983 +1		become as a result?	What is the term given for this type	
39.0983 +1		of charge?		
19 2-8-8-1	4)	What is known about the reactivity of this group?		
85.4678 +1 Rb				
37 2-8-18-8-1 132.905 +1	5)	Adding a metal from this group to water cause	es what to be released?	
CS 55 2-8-18-18-8-1	6)	When metals combine with non-metals they for	orm	
(223) +1 Fr 87 -18-32-18-8-1	7)	Circle one: reactivity increases / decrease	es as you go down a group?	
	8)	The most reactive element of the group is		

Name _____

C. Group 2



D. Groups 3-12 1) What an

What are groups 3-12 called on th	e periodic	44,9559 +3 47,857 +2 50,941 SC 21 2:8:92 2:8:102 2:8:11	1 +2 51.996 +2 54.9380 1 +3 +4 +5 24 24 26-13-1 25 26-13-2	*2 55845 *2 589332 *3 +4 *7 26 26 2:8-14-2 2:8-15-2	+2 +3 Ni 28 28-162 28-18-1 28-18-1	+1 +2 30 28-18-2
table?	and	88,3059 +3 91,224 +4 82,909 Y 399 2,651,5102 2,615 138,9255 +3 17,849 +4 180,541 180,541 +1 180,541 2,615 +1 180,541 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,541 +1 180,54	b ^{*5} Mo Tc 42 12-1 26-18-13-1 26-18-13-2	+4 +7 +7 +8 +7 +8 +7 +8 +7 +8 +7 +8 +8 +8 +8 +8 +8 +8 +8 +8 +8 +8 +8 +8	+3 106.42 +2 107868 Pd +4 46 46 46 18-18 47 26-18-18 107868 47 26-18-18-18	+1 112.41 +2 Cd 48 2-8-18-18-2 +1 200.59 +1
		La Hf 72 57 2:8-18-18-9-2 (227) +3 (201) +4 (202)	a W Re	⁴³ OS Ir 76 77 78 78 78 78 78 78 78 78 78	*** Pt Au 78 15 32:17:1 (28) DS Rg 110 110	¹³ Hg ⁺² ¹⁶ ¹⁶ ¹² ¹² ¹⁶ ¹² ¹² ¹⁶ ¹² ¹² ¹⁶ ¹² ¹² ¹⁷ ¹²
	140,908 +3 144.24 +3 (145) 59 Nd 60 61 61	¹³ ^{150,36} ¹² ^{151,964} ¹³ ^{151,25} ^{151,264} ¹³ ⁶² ^{151,25} ⁶⁴ ⁶⁴	65 66	HO 67 68 68 68	188.934 +3 173.04 +2 69 70 Yb +3 70 173.04 +2 70 173.04 +3	174.9668 +3 Lu 71
	Pa 5 92 U 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	¹³ ⁴⁴ 94 94 95 96 96	n ^{*3} ⁽²⁴⁷⁾ Bk ^{*3} ⁽²⁵¹⁾ Cf ^{*3}	Es Fm	Md ^{*2} No ^{*3}	103

