*Below are links you may find helpful to supplement your studies in lower division and upper division math and sciences. They include practice problems, short instructions, and/or lecture videos. Some sites also include select social sciences and humanities.*

**Multiple Subject Sites (math, sciences, and some SSHA subjects:**

* <http://khanacademy.org/> (lower division)
* <http://chemwiki.ucdavis.edu/> (upper and lower division courses for multiple subjects)
* <http://oyc.yale.edu/courses> (upper and lower division courses)
* <http://ocw.mit.edu/courses/> (upper and lower division courses)
* <http://ocw.uci.edu/lectures/?cat=9> (upper and lower division courses)
* <http://www.hippocampus.org/> (lower division)
* <http://www.youtube.com/user/crashcourse> (lower division)

**Biology**

* <http://nrhs.nred.org/www/nred_nrhs/site/hosting/Gardner/AP%20Biology/exam%20review/ExamReview/MR%20G%20Lists/MRGStudySheets.htm> (outline of gen. bio.)
* <http://www.dummies.com/how-to/content/molecular-cell-biology-for-dummies-cheat-sheet.html> (tables)

*Biochemistry*

* <http://biowiki.ucdavis.edu/Biochemistry>

*Genetics*

* <http://biowiki.ucdavis.edu/Genetics>
* <http://ocw.tufts.edu/Course/20/Lecturenotes> (lecture notes on some topics in genetics)

*Immunology*

* <http://www.wiley.com/legacy/products/subject/life/immuno/questions.html>
* <http://www.biology.arizona.edu/immunology/tutorials/immunology/main.html>
<http://www.sonoma.edu/users/t/thatcher/biol480/study.htm>

(advice on how to study and prepare notes for immunology)

**Chemistry:**

* <http://www.chem.purdue.edu/gchelp/howtosolveit/howtosolveit.html> (how to solve various types of chemistry problems. They include general chem, chemical equilibrium, thermodynamics, nuclear chemistry, and electrochemistry).
* <http://chemmybear.com/stdycrds.html#GenChem> (flash cards for gen. chem.)

*Organic Chemistry:*

* <http://www.cem.msu.edu/~reusch/VirtualText/Questions/problems.htm> (problems & links to more sites)
* [http://ochem.jsd.claremont.edu/practice.htm](http://ochem.jsd.claremont.edu/practice.htm%20%20)  (problems & tutorials)
* [http://www.aceorganicchem.com/organic-chemistry-practice-exams.html](http://www.aceorganicchem.com/organic-chemistry-practice-exams.html%20%20) (problems from various universities)

**Mathematics (various):**

* <http://appliedmath.ucmerced.edu/node/12> (old exams for lower division classes)
* <http://patrickjmt.com/> (lower division math)
* <http://www.scribd.com/doc/200306/Calculus-Cheat-Sheet> (calculus equations and cheat sheet)
* <http://www.youtube.com/view_play_list?p=E7DDD91010BC51F8> (linear algebra)
* <http://numericalmethods.eng.usf.edu/>  (numerical methods)

**Physics (various):**

* <http://open.umich.edu/education/lsa/physics140/fall2007/materials>

(Lectures, practice problems, and general guide on how to approach a physics problem).

* <http://www.scribd.com/doc/1496995/Physics-Final-cheat-sheet-with-problems>

(1 yr of physics equations & review questions).

* <http://www.youtube.com/view_play_list?p=854AA255B15C574C> (physics iii, vibrations & waves)
* <http://www.youtube.com/view_play_list?p=189C0DCE90CB6D81> (Classical mechanics)
* <http://www.youtube.com/view_play_list?p=84C10A9CB1D13841> (quantum mechanics)
* <http://ocw.tufts.edu/Course/36/Lecturenotes> (modern physics)
* <http://ocw.berkeley.edu/playlist#c,d,Physics,4986431EE5B122D1> (Introduction to Statistical and Thermal Physics)
* <http://www.openculture.com/physics_free_courses> (video lectures for a variety of physics courses).

**Scholarship, Internship Info:**

* <http://www.fastweb.com/>
* http://uroc.ucmerced.edu/
* <http://www.phds.org/>

**Med School Data** –

* <https://www.aamc.org/data/facts/>

**Study Guides and Tips**

* <http://www.princeton.edu/mcgraw/library/for-students/>

**Common Latin and Greek Roots in Biology Vocabulary**

Students in introductory biology classes typically have to learn more new vocabulary words than students taking a foreign language! The good news is that many science vocabulary words use the same Greek and Latin roots. This table shows you many roots to help you decipher words you hear in biology class.

|  |  |  |
| --- | --- | --- |
| **Greek or Latin Root** | **Meaning** | **Examples** |
| A-, An- | Not, absent | Abiotic: without lifeAnoxygenic: without oxygen |
| Ab-, Abs- | Away from | Abscission: separation of leaves from tree |
| Allo- | Another | Allosteric: another binding site |
| Aqua- | Water | Aqueous: watery |
| Bi- | Two | Bilayer: double layered |
| Bio- | Life | Biology: the study of life |
| -cide | Kill | Bacteriocidal: kills bacteria |
| Cyt | Cell | Cytoplasm: the fluid inside a cell |
| Di- | Two | Disaccharide: a carbohydrate made of two simple sugars |
| Dis- | Apart | Disjoin: separate |
| Endo- | Inside | Endocytosis: a process that brings things into a cell |
| Epi- | Upon, over | Epidermis: the uppermost layer of tissue covering an organism |
| Eu- | True | Eukaryotes have a true nucleus |
| Ex- | Out | Exocytosis: a process that puts things out of cells |
| Geno- | Give birth, beget | Genetics: the study of heredity |
| Hetero- | Mixed, unlike | Heterozygous: a cell that has two different versions of a gene |
| Homo- | Same | Homozygous: a cell that has two identical versions of a gene |
| Hyper- | Above | Hypertonic: has a greater concentration of solutes |
| Hypo- | Below | Hypotonic: has a lower concentration of solutes |
| Inter- | Between | Interphase: the cellular phase between cell divisions |
| Iso- | Same | Isotonic: has same concentration of solutes |
| Locus | Place | A locus on a chromosome is the place where a gene is located |
| Macro- | Big | Macrophage: a large phagocyte |
| -meter | Measure | Centimeter: a measurement that's 1/100 of a meter |
| Micro- | Small | Microbiology: the study of living things too small to see with the naked eye |
| Mono- | One | Monosaccharide: a single simple sugar |
| Olig- | Few | Oligosaccharide: a short chain of sugars |
| Ped-, Pod | Foot | Pseudopod: a "false foot" or projection of an amoeba |
| Phago- | Eat | Phagocytosis: a process where a white blood cell engulfs and destroys bacteria and viruses |
| -phil | Love | Hydrophilic: mixes well with water |
| -phobia | Fear | Hydrophobic: doesn't mix with water |
| Poly- | Many | Polypeptide: a chain of many amino acids |
| Pro- | Before | Prokaryotes: cells that evolved before nucleated cells |
| Stom- | Mouth | Stomates: openings in the surfaces of leaves |
| Zoo- | Animal | Zoology: the study of animals |
| Zygo- | Join | Zygote: a cell formed from the joining of sperm and egg |