

Directed Reading A

Section: Arranging the Elements

1. Why do you think scientists might have been frustrated by the organization of the elements before 1869?

DISCOVERING A PATTERN

- _____ 2. Which arrangement of elements did Mendeleev find produced a repeating pattern of properties?
- a. by increasing density
 - b. by increasing melting point
 - c. by increasing shine
 - d. by increasing atomic mass

3. When something occurs or repeats at regular intervals, it is called

_____.

4. Mendeleev's table, which shows elements' properties following a pattern that repeats every seven elements, is called the _____.

5. How was it possible that Mendeleev was able to predict the properties of elements that no one knew about?

Directed Reading A *continued*

CHANGING THE ARRANGEMENT

- _____ 6. How did Moseley solve the problem of the elements that did not fit the pattern according to their properties?
- a . He rearranged the elements by atomic mass.
 - b . He discovered protons, neutrons, and electrons.
 - c . He disproved the periodic law.
 - d . He determined the elements' atomic number and then arranged them by atomic number.
7. When the repeating chemical and physical properties of elements change periodically with the elements' atomic numbers, it is called the _____.

PERIODIC TABLE OF THE ELEMENTS

- _____ 3. Which information is NOT included in each square of the periodic table in your text?
- a. atomic number
 - b. chemical symbol
 - c. melting point
 - d. atomic mass
9. How can you tell on the periodic table that carbon is a solid at room temperature?
- _____
- _____
- _____

THE PERIODIC TABLE AND CLASSES OF ELEMENTS

10. Elements are classified as metals, nonmetals, or metalloids according to their _____.
11. The number _____ of in the outer energy level of an atom helps determine which category an element belongs in.
12. How can the zigzag line on the periodic table help you?
- _____
- _____
- _____

Directed Reading A *continued*

13. Most elements are _____, of the _____, which can be found to the left zigzag line on the periodic table.

14. Most metals are _____, which means that they can be drawn into thin wires.

15. Most metals _____ are at room temperature

16. Most metals are malleable. What does this mean?

17. What metal is flattened into sheets that are made into cans and foil?

18. What elements are found to the right of the zigzag line on the periodic table?

19. Semiconductors, also called _____, are the elements that border the zigzag line on the periodic table.

DECODING THE PERIODIC TABLE

_____ 20. Which elements often share properties?

- a. those in a period
- b. those in a group
- c. those with the same color
- d. those in a horizontal row

_____ 21. The physical and chemical properties of the elements change

- a. within a group.
- b. within a family.
- c. across each period.
- d. across each group.

22. For most elements, the _____ has one or two letters, with the first letter always capitalized.

23. Horizontal rows of elements on the periodic table are called

_____.

24. Vertical columns of elements on the periodic table are called

_____, or _____.

25. Some elements, such as _____, are named after scientists.

Others, such as _____, are named after places.