AP Biology - Policies and Guidelines for Success

Welcome to AP Biology, I am so glad we are taking this journey together! This course is designed to be the equivalent of a college introductory biology course. The curriculum for this class is the College Board Advanced Placement Biology curriculum. You will need to have the initiative and responsibility for your own learning in this class, something that will help prepare you for college. This course moves at a ***very*** fast pace and you are expected to devote a considerable amount of time outside of class to master the required material. During the fall semester we will take a look at the big picture through the study of ecology and evolution. From there we will narrow our scope to studying interactions at the cellular level and at the level of molecular genetics. Towards the end of the course we will widen our focus again with the macroscopic study of organism form and function. This course differs significantly from a high school course with respect to the quantity and type of laboratory work done and the time and effort of the student outside of class. However, although this year will prove challenging, I am certain that we will have a wonderful year together filled with learning and laughing!

Ms. DeTrolio's Contact Information:

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- Webpage: go to madisonpublicschools.org →MHS webpage → Teacher webpage → Google Classroom
- Extra help: Whenever needed please make an appointment to see me for extra help. I am available before school, during my prep periods, lunch, or after school.

Our AP Biology course will central around The Big Ideas and Science Practices detailed here:

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.

*Within each big idea the College Board has identified several *enduring understandings* and key pieces of *essential knowledge*. Students will be given a copy of the Big Ideas and Enduring Understandings to self-monitor mastery of these major organizing tools.

Science Practices: Students are engaged in student-directed investigation during at least 25% of the instructional time devoted to class work. In each lab we will reinforce several of the science practices – these are skills the College Board has specified that a highly qualified AP Biology student can ***do***. The seven science practices are listed on the next page.

The **Science Practices** are that *the student can:*

1) use representations and models to communicate scientific phenomena and solve scientific problems.
2) use mathematics appropriately.
3) engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
4) plan and implement data collection strategies appropriate to a particular scientific question.
5) perform data analysis and evaluation of evidence.
6) work with scientific explanations and theories.
7) is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

Students are required to create and maintain a laboratory notebook throughout the course. Students will use their laboratory notebooks to create other formats of scientific communication such as poster sessions and formal written lab reports. Maintenance of your laboratory notebook documenting all of your lab investigations is a component of your lab grade.

How to Succeed in AP Bio:

- Have a **GOOD ATTITUDE every day**, I promise you that I will!
- Listen respectfully while others are talking, we will all listen to you!
- **Stay on task** for the entire period and **follow all laboratory safety rules**.
- Practice **honesty** at all times!
- Review what we learn in class every night and begin studying in advance for upcoming assessments.
- Come in before or after school for extra help if needed.
- **Limit bathroom trips** to lunch, study hall, and between classes.
- **Take responsibility when absent** → check your classroom folder, refer to the weekly schedule/ a classmate to check what you missed and to copy the notes, see me if you have additional questions.
    - If you miss a test/quiz, **you are responsible** for approaching me to schedule a make-up.
        - The Madison High School *Make-Up Policy* and *Attendance Policy* will be followed.

Resources and Materials:

Textbook: Urry, Lisa A., *et al*. *Campbell Biology in Focus*. Boston: Pearson Benjamin Cummings, 2014.

Other Resources:

- The College Board. *AP Biology Investigative Labs: an Inquiry Based Approach.* New York: The College Board, 2012.
- Student handouts, a compilation of original work with components of the following:
    - Heitz, Jean and Giffen, Cynthia. *Practicing Biology*. Boston: Pearson Benjamin Cummings. 2008.
    - Holtzclaw, Fred and Knapp Holtzclaw, Theresa. *Pearson Active Reading Guide.* 4th Edition. Boston: Pearson Benjamin Cummings. 2011.
- Holtzclaw, Fred and Knapp Holtzclaw, Theresa. *Pearson Education Test Prep Series for AP Biology*. Boston. Pearson, 2014. ISBN 978-0133458145.

Needed supplies: Three ring-binder, binder dividers, AP review book, lined paper, colored pencils, lab notebook (composition notebook), and a calculator

Course Grading/Policies:

Weekly Schedule:

- At the beginning of every week the schedule will be posted on Google Classroom.
- It is designed to provide you with the objective, activity/lab, and homework assignments for each day. Also, it will remind you of due dates of projects, labs, tests, and *some* quizzes.

Grades:

- 50% = **Tests/ Quizzes** - 25%= **Lab** - 25% = **Homework/ Class work**
- *Exception – MP #1 = 50%=Test/Quizzes - 20%=Lab -20%=Homework/Class work -10%=Summer Assignment*
- **Extra credit** will be given for class participation. Participation during class discussion will be recorded and extra credit will be periodically added to the "homework/class work" grade category.

Late Work Policy:

- Please make EVERY ATTEMPT to hand your work in on time! Prepare for college – in many college courses late work is not accepted under any circumstance.
- Late assignments will be accepted only until the class set of that assignment has been handed back.
- 10% of the grade will be deducted for each day late (Please note, days we "drop" are also counted!).

Reading Guides:

- At the start of every chapter you will be provided with the reading guide for that chapter (hard copy).
- They are designed to help you focus on the big ideas to master throughout each chapter and should be completed when reading the assigned pages in the textbook.
- You must bring the assigned portions to class each day as there will be periodic, unannounced homework checks during which they will be collected. You are also encouraged to add to them to expand on your answers as we engage in discussions and activities during class.

