

# Chemistry Connects to ..... *Language*

## Introduction

- 1.1 The language of science 2
- 1.2 Latin and Greek roots 2
- 1.3 How this book works 3

## 1.1 The language of science

Have you ever noticed that scientists use all kinds of fancy words like *nucleosynthesis* [nu'cleo•syn•the'sis] or *photoelectric photometry* [pho'to•e•lec'tric pho•tom'e•try]. Many of the words that scientist use are indeed long and difficult to pronounce. However, these words have been carefully selected by scientists who have put the field of science into verbal language. Each scientific word means a particular thing. There is a *language* to science.

## 1.2 Latin and Greek roots

If someone had to memorize all of the words that scientists use it would be a difficult task. However, most of the words that are used in science come to us from two languages.

Latin and Greek.

Many of the words

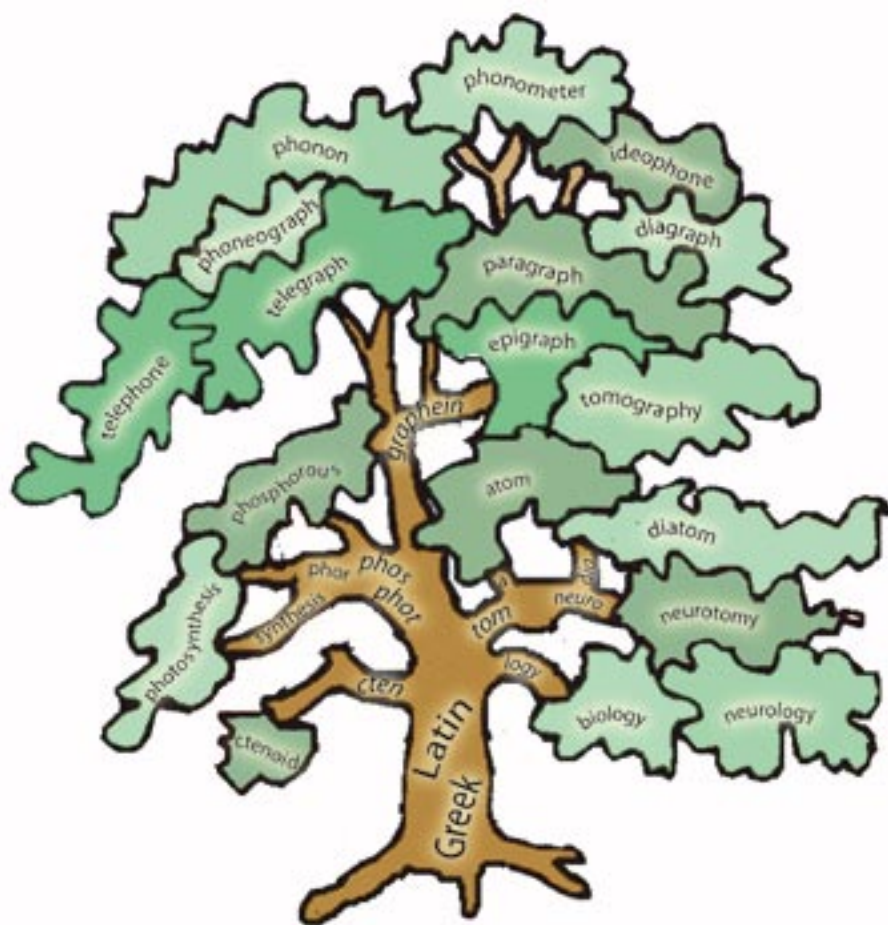
you encounter will

have Latin or Greek

*word roots*. A word root is that part of a word that is derived from another word.

For example, the word "biology" comes from the Latin word

*bios*, which means



“life” and *logy* which means “study of,” so biology means the *study of life*. The word tree illustrates several different words and their Latin or Greek word roots. You can see that the words on the branches are the word roots and those on the leaves come from these roots. In fact, many of the languages that people speak have Latin or Greek word roots. English, Spanish, Portuguese, German and even Romanian all have some words that are similar because some words in each of these languages come from Latin or Greek. For example, the English, Spanish, Portuguese, French and Italian words for school all come from the Latin word *schola*.

