

# Vocabulary Handbook

## Greek and Latin Word Parts

Many words in the English language developed from Greek and Latin words. If you know some common Greek and Latin word parts, you can decode the meanings of other unknown words.

Suppose you read a magazine article that says, "If you see this plant, don't touch it! It's phototoxic and could cause a skin rash." How can you predict what the word *phototoxic* means without looking it up in a dictionary? To decode a word, follow the steps to the right.

**Break the word into parts.** Try to find the Greek or Latin word parts within the word. In the word *phototoxic*, you can find two word parts: *photo-* and *tox-*.

**Look up the word parts in the table below.** You will find that *photo-* means "light" and *tox-* means "poisonous."

**Analyze the clues to determine a definition.** In this example, your word clues are "light" and "poisonous." But there is also a clue in the sentence, "skin rash." You might guess that a phototoxic plant is one that can poison a person's skin when a chemical in the plant reacts with sunlight, and that's just what it means!

| WORD PART       | DEFINITION                  | EXAMPLE  |
|-----------------|-----------------------------|--|
| a-              | not, without                | abiotic: factor in an ecosystem that is not alive                                  |
| ab-             | away, apart                 | absorption: movement away from one system and into another                         |
| ad-             | to, toward                  | adhesion: attraction that pulls molecules of the same substance toward one another |
| anti-           | against                     | antibiotic: chemical that acts against bacteria                                    |
| -ase            | enzyme                      | DNA polymerase: enzyme that builds DNA polymers                                    |
| bi-             | two                         | binary fission: asexual reproduction in which a cell divides into two cells        |
| bio-            | life                        | bioengineering: process by which life forms are changed using technology           |
| cardio-         | of or relating to the heart | cardiac muscle: muscle in the heart  |
| cerebr-         | brain                       | cerebral cortex: part of the brain that controls voluntary functions               |
| chloro-         | green                       | chlorophyll: green pigment in photosynthetic organisms that absorbs light          |
| -cide           | kill                        | insecticide: chemical that kills insects   |
| con-, co-, com- | with, together              | codominance: both genes expressed together   |
| cyto-           | cell                        | cytoplasm: jellylike substance within a cell                                       |
| di-             | two                         | dicot: plant whose seeds have two cotyledons                                       |
| diplo-          | double                      | diploid: having double genetic information   |
| ecto-           | outer, outside              | ectotherm: organism that uses the outer environment to regulate body temperature   |
| endo-           | inner, inside               | endoskeleton: skeleton found inside of the body                                    |
| -gram           | write, record               | cladogram: record of proposed evolutionary relationships                           |
| hetero-         | different                   | heterozygous: having two different alleles   |
| homo-, homeo-   | the same                    | homozygous: having two of the same alleles   |
| hydro-          | water                       | hydrologic cycle: water cycle  |

| WORD PART          | DEFINITION                 | EXAMPLE   |
|--------------------|----------------------------|---|
| <b>hyper-</b>      | above, over                | <b>hypertonic:</b> having a concentration above that of another solution                      |
| <b>hypo-</b>       | below, under               | <b>hypotonic:</b> having a concentration below that of another solution                       |
| <b>im-, in-</b>    | with, into                 | <b>immigration:</b> movement of individuals into a population                                 |
| <b>iso-</b>        | equal                      | <b>isotonic:</b> having a concentration equal to that of another solution                     |
| <b>-itis</b>       | inflammation               | <b>appendicitis:</b> inflammation of the appendix   |
| <b>-lysis</b>      | decomposition, dissolving  | <b>glycolysis:</b> breakdown of glucose   |
| <b>meso-</b>       | middle                     | <b>mesophyll:</b> layer of tissue in the middle of the plant leaf                             |
| <b>mono-</b>       | one                        | <b>monohybrid cross:</b> mating that examines inheritance of one trait                        |
| <b>-morph</b>      | form                       | <b>metamorphosis:</b> change in body form   |
| <b>neuro-</b>      | neuron                     | <b>neurotransmitter:</b> chemical that signals neurons  |
| <b>-osis</b>       | condition or process       | <b>mitosis:</b> process of cell division  |
| <b>path-</b>       | disease                    | <b>pathogen:</b> disease-causing agent  |
| <b>peri-</b>       | around                     | <b>peripheral nervous system:</b> nerves found around, or outside, the central nervous system |
| <b>phago-</b>      | to eat                     | <b>phagocytosis:</b> engulfing, or eating, of bacteria or foreign bodies by phagocytes        |
| <b>-philic</b>     | having a preference for    | <b>hydrophilic:</b> having an attraction to water   |
| <b>-phobic</b>     | having an aversion for     | <b>hydrophobic:</b> having an aversion to water   |
| <b>photo-</b>      | light                      | <b>photosynthesis:</b> process that uses light to make sugars                                 |
| <b>phyto-</b>      | plants                     | <b>phytoplankton:</b> plantlike plankton  |
| <b>-pod</b>        | foot                       | <b>pseudopod:</b> fake foot   |
| <b>poly-</b>       | many                       | <b>polygenic trait:</b> trait resulting from the interaction of many genes                    |
| <b>re-</b>         | again, new                 | <b>regeneration:</b> regrowth of lost or destroyed parts or organs                            |
| <b>sperma-</b>     | relating to sperm or seeds | <b>spermatogenesis:</b> process that forms sperm  |
| <b>tel-, telo-</b> | end                        | <b>telophase:</b> ending phase of mitosis   |
| <b>-therm</b>      | heat                       | <b>endotherm:</b> animal that uses its internal tissues to produce its body heat              |
| <b>tox-</b>        | poisonous                  | <b>toxin:</b> poisonous substance that can destroy cells                                      |
| <b>trans-</b>      | across                     | <b>transgenic:</b> an organism that contains a gene from a different species                  |
| <b>-troph</b>      | nutrition                  | <b>autotroph:</b> organism that makes its own source of nutrition                             |
| <b>-tropism</b>    | response                   | <b>geotropism:</b> growth response to gravity   |
| <b>uni-</b>        | single, one                | <b>unicellular:</b> organism made up of one cell  |
| <b>zoo-</b>        | animal                     | <b>zoology:</b> study of animals  |