Metals and Nonmetals

All matter is made up of atoms. Different kinds of atoms are called elements. An element is considered the simplest form of matter. Elements are considered to be pure substances.

Typically, the properties of metals are a shiny luster, being very malleable, conducting electricity, and some metals are attracted to a magnet. Nonmetal properties are usually a dull luster, being brittle, not conducting electricity and not being attracted to a magnet.

Luster describes whether the substance is shiny or dull. **Brittleness** describes whether the substance will break easily.

Malleability is the opposite of brittleness. It describes whether the substance can be pressed out into thin sheets. **Electrical conductivity** describes whether electricity can pass through an object.

Magnetism describes whether the substance is attracted to a magnet. Iron, cobalt and nickel are the only magnetic elements.

Materials: mirror, cookie and clay What To Do:

- Your teacher will show you a mirror. Which property does a mirror have? Dull luster or Shiny luster (circle one)
- 2. Your teacher will show you a cookie and break it. Which property does the cookie have? Brittleness or Malleability
- 3. Your teacher will roll out a piece of clay. Which property does the clay have? Brittleness or Malleability

Materials: carbon (charcoal briquette), iron washer, lead, sulfur, copper, aluminum, magnet, conductivity tester

What To Do:

- 1. Use your periodic Table to find the symbol for each element.
- 2. Use the conductivity tester to test each element. If the bulb lights up then the material conducts electricity. If the bulb does not light up it is an insulator.
- 3. For luster determine if the element is shiny like a mirror or dull like the material in your shirt.
- 4. For brittleness or malleability determine if the element will break apart like a cookie or if it has been rolled out to a thin sheet.
- 5. Use the magnet to test each element.

Observations:

Elements		Properties				
		Conductor	Luster	Malleable	Magnetic	
Name	Symbol	or	(shiny or	or Brittle	(yes or no)	
		Insulator	dull)			
Aluminum						
Carbon						
Copper						
Iron						
Lead						
Sulfur						

Use your Periodic Table to classify the six elements as metals or nonmetals.

- 1. Which ones are metals?
- 2. Which ones are nonmetals?
- 3. What properties do all metals have?

ead

Listen and watch the video "*Meet the Elements*" Fill in the elements as they are mentioned in the song.

_____ is a metal, you see it every day ______, eventually, will make it rust away ______ in its ordinary form is coal

Crush it together and diamonds are born.

Refrain

Come on come on and meet the elements May I introduce you our friends, the elements? Like a box of paints that are mixed to make every shade They either combine to make a chemical compound or stand alone as they are.

______''s a gas that lights up the sign for a pizza place The coins that you pay with are _____, ____ and _____ _____ and _____ make concrete bricks and glass Now add some ______ and _____ for some pizza place class.

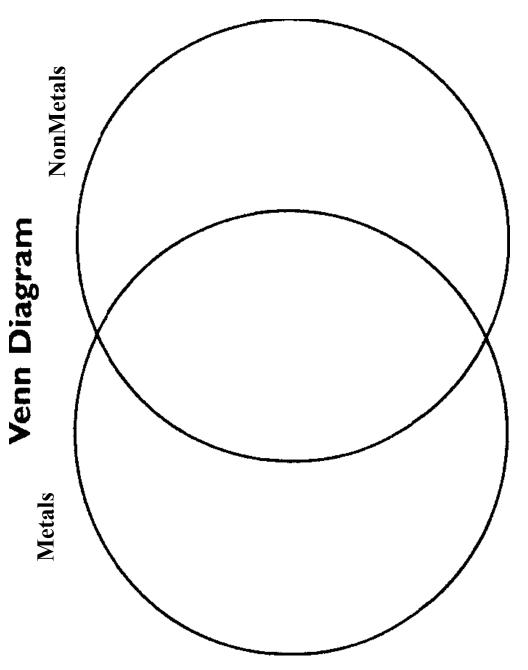
Refrain

Team up with other elements making compounds when they combine. Or make up a simple element formed out of atoms of the one kind.

Balloons are full of ______ and so is every star Stars are mostly ______, which may someday fuel your car.

Hey, who let in all those elephants?

Did you know that elephants are made of elements? Elephants are mostly made of four elements And every living thing is mostly made of four elements Plants, bugs, birds, fish, bacteria and men Are mostly _____, ____ and _____ Complete the Venn Diagram below comparing Metals and Nonmetals.



Name

period

EXIT TICKET

Metals and Nonmetals **Directions:** Place the letter of the answer next to each property. The answers will be used more than once.

Name

period ____

EXIT TICKET

Metals and Nonmetals **Directions:** Place the letter of the answer next to each property. The answers will be used more than once.

Conductor	A. metal	Conductor	A. metal
Insulator		Insulator	
Sometimes a conductor Brittle	B. nonmetal	Sometimes a conductor Brittle	B. nonmetal
Malleable		Malleable	
Magnetic	C. metalloid	Magnetic	C. metalloid
Not Magnetic		Not Magnetic	

Conclusion: (atoms, metals, nonmetals, elements, metalloids) All matter is made up of ______. Different kinds of atoms are called ______. conduct electricity, ______ do not conduct electricity and ______ may or may not conduct electricity.

Conclusion: (atoms, metals, nonmetals, elements, metalloids) All matter is made up of ______. Different kinds of atoms are called ______. conduct electricity, ______ do not conduct electricity and ______ may or may not conduct electricity.