

# AIM | What are the symbols 10 | for the elements?

Symbols are signs that stand for something else. Here are some symbols that you may know: \$ % ¢ & #. What does each one stand for? The names of elements can also be written in symbol form, such as the letters S and Ni.

## HOW DO THE ELEMENTS GET THEIR SYMBOLS?

The symbol of an element is taken from its name.

1. Often the *first letter* of an element's name is the symbol for that element. For example, the symbol for oxygen is O, and the symbol for carbon is C. See Chart I.
2. The name of an element may begin with a letter that is already the symbol for another element. In this case we use
  - the first two letters, as Os for osmium, or
  - the first letter and some other letter from the name, as Cl for chlorine

See Chart II.

## HOW DO ELEMENTS GET THEIR NAMES?

1. The symbols for most elements are taken from their names in other languages—mostly Latin and Greek. For example, the Latin name for iron is *fer-rum*. The symbol for iron is Fe. See Chart III.
2. Several elements are named after places or after famous scientists. For example, Am for americium and Es for einsteinium.

## RULES FOR WRITING SYMBOLS

1. The symbol always begins with a capital letter.
2. If there is a second letter, it is a small letter.
3. No period is used at the end of the symbol (unless it comes at the end of a sentence).

The symbols for the elements are the same all over the world. It makes no difference what country you are in—or what language is spoken there. The “language” of chemistry is the same all over the world.

## CHARTS OF SOME CHEMICAL SYMBOLS

CHART I:

<i>Element</i>	<i>Symbol</i>
oxygen	O
carbon	C
nitrogen	N
hydrogen	H

CHART II:

<i>Element</i>	<i>Symbol</i>	<i>Element</i>	<i>Symbol</i>
osmium	Os	chromium	Cr
chlorine	Cl	cadmium	Cd
calcium	Ca	europium	Eu
helium	He	palladium	Pd
aluminum	Al	platinum	Pt
nickel	Ni	zinc	Zn

CHART III:

<i>Element</i>	<i>Symbol</i>	<i>Named for</i>
californium	Cf	California
europium	Eu	Europe
curium	Cm	Marie Curie, French scientist
fermium	Fm	Enrico Fermi, Italian physicist

CHART IV:

<i>Element</i>	<i>Symbol</i>	<i>Foreign name</i>
lead	Pb	plumbum (Latin)
gold	Au	aurium (Latin)
barium	Ba	barys (Greek)
lithium	Li	lithos (Greek)

## FINDING SYMBOLS FOR ELEMENTS

The names of the elements and their symbols are listed on page 186. Find this list. Then write the symbol for each of the following elements.

	Element	Symbol
1.	copper	
2.	lithium	
3.	silicon	
4.	zinc	
5.	thorium	
6.	krypton	
7.	tin	
8.	bismuth	
9.	boron	
10.	curium	

	Element	Symbol
11.	xenon	
12.	barium	
13.	platinum	
14.	fluorine	
15.	argon	
16.	tungsten	
17.	magnesium	
18.	manganese	
19.	silver	
20.	radium	

## FINDING ELEMENTS FOR SYMBOLS

Now let's do it another way.

The symbols for twenty elements are listed below. Name the element for each symbol.

	Symbol	Element
21.	Ge	
22.	K	
23.	V	
24.	No	
25.	In	
26.	P	
27.	As	
28.	At	
29.	Zr	
30.	Lr	

	Symbol	Element
31.	S	
32.	Se	
33.	Sb	
34.	Rh	
35.	Ti	
36.	Sc	
37.	Po	
38.	Pr	
39.	Rn	
40.	Y	

**FIND THE  
RIGHT  
SYMBOL**

The first sentence in each pair of this exercise is complete. Fill in the blank in the second of each pair of sentences.

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1. The symbol for nitrogen is N.  
The symbol for neon is \_\_\_\_\_.
2. The Latin name for sodium is *natrium*.  
The symbol for sodium is \_\_\_\_\_.
3. The symbol for fluorine is F.  
The symbol for francium is \_\_\_\_\_.
4. The symbol for hydrogen is H.  
The symbol for holmium is \_\_\_\_\_.
5. The symbol for carbon is C.  
The symbol for cobalt is \_\_\_\_\_.

**COMPLETING  
SENTENCES**

Complete the sentences with the words below.

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capital

two

symbol

small

1. The short way of writing an element is called its \_\_\_\_\_.
2. The first letter of a chemical symbol is always a \_\_\_\_\_ letter.
3. If a chemical symbol has two letters, the second letter is always a \_\_\_\_\_ letter.
4. A chemical symbol never has more than \_\_\_\_\_ letters.

**TRUE OR FALSE** Write T on the line next to the number if the sentence is true.  
Write F if the sentence is false.

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- \_\_\_\_\_ Every element has its own symbol.
  - \_\_\_\_\_ A chemical symbol can have three letters.
  - \_\_\_\_\_ A scientist in China cannot understand the chemical symbols in a book written in English.
  - \_\_\_\_\_ The second letter of a chemical symbol is a capital letter.
  - \_\_\_\_\_ Only elements have symbols.

**MATCHING** Match the two lists. Write the correct letter on the line next to each number.

- 
- |   |  |
|---|--|
| 1. _____ symbol                             | a) never used as a chemical symbol     |
| 2. _____ 106                                | b) always a capital letter             |
| 3. _____ second letter of a chemical symbol | c) the number of chemical symbols      |
| 4. _____ three letters                      | d) sign that stands for something else |
| 5. _____ first letter of a chemical symbol  | e) always a small letter               |

**REACHING OUT** Why is it so important to have only one set of chemical symbols in the world?

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