

AP Biology

AP Biology

Fall Semester, 2015

Ms. Jennifer Johnson

Welcome

Dear Parents and Students,

Welcome to AP Biology at North Cobb High School. I am excited to have you, and I am looking forward to a great semester. AP Biology is a rigorous course that is the equivalent to two semesters of the introductory college level biology course for science majors. Like a college course, you are expected to be in class every day and doing your own studying at home every night. The potential to exempt introductory biology offers you a lot of options once you reach college. However, you must earn those options. You will have to work very hard, perhaps harder than some of you have had to work in a course in high school this far. You can expect that this course will be far more advanced than an honors course. Do not let the challenging nature of this course discourage you. You ARE capable of success in this course.

Remember, you do not receive college credit simply by taking the course. It is expected that you will take the AP Biology Exam on **Monday, May 9, 2016 at 8 AM**. This exam is the culmination of the course. It is highly regarded at colleges and universities as a valid assessment of a student's knowledge of biology and science practice.

This course focuses more strongly on the ability to apply science knowledge and practice to specific situations. You will have plenty of time to develop both your knowledge of biology and the practice of science. In addition, study sessions will be available for further preparation. I look forward to being a part of your journey to high school and college success.

Expectations of an AP Course

AP Exam: Students will be expected to take the Advanced Placement Environmental Science on **Monday, May 9 at 8 am**. Class time will be used to prepare for the exam in addition to review sessions outside of class.

Registering for the AP Exam: North Cobb High School utilizes TotalRegistration.net to streamline the registration process. Payment plans are available.

Academic Expectations: Due to the rigorous college material, it is highly recommended that students have passed chemistry to be successful in the class (these students tend to be more successful). Math skills will be needed with the use of a basic calculator.

Class Environment: This class will be taught modeling a college class using lecture, outside assignments, discussion, lab and group work. Reading and video assignments will occur each night with corresponding quizzes (announced or unannounced) frequently.

Contact Ms. Johnson

Room 719

• Parents:

Jennifer.johnson@cobbk12.org

• Students:

msjohnsonAPbiology@gmail.com

• Classroom blog:

Msjohnsonscienceclass.weebly.com

AP Exam

Monday, May 9, 2016 at 8 AM

Required Materials

- 2 Quad ruled (graph paper) composition notebooks (no spiral notebooks)
- Sticky notes
- Sticky tab dividers
- Highlighters
- 4-function calculator with square root button, graphing calculators are NOT acceptable
- Colored pencils, markers, or crayons
- Pens and pencils
- Large (at least 1.5 inch) three-ring binder with dividers
- Loose leaf paper
- You will be notified in advance if you need to bring your textbook to class

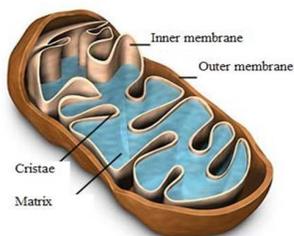
Textbook

Biology: Campbell and Reece, 8th edition.

Grading

Unit Exams and Projects	40%
Labs	15%
Quizzes and Reading Assessments	15%
Homework	10%
Cumulative Final Exam	10%
SLO	10%

Grades will be posted to Synergy in a timely manner. It is important that you stay up to date with your grade.



“Science is a way of thinking much more than it is a body of knowledge.”
— Carl Sagan

AP Biology Success– A How To Guide

As stated, AP Biology is a difficult course. Remember, difficult does not mean impossible. Many students have been very successful in AP Biology. Those students have several things in common including taking the following actions for the entire semester:

- **Participate in class**– Ask questions, answer questions, be ACTIVE in your education.
- **Be proactive**– Don't wait until the day of the test or major assignment to get clarification on a content question or what is expected of you.
- **Be Present**– Come to class prepared to learn, stay awake. It helps.
- **Use the unit outlines**– You will receive an outline as we begin each unit. It is your guide for everything we will discuss in a unit including your AP Biology learning objectives.
- **Attend test corrections**– Attend ALL test corrections. Even if you get a score with which you are satisfied on the exam, do your test corrections! They are helpful as review for the final and AP exam and will help your grade overall.
- **Complete all assignments**– Assignments in this class are NEVER “busy” work. They have a purpose related to your learning objectives for each unit. A zero on an assignment will not only affect your grade in a HUGE way, but it will also limit your preparation for unit exams, the final, and the AP Exam.
- **Take notes for reading/video quizzes**- You are allowed handwritten notes for your reading quizzes if they are taken in your Biology Interactive Learning Log. Take them and use them. They will help you with quizzes and exam preparation.
- **Do something every night for AP Biology**– If you wait until the night before the exam to do all your studying AND complete your BILL assignments you will not only stay up too late, but you will not likely score the way you hope to on the exam.
- **Take all lab experiences seriously**– AP Biology labs are a set part of the curriculum. Both portions of the exam will test your ability to carry out and design experiments.