3

5 6 7

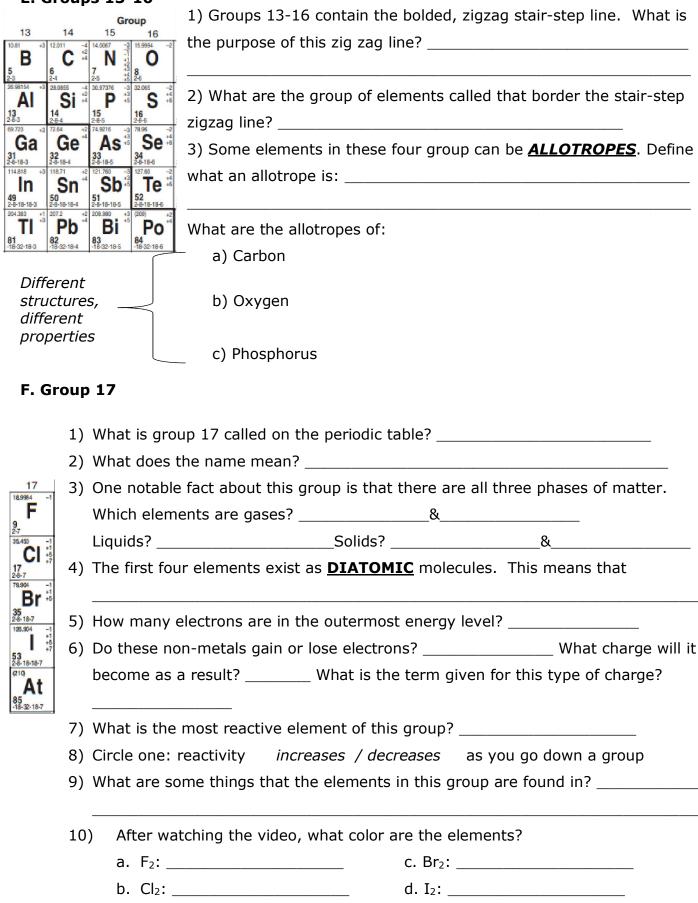
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11 12

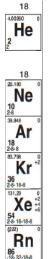
2) What are two chemical properties of these metals?

- a)_____ b)_____
- 3) What are some physical properties of these metals?
 - a)_____ b)_____ c)
- These groups of metals have valence electrons are present in more than one shell. What is exhibited because of this?
- 5) What are the three elements that are able to produce a magnetic field?
- 6) Using what you know about some of the elements in these groups, how would you describe the relative reactivity of these elements (high or low)? _____

E. Groups 13-16



G. Group 18



- 1) What is group 18 called on the periodic table?
- One notable fact about this group is that they are generally <u>inert</u>. What does inert mean?
- 3) How many valence electrons do these elements have? _____
- 4) All of these elements exist as **MONATOMIC** gases. This means that



H. Hydrogen

Observe the periodic table and the information provided for you to fill in the following information.

- 1) What is the name of the group that hydrogen is above? ______
- 2) Is hydrogen a part of group 1? _____
- 3) What does hydrogen have in common with the elements that are in this group?

1	а.	
, H ⁻¹	b.	and
1	с.	
4)	What i	s different about hydrogen (and the reason that it is not part of this group)?

a.	 -
b.	 -
c.	

 Alkali metals, alkaline earth metals, and halogens are elements found respectively in Groups A) 1, 2, and 18 B) 2, 13, and 17 C) 1, 2, and 14 D) 1, 2, and 17 Which elements contain atoms that form colored compounds and have more than one positive oxidation state? A) alkali metals B) alkaline earth metals 	7. Which element is a noble gas? A) W B) Ar C) N D) Er 8. Which pair of symbols represents a metalloid and a noble gas? A) Si and Bi B) As and Ar C) Ge and Te D) Ne and Xe 9. Which halogen is the most reactive? A) Fluorine B) Chlorine
C) noble gases	C) Bromine D) Iodine
D) transition elements	10. Which group is the most reactive metal group?
3. Which element is an alkali metal?	A) Group 1 B) Group 2
A) Na B) Mg C) Al D) Cl	C) Group 3 D) Group 12
4. Which element is an alkaline earth metal?	11. Which group is the most reactive non-metal
A) hydrogen B) calcium	group?
C) sodium D) zinc	A) Group 1 B) Group 2
5. Which element is a member of the halogen family?	C) Group 17 D) Group 18
A) K B) B C) I D) S	12. Which group is a non-reactive group of
6. The halogen that is a liquid at room temperature is	non-metal elements?
A) fluorine B) iodine	A) Group 1 B) Group 2
C) bromine D) chlorine	C) Group 17 D) Group 18