“school”

**schola**

escuela

escola

scuola

school

ecole

language

**Latin**

Spanish

Portuguese

Italian

English

French

We can learn a lot about languages by learning the Latin and Greek word roots.

### 1.3 How this book works

This booklet is called a “connection.” This booklet *connects* the discipline of science to the language of science. It will help you to understand the different subjects in science if you know about the language of science.

#### 4 Chemistry connects to.....

---

In the first section of each chapter you will find the word root for a set of six English words.

For example, your word list may look something like this:

deflate  
inflate  
flabellum  
flavor  
conflate  
afflate

The word root can be two letters long, or three letters long or even four or five letters long. You are to look for the two to five letters that are common in each word. This is the word **root**. For example this list of words has the following three letters in common:

deflate  
inflate  
flabellum  
flavor  
conflate  
afflate

We see that the word root has the three letters "f," "l," and "a" and make up the word root f l a.

The exercises in the first section are designed to get you thinking about the words in the list and the common word root. You are to try to *guess* the meaning of the root word and any of the words in the list.

In the second section the meaning of the word root is defined.

For example, we found that the word root for our example list was the three letter word root **fla**.

de <b>fla</b> te	<b>fla</b> vor
in <b>fla</b> te	con <b>fla</b> te
<b>fla</b> bellum	af <b>fla</b> te

We find out in this section that the meaning for the word root **fla**, comes from the Latin word *flare*, which means “wind,” or “to blow.”

We find out that all of the words have something to do with wind or blowing. The exercises in this section encourage you to try to define the words on your list *before* you look at the definitions. Guessing is good! It gets you thinking, even if your guesses are wrong.

The third section defines all of the words. These definitions are taken from a number of different dictionaries including Webster’s Unabridged New Twentieth Century Dictionary 1972 <sup>1</sup>, the American Dictionary of the English Language 1828<sup>2</sup>, and A Thesaurus of Word Roots of the English Language<sup>3</sup>. Additional Latin or Greek word roots for prefixes or suffixes are also given.

## 6 Chemistry connects to.....

---

The meanings of the words in our example list are:

Deflate            1. to collapse by letting out air or gas, 2. to lessen the importance of, as with money (*de-* opposite).

Inflate            1. to blow full of air, to expand, 2. to raise the spirits of, to make proud, 3. to increase, raise beyond normal (*in-* in).

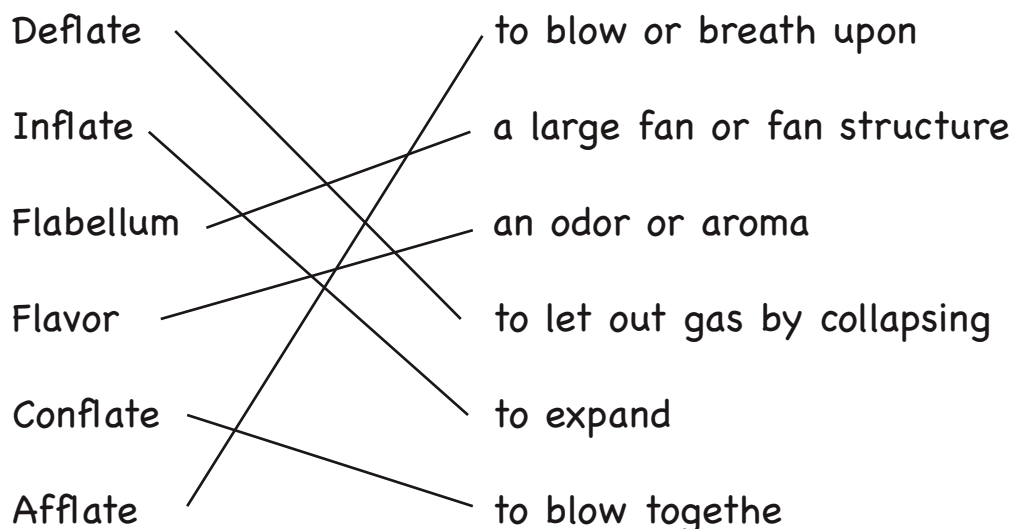
Flabellum        1. a large fan usually carried by the Pope, 2. in zoology or botany, the fan-shaped part or structure.

Flavor            an odor, smell, or aroma *carried by the wind*.