Course Framework: Big Ideas

AP Biology is Based on four big ideas, they are as follows:

Big Idea 1: Evolution

The process of evolution drives the diversity and unity of life.

Big Idea 2: Cellular Processes: Energy and Communication

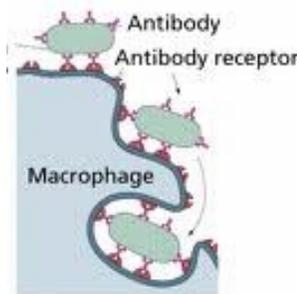
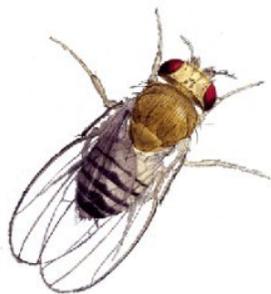
Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.

Big Idea 3: Genetics and Information Transfer

Living systems store, retrieve, transmit, and respond to information essential to life processes.

Big Idea 4: Interactions

Biological systems interact, and these systems and their interactions possess complex properties.



Course Frame Work: Science Practices

In addition to the four big ideas, the course focuses on seven science practices.

Science Practice 1: The student can use representations and models to communicate scientific phenomena and solve scientific problems

Science Practice 2: The student can use mathematics appropriately

Science Practice 3: The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course

Science Practice 4: The student can plan and implement data collection strategies appropriate to a particular scientific question

Science Practice 5: The student can perform data analysis and evaluation of evidence

Science Practice 6: The student can work with scientific explanations and theories

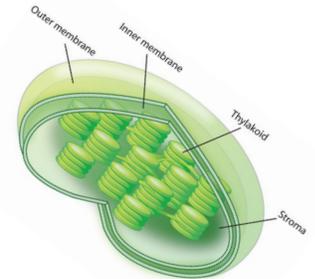
Science Practice 7: The student is able to connect and relate knowledge

The AP Biology Exam consists of two sections: multiple choice/grid-in and free response. Both sections include questions that assess students' understanding of the big ideas, enduring understandings, and essential knowledge and the ways in which this understanding can be applied through the science practices. The exam is 3 hours long and includes both a 90-minute multiple choice section and a 90-minute free-response section that begins with a mandatory 10-minute reading period. The multiple-choice section accounts for half of the student's exam grade, and the free-response section accounts for the other half.

- Section IA: 63 multiple choice questions based on the four big ideas and seven science practices outlined in the curriculum framework.
- Section IB: 6 grid-in questions that require mathematical analysis
- Section II: 2 long free response and 6 short free response.

Learning how to budget your time for the AP Exam is extremely important. Therefore, our unit exams will be modeled after the AP exam. Each unit exam will contain approximately 30 multiple choice questions, 3 mathematical analysis questions, 1 long free response and 3 short free response questions. You will have 90 minutes for our unit exams. We will practice timed free response questions as classwork throughout the semester.

*information adapted from the College Board Website– AP Curriculum Framework and Course Description.



Topic Outline

We will have seven units and seven corresponding unit exams this semester. **Tentative** dates for each of the exams are below.

Unit	Unit Name	Exam Date
1	Evolution	Tuesday, August 18
3	Biochemistry, Cellular Structure, Origins	Wednesday, September 2
4	Cellular Metabolism and Signaling	Thursday, September 17
5	Mendelian Genetics	Friday, October 9
6	Molecular Genetics	Wednesday, October 28
7	Organismal Biology	Wednesday, November 18
7	Ecology and Biodiversity	Thursday, December 6

“A good head and good heart are always a formidable combination. But when you add to that a literate tongue or pen, then you have something very special.”
— Nelson Mandela

SLO: To Be Announced

FINAL EXAM: Thursday, December 17

AP EXAM: Monday, May 9 at 8 AM

Reviewing for Exams

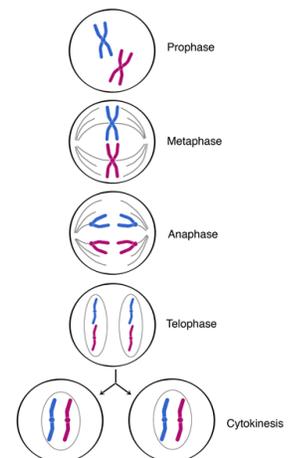
Your BILL will become a fantastic study tools. However, some of you may wish for more supplemental study materials. North Cobb High School has access to the USA Test Prep AP Biology review. Your school login will provide access to these resources.

