

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:

1. 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			
Name	Symbol	Conductor or Insulator	Luster (shiny or dull)	Malleable or Brittle	Magnetic (yes or no)
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? _____



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

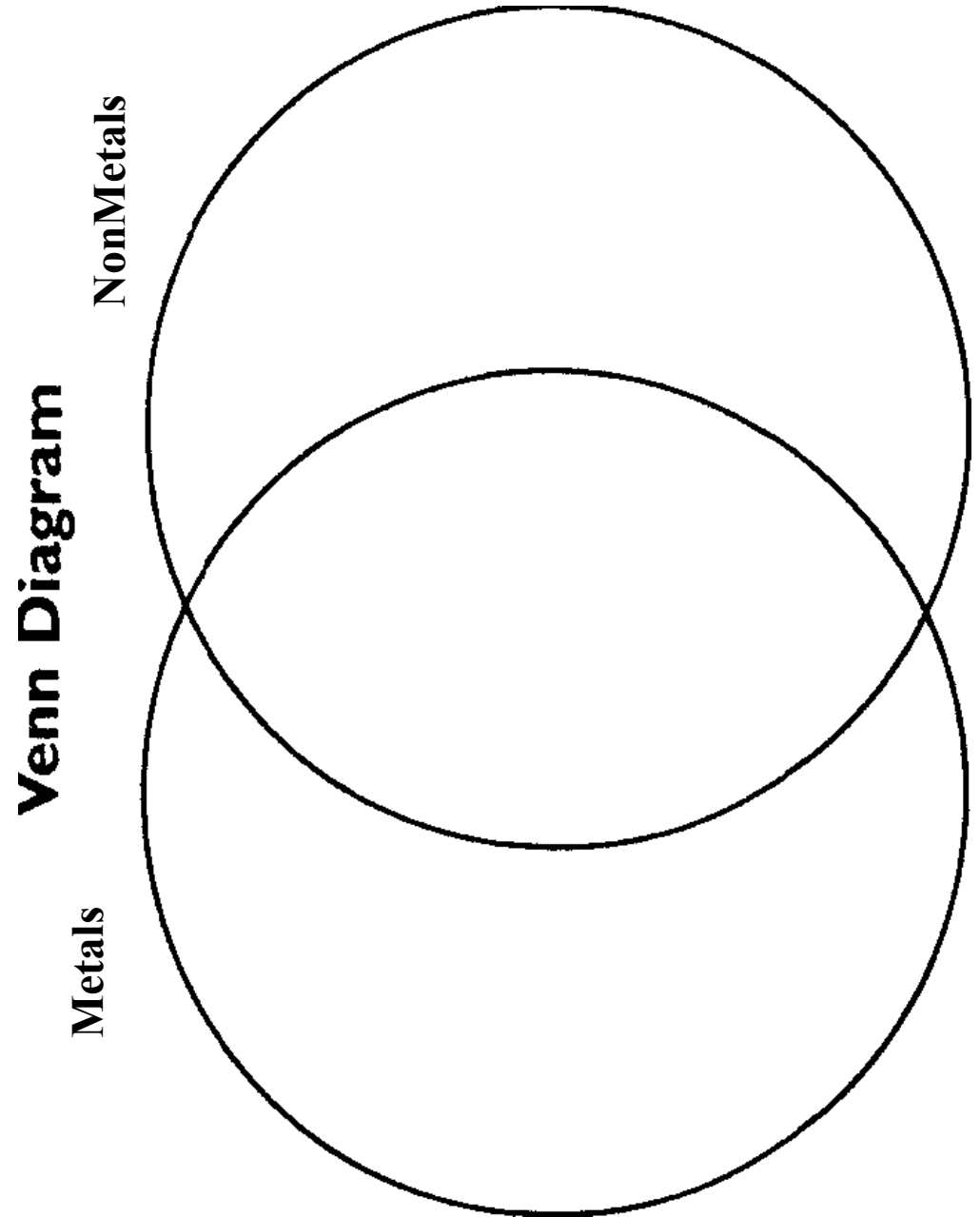
Team up with other elements making compounds when they
 combine. Or make up a simple element formed out of atoms
 of the one kind.

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.

_____	Conductor	A. metal
_____	Insulator	
_____	Sometimes a conductor	
_____	Brittle	B. nonmetal
_____	Malleable	
_____	Magnetic	C. metalloid
_____	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.

Name _____ period _____

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