

Periodic Table Worksheet

1. Where are the most active metals located?
2. Where are the most active nonmetals located?
3. As you go from left to right atomic radius (decreases/increases). Why?
4. As you travel down a group atomic radius (decreases/increases). Why?
5. A negative ion is (larger/smaller) than its parent atom. Why?
6. A positive ion is (larger/smaller) than its parent atom. Why?
7. Elements in group one are called.
8. Elements in group two are called.
9. Elements in groups 3-12 are called.
10. As you go from left to right across the periodic table, the elements go from (metals/nonmetals) to (metals/nonmetals).
11. Group 17 elements are called.
12. The most active element in group 17 is.
13. Group 18 are called the _____. Why this name?
14. Elements in a group have the same number of _____ and the same _____.
15. The majority of the elements in the periodic table are (metals/nonmetals).
16. The father of the periodic table is.
17. Elements in the periodic table are arranged according to their...
18. What is a metalloid? Where are they found?
19. List the Characteristic physical properties that distinguish the metallic elements from the nonmetallic elements.

20. What are the 8 diatomic elements? What does it mean to be diatomic?

Answer the following questions about groups and periods in the periodic table

21. What element is in group 4 period 5?

22. How many elements are in period 4?

23. How many elements are in period 6?

24. How many metals are in group 14?

25. Why are groups sometimes called families?

Name _____

Period _____

Lewis Structure Worksheet #1

Read the **Instructions for Drawing Lewis Structures** worksheet carefully and draw Lewis structures for each of the following molecules:

Group A: Simple Molecules

CH ₄	NH ₃	H ₂ O	SiF ₄	NCl ₃
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Group B: Polyatomic Ions

PO ₄ ³⁻	ClO ₃ ⁻	ClO ₄ ⁻	SO ₃ ²⁻
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Group C: Multiple Bonds

H ₂ CO	HCN	CO	CO ₂
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Name _____ Period _____ Date _____

Molecular Geometry – Ch. 9

For each of the following molecules, draw the Lewis Diagram and tally up the electron pairs. Then, identify the correct the molecular shape.

MOLECULE	LEWIS DIAGRAM	e ⁻ TALLY	SHAPE
1. SeO ₃			
2. AsH ₃			
3. NO ₂ ⁻			

4. BeF ₂			
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MOLECULE	LEWIS DIAGRAM	e ⁻ TALLY	SHAPE
5. SiH ₄			
6. SeH ₂			
7. PF ₅			
8. SCl ₆			

Name: _____

Predicting Molecular Geometry and Hybridization

1. In each case, predict (a) the *approximate bond angle(s)*, (b) the *hybridization* around the underlined atom. (Note: It is helpful to first sketch the Lewis structure!)

Molecule or Ion →	(1) <u>O</u> F ₂	(2) H ₂ <u>C</u> O	(3) <u>N</u> O ₂ ⁺	(4) <u>B</u> F ₃	(5) SbF ₅
(a) No. of valence e ⁻ 's					
(b) Lewis structure					
(d) Hybridization					
(e) Polar or non-polar molecule?			Ion: Not applicable		
(f) Geometry name					

2. For each of the molecules below fill in the indicated items in the chart. The central atoms are underlined.

Molecule	(1) <u>S</u> O ₂	(2) H <u>B</u> F ₂	(3) <u>X</u> eF ₄	(4) <u>C</u> H ₂ Cl ₂	(5) <u>N</u> F ₃
(a) No. of valence e ⁻ 's					
(b) Lewis structure					
(d) Hybridization					
(e) Polar or non-polar molecule?					
(f) Geometry name					