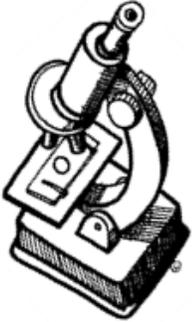
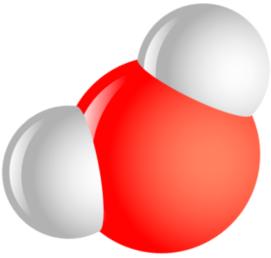
Review books

The best available review book for AP Biology is Pearson's Test Prep Series for AP Biology to accompany Campbell Biology. (ISBN: 978-0-13-345814-5). There is a link posted to the classroom blog under AP Biology Review.

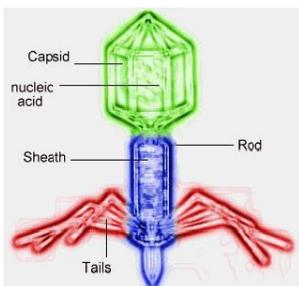
Test Corrections

Test corrections will be offered for each unit exam. Only multiple choice questions can be corrected. You will receive half credit back for corrected answers for a value of up to 10% of the whole exam. In order to receive 10% you must attempt to correct all incorrect questions. Notes and texts may be used, but collaboration with peers is not allowed. Times will be announced after each unit exam. In general, you will have a week before or after school to complete corrections. You may attend as many scheduled sessions as necessary.





“Every great advance in science has issued from a new audacity of imagination.”
-John Dewey



Lab Work

Objective:

Your time in lab is the time in which you will put the Science Practices to work in order to support the Big Ideas outlined in the curriculum framework for AP Biology. AP Biology has a set of required labs that we will perform. The College Board clearly states that at least one free response question on the AP Exam will be based on lab experience. 25% of our time in class will be dedicated to lab work which means you can expect to have a lab at least once per unit.

Behavior in Lab:

The laboratory is a place for serious thought and investigation. It is not the place for socializing. The following rules must be followed.

1. Go to workstation promptly.
2. Do not damage property, interfere with others or harm others.
3. Never play with the shower or eyewash station. These should only be used in emergency situations. Disciplinary action will be taken for those that break this rule.
4. No horseplay.
5. Remain at your workstation and do not disturb others. Ask Ms. Johnson for assistance.
6. Never try things that are not outlined by your lab instructions. Do not tamper with unrelated materials, chemicals, or equipment.
7. Protective eyewear and clothing will be worn.
8. Nothing should be removed from the lab.
9. Drawings required in lab should be drawn while actively observing the object (microscope slide, organisms, etc.).

Preparing for the Lab:

1. Pre-lab activities will be assigned prior to most labs. These should be completed in your lab notebook and ready on the day of lab. Students who do not complete pre-lab activities will NOT be allowed to participate in lab that day and will be penalized a late grade on the lab (20% off).
2. Read entire lab sheet before any materials are collected.
3. Review and use your notes and accompanying text sections that deal with the concepts under investigation.
4. Quizzes may be utilized to assess your knowledge of the lab prior to performing it.

Handing in Labs:

Labs should be completed when assigned during class or that evening as homework, unless otherwise specified. Labs will be checked for completeness in class when specified. Labs not complete at that time will be penalized a minimum late grade of 20% on the lab. Lab notebooks will be reviewed for correct observation and data collection during the investigations. **Labs should only be written in blue or black ink. First person is not acceptable.**

Some labs will be submitted via the lab notebook while others will be in lab report format.

Concepts introduced or reinforced during lab should be studied, and questions will be on the unit exam.

Biology Interactive Learning Log aka BILL

This semester BILL is your new best friend in AP Biology. You will have homework in the BILL most nights. Your BILL must be kept in a quad ruled (graph paper) composition notebook. Spiral notebooks are not acceptable. Instructions for setting up the BILL will be given in class during the first week of school. There are many benefits of keeping a BILL.

- 1) You build your own study book for the final exam and AP Exam
- 2) You are more engaged in your learning which helps you retain it more effectively
- 3) We have more time for lab investigations. AKA doing science rather than digesting it.

Ongoing Unit Assignments: Instagram Photo

For each unit you will be required to post an Instagram style photo (if you don't have an Instagram don't worry) to our class discussion board. The photo must relate to the unit in some way and be taken by you. You must include a creative hashtag. Your photo posting will be due 5 school days before each unit exam. Your comments are due the day before each unit exam. Once you have posted your photo you must comment on two other photos and how it relates to biology. You will receive further guidelines and rubrics during the first week of school. This assignment is a fun way to express your biology

Scientific Journal Articles

As students of the advanced sciences it is important that you understand how scientific knowledge is developed and presented. As such, each student will be required to read three scientific journal articles from a publication such as Science or Nature. Several other journals such as medical journals may be acceptable. We will review articles as a group so that you know what is expected of you and how to break down an article. You will complete a graphic organizer for each article. I will be available for guidance in choosing an article and understanding basic information. However, it is important that you understand that the majority of the work should be done outside of class. A rubric is provided with this syllabus. This assignment will be worth half of your final project.

