

Directed Reading B

Section: Chemical Formulas and Equations

CHEMICAL FORMULAS

- All known substances are formed from about _____ elements.
- A combination of chemical symbols and numbers that represents a substance is called a(n) _____.
- What does a chemical formula show?

- The subscript in the chemical formula H_2O tells you there are two
 - atoms of hydrogen in the molecule.
 - electrons on the hydrogen atom in the molecule.
 - elements in the molecule.
 - atoms of oxygen in the molecule.
- What is the chemical formula for oxygen?
 - O_2
 - $C_6H_{12}O_6$
 - H_2O
 - $Ca(NO_3)_2$
- What is the chemical formula for water?
 - O_2
 - $C_6H_{12}O_6$
 - H_2O
 - $Ca(NO_3)_2$
- What is the chemical formula for glucose?
 - O_2
 - $C_6H_{12}O_6$
 - H_2O
 - $Ca(NO_3)_2$
- Simple covalent compounds are usually composed of two _____.
- The formula for dinitrogen monoxide is _____.
- The formula for carbon dioxide is _____.
- Ionic compounds are composed of a(n) _____ and a(n) _____.
- The overall charge of an ionic compound is _____.

Directed Reading B *continued*

Write the formula for each of the following ionic compounds.

13. sodium chloride _____

14. magnesium chloride _____

CHEMICAL EQUATIONS

15. What do musical notations and chemical equations have in common?

16. When chemical symbols and formulas are used to describe a chemical reaction, it is called a(n) _____.

17. A substance that forms in a chemical reaction is called a(n) _____.

18. A substance or molecule that participates in a chemical reaction is called a(n) _____.

19. When carbon reacts with oxygen to form carbon dioxide, carbon dioxide is the _____.

20. What will happen if the wrong chemical symbol or formula is used in a chemical equation?

21. In a chemical reaction, _____ are never gained or lost.

22. Antoine Lavoisier's work led to the _____.

23. What does the law of conservation of mass state?

Directed Reading B *continued*

24. A chemical equation must show the same numbers and kinds of

_____ on both sides of the arrow.

25. The number placed in front of a chemical symbol or formula is called

a(n) _____.

26. How many oxygen atoms are contained in the formula $2\text{H}_2\text{O}$?

27. When you balance an equation, only _____ are changed,

not _____.

Skills Worksheet

Vocabulary and Section Summary B**Forming New Substances****VOCABULARY**

After you finish reading the section, try this puzzle! Fill in the blanks with the correct terms. Then, find the words in the word search puzzle below. Words may be hidden horizontally, vertically, backward, or diagonally.

- In _____ reactions, energy is taken in.
- A chemical _____ is the process by which one or more substances undergo change to produce one or more new substances with different properties.
- The law of conservation of _____ states that energy cannot be created or destroyed.
- In _____ reactions, energy is released.
- A solid that is produced as a result of a chemical reaction in solution is a(n) _____.

P	B	I	S	H	T	P	I	I	E	B	L	Y	N	Z	V	F	L	P	S
W	O	E	V	V	C	U	N	X	P	O	C	R	G	I	Z	E	U	C	L
E	Q	V	P	F	A	D	O	P	D	E	U	Q	E	R	Z	Z	M	O	C
A	N	N	L	Y	D	T	F	E	H	T	W	E	Q	T	E	Y	B	D	J
C	U	D	M	A	H	J	M	F	P	L	B	H	W	I	N	N	U	E	J
Z	Y	J	O	E	F	N	J	B	H	X	R	D	L	P	D	G	E	W	G
S	A	C	R	T	D	L	A	Q	A	U	M	I	G	L	Q	L	C	M	C
U	I	M	K	S	H	Z	Z	X	D	G	N	J	R	G	D	B	Z	C	I
L	I	M	A	Q	N	E	P	Q	U	W	Q	W	O	K	Q	H	G	R	Z
C	B	U	B	J	S	Q	R	Y	I	B	A	C	N	W	Q	D	S	I	K
O	L	J	Y	P	V	G	E	M	L	P	K	W	X	U	P	N	K	U	T
T	X	Z	Q	U	Z	S	C	D	I	P	Z	U	U	B	N	N	S	L	D
N	P	F	X	I	V	R	I	Z	T	C	T	O	S	V	C	E	I	W	T
H	X	S	X	A	K	K	P	F	Z	F	C	G	X	P	W	L	C	T	G
Z	R	V	U	B	N	L	I	W	L	W	E	R	G	Y	O	S	X	B	F
E	M	O	E	Z	D	O	T	Q	S	Y	K	S	A	V	T	R	B	Y	V
J	N	D	S	S	Q	P	A	F	T	J	D	Q	R	F	E	F	G	V	K
I	N	H	P	L	O	G	T	L	V	V	R	A	X	H	M	F	R	G	W
K	K	G	J	Q	Q	B	E	R	U	H	E	H	B	E	N	S	X	R	D
N	O	I	T	C	A	E	R	R	V	T	N	U	V	X	Y	J	S	L	Q