

## Unit 5 Review: Bonding and Metals

Determine which type of bond would occur between the atoms: ionic or covalent.

Atom 1	Atom 2	Type of Bond
Aluminum	Phosphorus	
Sulfur	Oxygen	
Lithium	Nitrogen	
Carbon	Sulfur	

Atom 1	Atom 2	Type of Bond
Magnesium	Bromine	
Copper	Fluorine	
Calcium	Oxygen	
Titanium	Nitrogen	

Write the formulas for the following compounds and then determine if the bonds are ionic or covalent. Draw the dot diagram for the compound. If it is covalent, indicate its shape.

Magnesium Oxide
Type:
Chemical Formula:
Dot Diagram
Shape (if covalent): _____

Carbon Tetrafluoride
Type:
Chemical Formula:
Dot Diagram
Shape (if covalent): _____

Methane
Type:
Chemical Formula: CH <sub>4</sub>
Dot Diagram
Shape (if covalent): _____

Carbon Monoxide
Type:
Chemical Formula:
Dot Diagram
Shape (if covalent): _____

**Barium Bromide**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

**Sodium Oxide**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

**Bromic Acid**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

**Nitrate Ion**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

**Aluminum Sulfide**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

**Hydrosulfuric Acid**

Type:

Chemical Formula:

Dot Diagram

Shape (if covalent): \_\_\_\_\_

Use the elements in the following list to answer the questions below: **Aluminum, Calcium, Copper, Iron, Lead, Magnesium, Mercury, Nickel, Potassium, Silver, Sodium, Tin, Titanium, Zinc**

1. Give one of the metals from the above list that in its ionic form is not good for the body.
2. Give one of the metals from the list above that can be found free in nature.
3. Give one of the metals from the list above that cannot be found free in nature.
4. Name one of the strongest transition metals from the list above.
5. Give one metal from the list above which is found in nature as a chloride.
6. Which metal from the list above gets its name from the latin word stannium?
7. Which metal from the list above gets its name from the latin word hydrargyrum?

Answer the following questions using one of the transition metals that we discussed: **Aluminum, Copper, Iron, Lead, Mercury, Nickel, Silver, Tin, Titanium, Zinc**

Property	Transition Metal or Metals	
Good Conductors (2)		
High Density (1)		
Low Density (1)		
Soft (2)		
Magnetic (1)		
Good Luster (2)		

Uses in Pure Form	Transition Metal
Fuel for Space Shuttle	
Car Batteries	
Extracts Gold from Rocks	
Bike Frames	
Wiring	
Inside of Pennies	

Group 1 and Group 2 elements have many similarities and differences. In the table below, give a few words about each of the concepts listed.

Property or Idea	Group 1 Elements	Group 2 Elements
Reactivity with water		
Density		
Occurrence in Nature		
Hardness		

Match the location with the metal that we tend to get from this area.

Location	Metal or Metals
Bonneville Flats, Utah	
Epsom, England	
Dead Sea, Palestine	
Moray, Peru	
Salt Lake City, Utah	

Fill in the chart below about the four types of bonds we learned about.

Bond Type	Particles	Picture	Forces	Melting Point	Conductivity	Other Stuff	Examples
Molecular (Covalent)							
Ionic							
Network Covalent							
Metallic							