Classroom Policy and Procedure

Classroom Rules

1. Be respectful of your peers, your teacher, yourself, classroom animals, teaching materials and the classroom.
2. Come to class on time and prepared.
3. Follow all school rules.
4. No cell phones or MP3 players in class.
5. Practice lab safety.
6. Do no eat or drink in class
7. Cheating will not be tolerated: any assignments, projects, quizzes, tests, or other class work in which you cheat will receive a ZERO. Please note that talking or noise during an exam constitutes cheating.
8. Any behavior which interferes with the rights of others to learn will not be tolerated.

Failure to follow classroom expectations will be dealt with according to the behavior policy of North Cobb High School.

Late Work

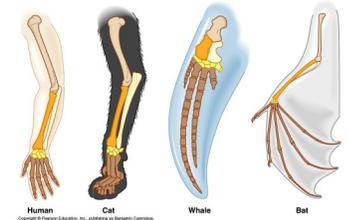
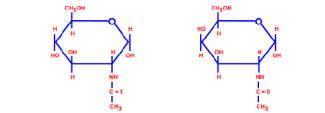
Late work WILL NOT be accepted. Late projects will be accepted at the discretion of the teacher after a parent phone call and a student/teacher discussion.

Absence

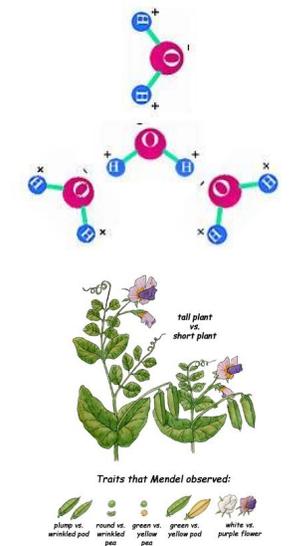
You will have 5 days to make up your work after an absence. Any work due the day you were absent should be turned in upon your return. It will be counted late if you do not have it. It is YOUR responsibility to obtain make up work and notes. You may check our schedule on the classroom blog. DO NOT do your make up work during class time. Missed labs will be made up before or after school if necessary.

Tardies

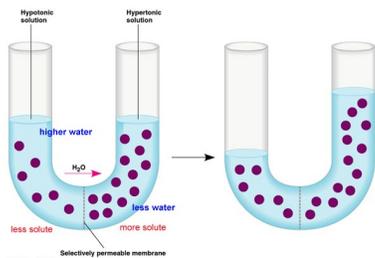
Students are considered tardy if they are not in class when the late bell rings. North Cobb's tardy policy will be followed.



“ ‘Boldly going where hundreds have gone before’ does not make headlines.”
-Neil deGrasse Tyson



AP Biology Hall Passes



You will receive 10 emergency hall passes. Use your hall passes wisely, once you have used all of your passes you will not be issued anymore. In the event that you lose your hall passes you will not be issued anymore. Please organize and plan accordingly. **Passes will not be signed during direct instruction or exams.**

Supply Wish List

Any of the supplies below are used frequently in science classes and would be greatly appreciated as a donation to the classroom supplies

- | | | |
|-----------------|--|---------------------|
| -Paper towels | -Markers | -Glue |
| -Tissues | -Crayons | -No. 2 Pencils |
| -Hand sanitizer | -Colored Pencils | -Blue or black pens |
| | -Craft supplies such as beads, yarn, pipe cleaners | |



Academic Integrity Statement

Cheating is a serious matter. The act of cheating will result in a disciplinary referral. The first incidence does not carry a disciplinary consequence with the administrator, just a conference. In any incidence, the parents of a student who has been involved in cheating will be notified and the student will receive a grade of zero for the test or evaluation period, and a grade of U in conduct.

- For this course, cheating is defined as, but is not limited to, the following acts:
- Copying anyone's answers to questions, exercises, study guides, classwork or homework assignments
- Taking any information verbatim from any source, including the Internet, without giving proper credit to the author, or rearranging the order of words and/or changing some words as written by the author and claiming the work as his or her own, i.e., plagiarism.
- Looking onto another student's paper during a test or quiz.
- Having available any study notes or other test aids during a test or quiz without the teacher's permission.
- Collaborating on assignments when independent work is expected.
- Making any effort to communicate the contents of assessment questions or answers through use of cell phone texting, photography, social networking sites, or other related technology.
- Using a cell phone or camera at any point during a test or assessment without express permission of the instructor.

**"SCIENCE
RULES!"**

-Bill Nye