Conflate         1. to blow together, bring together, collect. 2. to combine, melt, fuse, or join (*con-* together).

Afflate            to blow or breath upon (*af-* to, toward).

In the next section you are given the opportunity to match the definitions of the words to the word list. For example:



In the next section you “Test Yourself.” Now that you have learned the word root and the definitions of the different words in the list you can see how well you remember them with a self test.

Finally, in the last section of the chapter you will have a chance to make up a story or several sentences using the words you have learned.

For example:

*While carrying a rather **deflated** balloon down the sidewalk, and his hand **conflated** with his mother's, little Johnny was losing his interest with his mother's conversation with Mr. Longs, who awkwardly carrying his **flabellum**, was nevertheless chatting whole-heartedly. The **flavor** of his chocolate Sunday was wearing off and his patience was at an end. **Afflating** hard upon his mother, which was his favorite way of gaining her attention, his mother made her farewells and Mr. Longs, still awkwardly carrying his **flabellum**, moved on. Johnny was saved from the boring conversation at last.*

written by a local home school student

Now that you have learned about how language connects to science, work through this booklet as you learn Level I Chemistry, and most importantly ...

Have fun!

# Chapter 1 : ATOM

1.1	Find the root	2
1.2	Learn the root	3
1.3	Definitions	4
1.4	Mix and match	5
1.5	Test yourself	6
1.6	Using new words	7

## 1.1 Find the root

Look at the following words:

atom  
anatomy  
diatom  
epitome  
entomology  
tome

There is a "cluster" or group of letters that is exactly the same in all six words. Can you find the cluster?

Circle the cluster that is the same in each word. Write the three letters that make up the cluster. \_\_\_\_\_

Now look at the words carefully. Because they all have a common cluster, they all have a meaning with some similarities

Can you guess the meaning of the cluster?

---

Can you write a definition for any of the words in the list?

---

---

---

---

## 1.2 Learn the root

### Word Cluster

**atom**

**tome**

an**atomy**

epi**tome**

di**atom**

enti**tomology**

All of the words above have a common word "root" -- **tom**. The word root **tom** comes from the Greek word *temnein*, which means "to cut." All of the words have something to do with the verb "to cut."

Now, knowing that the cluster **tom** comes from the Greek word *temnein* try to guess the meanings of the words *before* looking at the definitions in the next section.

atom \_\_\_\_\_

tome \_\_\_\_\_

anatomy \_\_\_\_\_

epitome \_\_\_\_\_

diatom \_\_\_\_\_

entomology \_\_\_\_\_

## 1.3 Definitions

Anatomy	Literally means "to cut up." In science sometimes animals are cut up to find out the position and structure of their parts ( <i>ana-</i> up again).
Atom	Something that can not be further cut. The Greeks thought that the atom was the smallest unit of matter that could not be further divided. Today we know that atoms can be divided into smaller parts, but they are still called atoms ( <i>a-</i> not).
Diatom	Something that has two "atoms". Diatoms are small organisms that have a wall that splits them into two symmetrical parts ( <i>di-</i> two).
Entomology	The branch of biology that deals with insects. Insects have segmented bodies that are divided into parts - hence they look cut or divided (logia from <i>legein</i> -- to speak).
Epitome	Literally "to cut short." A short, brief statement or thing that represents the whole. ( <i>epi-</i> upon) "Michael Jordan is the <i>epitome</i> of basketball."
Tome	A part of a book or volume of a larger set.

## 1.4 Mix and match

Draw lines to connect the words with their meanings.

Atom

a word or thing that represents the whole

Anatomy

a book or volume of a larger set

Epitome

a small creature that is separated into two parts by a wall

Entomology

a small unit of matter that cannot be cut

Diatom

to cut up or dissect

Tome

the study of insects

## 1.5 Test yourself

Write the meaning next to the words below:

Atom \_\_\_\_\_

Anatomy \_\_\_\_\_

Diatom \_\_\_\_\_

Epitome \_\_\_\_\_

Entomology \_\_\_\_\_

Tome \_\_\_\_\_

Extra:

Can you guess the meanings of the following words?

Gastrotomy (*gastro*, stomach)

\_\_\_\_\_

Xylotomy (*xylō*, wood)

\_\_\_\_\_

