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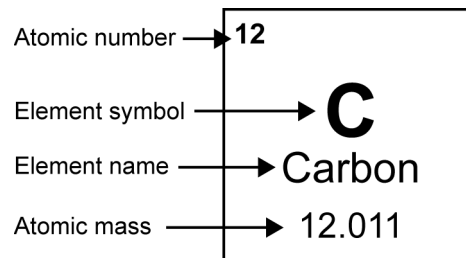
12.3 The Periodic Table

Many science laboratories have a copy of the periodic table of the elements on display. This important chart holds an amazing amount of information. In this skill sheet, you will use a periodic table to identify information about specific elements, make calculations, and make predictions.



Periodic table primer

To work through this skill sheet, you will use the periodic table of the elements. The periodic table shows five basic pieces of information. Four are labeled on the graphic at right; the fifth piece of information is the location of the element in the table itself. The location shows the element group, chemical behavior, approximate atomic mass and size, and other characteristic properties.



Review: Atomic number, Symbol, and Atomic Mass

Use the periodic table to find the answers to the following questions. As you become more familiar with the layout of the periodic table, you'll be able to find this information quickly.

Atomic Number: Write the name of the element that corresponds to each of the following atomic numbers.

1. 9	2. 18	3. 25	4. 15	5. 43
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6. What does the atomic number tell you about an element?

Symbol and atomic mass: For each of the following, write the element name that corresponds to the symbol. In addition, write the atomic mass for each element.

7. Fe	8. Cs	9. Si	10. Na	11. Bi
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12. What does the atomic mass tell you about an element?

13. Why isn't the atomic mass always a whole number?

14. Why don't we include the mass of an atom's electrons in the atomic mass?


PRACTICE


Periodic Table Groups

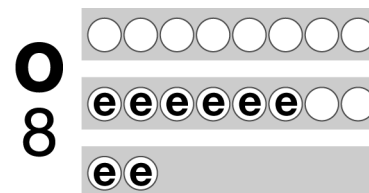
The periodic table's vertical columns are called groups. Groups of elements have similar properties. Use the periodic table and the information found in Chapter 15 of your text to answer the following questions:

15. The first group of the periodic table is known by what name?
16. Name two characteristics of the elements in the first group.
17. Name three members of the halogen group.
18. Describe two characteristics of halogens.
19. Where are the noble gases found on the periodic table?
20. Why are the noble gases sometimes called the *inert gases*?

PRACTICE


Periodic Table Rows

The rows of the periodic table correspond to the energy levels in the atom. The first energy level can accept up to two electrons. The second and third energy levels can accept up to eight electrons each. The example to the right shows how the electrons of an oxygen atom fill the energy level.



Show how the electrons are arranged in energy levels in the following atoms:.

21. He	22. N	23. Ne	24. Al	25. Ar
3 ○○○○○○○○ 2 ○○○○○○○○ 1 ○○	3 ○○○○○○○○ 2 ○○○○○○○○ 1 ○○	3 ○○○○○○○○ 2 ○○○○○○○○ 1 ○○	3 ○○○○○○○○ 2 ○○○○○○○○ 1 ○○	3 ○○○○○○○○ 2 ○○○○○○○○ 1 ○○

Identify each of the following elements:.

26.	27.	28.	29.	30.
3 ○○○○○○○○ 2 ○○○○○○○○ 1 e○	3 ○○○○○○○○ 2 eeeeeeee○ 1 ee	3 ○○○○○○○○ 2 eeeee○○○ 1 ee	3 e○○○○○○○ 2 eeeeeeee○ 1 ee	3 eeeeeeee○ 2 eeeeeeee○ 1 ee