

Chapter 10

Use with Text Pages 270-275

REINFORCEMENT

● Structure of the Atom

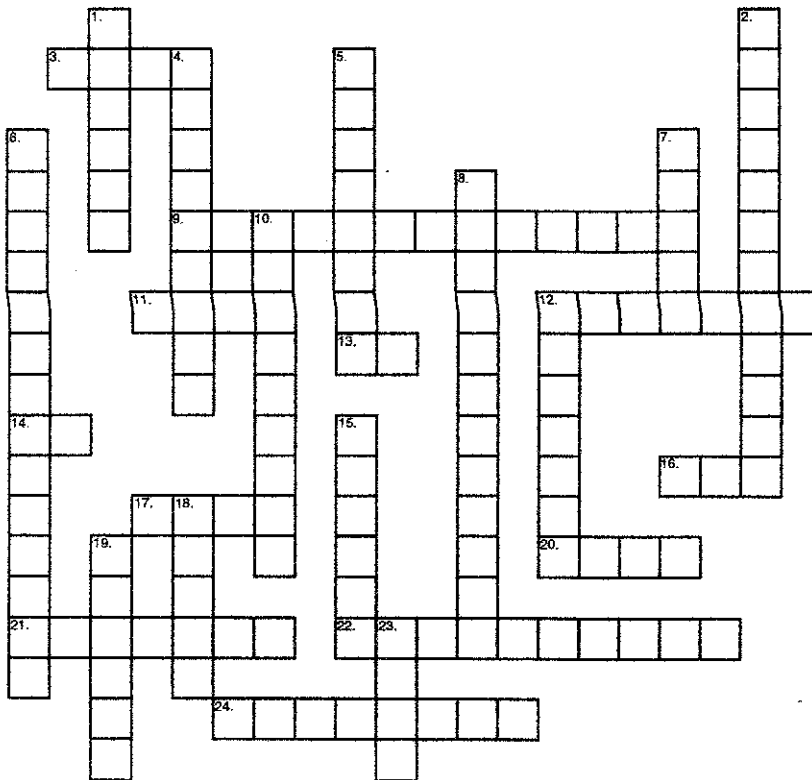
Use the clues to complete the puzzle.

Across

Down

3. Scientist who developed the planetary model of the atom
9. Region surrounding the nucleus which is occupied by electrons
11. Atomic number of fluorine (spelled out)
12. Center of atom
13. Symbol for sodium
14. Symbol for silver
16. Mixture of mostly nitrogen and oxygen
17. Fe is the symbol.
20. Name of element used in fluorescent signs
21. Atom of an element with a different number of neutrons
22. Sum of protons and neutrons
24. Only element with atoms which do not have neutrons

1. Element often made into electrical wire
2. Number of protons in an atom
4. Name of element whose symbol is Ru
5. Negatively charged particle
6. $1/12$ the mass of a carbon-12 atom
7. Helps us understand something that we cannot see directly
8. These are like shelves where electrons can be found.
10. Equal in number to the number of protons
12. A particle with approximately the same mass as a proton
15. Element used in balloons
18. Element name of radioactive gas that can accumulate in houses
19. Positively charged particle in nucleus
23. The building block of matter



Chapter 10

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REINFORCEMENT**• Smaller Particles of Matter**

Answer each of the following questions with one or two sentences.

1. What is a quark? How many types of quarks are known? _____

2. How can scientists study the inner structure of the atom? _____

3. Describe the Tevatron's purpose and how it works. _____

• Masses of Atoms

Isotopes

Answer the following questions on the lines provided.

1. Define isotopes. _____

2. How many isotopes can an element have? _____

3. What is the average atomic mass of an element? _____

4. Compare and contrast the atomic structure of the chlorine-35 and chlorine-37 isotopes.

5. Suppose that a newly discovered element called centium has three isotopes that occur in nature. These are centium-200, centium-203, and centium-209. Assume that these isotopes occur in equal amounts in nature. What will be the average atomic mass of this element?

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REINFORCEMENT

● The Periodic Table

You will need a scientist's patience to find the names of the 70 elements hidden in the grid. The Lanthanides and the Actinides have been excluded. The same letters may appear in more than one element name. Draw a line through the letters that correctly spell the name of an element.

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

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Complete the following paragraphs about the periodic table by filling each blank with the correct term.

In the modern periodic table, elements are listed by increasing _____.

Each box represents an _____. A box contains the name, atomic number, _____, and _____ for the element.

Vertical columns in the table are called _____. Most elements in a column have the same number of _____ in the outer energy level and tend to have similar _____.

Horizontal rows in the table are called _____. The elements on the left side of the table are _____. Groups 3-12 contain metals known as _____.

Elements on the right side are _____.