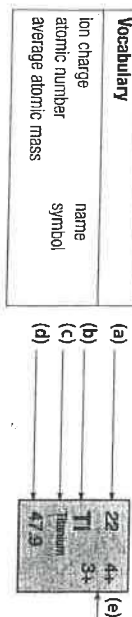


Use with textbook pages 52-57.

What is in the box?

Test your knowledge how information is displayed for each element in the periodic table.

1. Use the vocabulary words listed to label the diagram.




Examine the periodic table entry for each of the following elements and complete the blanks below.

2.  **element**

- (a) atomic number _____
- (b) average atomic mass _____
- (c) ion charge _____
- (d) number of protons _____

3.  **element**

- (a) name of element _____
- (b) ion charge _____
- (c) number of protons _____
- (d) average atomic mass _____

4.  **iodine**

- (a) atomic number _____
- (b) average atomic mass _____
- (c) ion charge _____
- (d) symbol of element _____
- (e) number of electrons _____
- (f) number of neutrons _____

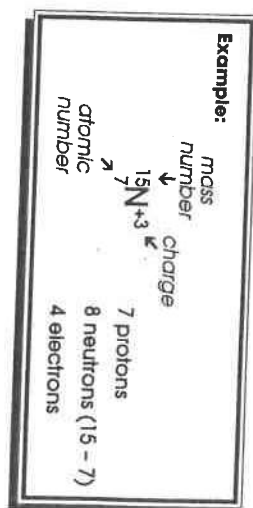
5.  **ion**

- (a) name of element _____
- (b) average atomic mass _____
- (c) ion charge _____
- (d) number of protons _____
- (e) number of electrons _____
- (f) number of neutrons _____

ATOMIC STRUCTURE

An atom is made up of protons and neutrons (both found in the nucleus) and electrons (in the surrounding electron cloud). The atomic number is equal to the number of protons. The mass number is equal to the number of protons plus neutrons. In a neutral atom, the number of protons equals the number of electrons. The charge on an ion indicates an imbalance between protons and electrons. Too many electrons produces a negative charge, too few, a positive charge.

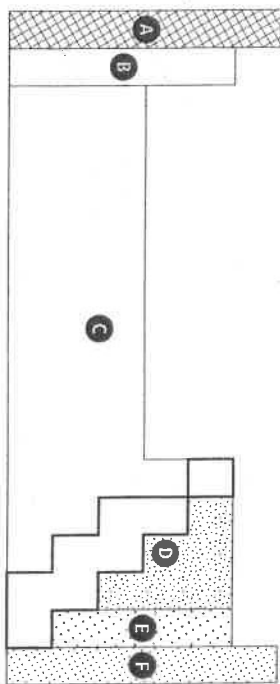
This structure can be written as part of a chemical symbol.



Complete the following chart.

| Element/ Ion | Atomic Number | Atomic Mass | Mass Number | Protons | Neutrons | Electrons |
|----------------------------|------------------|-------------|----------------|---------|----------|-----------|
| H | | | | | | |
| H ⁺ | | | | | | |
| $^{12}_6\text{C}$ | | | | | | |
| $^7_3\text{Li}^+$ | | | | | | |
| $^{35}_{17}\text{Cl}^-$ | | | | | | |
| $^{39}_{19}\text{K}$ | | | | | | |
| $^{24}_{12}\text{Mg}^{2+}$ | | | | | | |
| As ³⁻ | | | | | | |
| Ag | | | | | | |
| Ag ⁺ | | | | | | |
| S ²⁻ | | | | | | |
| U | | | | | | |

Use with textbook pages 52-57.

Families of elements

Use the simplified periodic table shown above to answer questions 1 to 12. To which region does each element or family belong? Place the letter corresponding to the shaded region on the blank line. You can use regions more than once.

You can use the periodic table on page 201 to help you answer these questions.

1. helium _____
2. lithium _____
3. fluorine _____
4. beryllium _____
5. halogens _____
6. noble gases _____
7. alkali metals _____
8. alkaline earth metals _____
9. non-metallic elements that are strongly reactive _____
10. metallic elements that are strongly reactive _____
11. metallic elements that are reactive _____
12. non-metallic elements that are very unreactive _____

Use with textbook pages 52-57.

Using the periodic table**Vocabulary**

| | |
|---------------------|---------------------|
| average atomic mass | metalloids |
| atomic number | multiple ion charge |
| electrons | noble gases |
| families | non-metals |
| good | periodic table |
| halogens | periods |
| ions | poor |
| ion charge | properties |
| metals | |

Use the terms in the vocabulary box to fill in the blanks. You can use each term more than once. You will not need to use every term.

1. The _____ organizes the elements according to their physical and chemical _____.
2. The periodic table is divided into seven horizontal rows called _____ and 18 vertical columns called _____.
3. These elements are _____ appear on the left side of the periodic table. _____ conductors of heat and electricity.
4. These elements are _____ appear on the right side of the periodic table. _____ conductors of heat and electricity.
5. The _____ form a zigzag staircase arrangement on the periodic table. These elements have properties similar to both _____ and _____.
6. The _____ refers to the number of protons that an atom has in the nucleus.
7. The _____ is the weighted average of the masses of the atoms of an element.
8. A(n) _____ is an electric charge that forms on an atom when it gains or loses electrons.
9. Some metals, like platinum and cobalt, form _____ in more than one way. In other words, they have a(n) _____.