Question A Day (QuAD):

- Each class will begin with either a practice AP Exam style MC or FRQ.
- These must be answered on the QuAD journal pages to be kept in your 3-ring binder.
- They will be periodically and randomly collected, and students will be randomly called on to answer them.
- QuADs must be identified with the DATE assigned and answered in the order completed in class.
- Unless otherwise noted, FRQ QuADs should be one **good** paragraph in length. On the exam you should be able to produce the essay in 6-7 minutes.
- QuADs may include drawings or diagrams, but they must be clearly labeled and explained.

Homework:

- Homework assignments will be listed on the Weekly Schedule. Homework will be assigned every night, but not every assignment will be due the following day (check the schedule).
- All assignments **are important** and you are expected to complete, correct, and keep them.

Assessments:

- All unit tests and quizzes will be announced in advance and written on the Weekly Schedule.
- Refer to the textbook, notes, assignments, and labs when preparing for an assessment.
- Tests will usually be worth 100 points and quizzes/projects will usually be worth 10-60 points.

Labs:

- There will be approximately 1 lab per week.
- Lab reports + maintenance of the lab notebook + lab quizzes = 25% of overall grade
- Lab quizzes will be given to assess understanding of the content and science practices.
- Formal lab write-ups need to be completed in the lab notebook.
- For each day late, your lab grade will be lowered by 10%.

Lab Notebook:

Purpose and Rationale:

- The lab notebook provides a permanent record of your work in AP Biology and can be used as a reference in college courses.
- If you were working professionally in a lab (either in industry or academia) a properly kept laboratory notebook provides legal evidence of the conception of an idea and the date of that conception.
- You will do it in most college labs, so it is good to start building good habits now.

General Requirements:

1. Your notebook must be **permanently bound** (composition notebook) and pages should never be ripped out.
2. You will utilize this notebook for the entire year. It should be **brought to class each day or left in your folder** on days you don't need to bring it home. **The notebook should be utilized during each lab.**
3. All writing must be in **permanent black or blue ink.**
4. If not already provided, reserve pages one and two of your lab notebook for the **Table of Contents.**
5. **Errors should be crossed out** and the correction written in immediately after. You will not be penalized for any material neatly crossed out. Do not try to obliterate the mistake. Do not use white out.
6. You must use a **ruler or straight edge** when constructing tables. Be sure to plan your work before you write it in your lab notebook. The lab notebook is a permanent record.
7. All entries must be orderly and legible. There is a 10% penalty for work that lacks neatness & organization.
8. Each entry must be **dated.** Begin each lab on a separate page.
9. An entry dealing with an experimental design must be clearly explained. **Identify independent and dependent variables**; do not assume that the reader knows your conception of the experiment.
10. State the object and results of each experiment clearly and concisely. Give a **complete and factual account of the procedure** so that another researcher could replicate the experiment. Describe and give quantities of all materials used.
11. **Graphs or charts** must be neat and labeled and meet College Board's criteria for graphing.
12. All **calculations** and statistical analyses must be shown longhand, or a longhand sample must be given with clear indication of the source data, calculations performed, and resulting figures.
13. **Conclusions**: For most (if not all) labs and investigations there will be either a series of handwritten conclusion and analysis questions or a types component that will be handed in to accompany the work completed in your lab notebook. Instructions for this component are included with each lab assignment.

A sample lab rubric and an abbreviated sample lab notebook entry is shown on the next two pages.

Academic Integrity:

Violations of Academic Integrity = Cheating, Plagiarism, and Academic Dishonesty including, but not limited to:

- Copying or sharing questions or answers with others from an exam, test, quiz, assessment, etc.
- Talking with other students during a test or quiz
- Using any kind of cheat notes or unauthorized materials to improve academic performance
- Copying homework, lab assignments, or projects
- Allowing another student to copy homework, projects, tests, or other assignments
- Falsifying data on lab assignments
- Plagiarizing another person's words or ideas
- Taking credit for another person's work

Extra Help: Due to the nature of this course we will be moving at a **very quick pace.** Whenever needed please make an appointment to see me for extra help before school, during my prep periods, or after school.

I am certain that by following the guidelines above you will have both a fun and successful year in AP Biology! Please never hesitate to come and see me with any questions or concerns.

Looking forward to a successful year!

~ Ms. DeTrolio

Investigation #

EXP. NUMBER	EXPERIMENT/SUBJECT	DATE
	Title of Lab - From Handout or manual	May 30, 2015

08

NAME	LAB PARTNER	LOCKER/DESK NO.	COURSE & SECTION NO.
Sample Student	First Name(s)	N/A	1A, for example

Group Members - If your notebook doesn't have a designated space to list partners, do it first.

Purpose - Often, but not always, from the lab handout or lab manual. Examples: "To determine..." or "To examine..."

Scientific Hypothesis - Your original work here: A good format is-

If <<statement about the independent variable>>, then <<statement about the dependent variable>> because <<rationale to support your thinking>>.

Independent variable -
Dependent variable -
Control -
Constants - ID at least 3 that are pertinent to the experiment.

Procedure

① In this column write out step-by-step procedures. This is done as pre-lab.

② You may use shorthand or abbreviate as you like, as long as you include adequate detail for replication by an outside reader.

③ A good rule is to make sure you have identified all materials used, how the lab is set up, and how data is collected

Notes and Observations

On this side you do two things.

* As a part of pre-lab, provide the purpose for most steps in your procedure. Ask yourself, "Would the lab work if I skipped this?"

* Make note of any modifications to procedure or observations you make during the lab.

SIGNATURE	DATE	WITNESS/TA	DATE

NOTE: INSERT BACK COVER UNDER COPY SHEET BEFORE WRITING

EXP. NUMBER	EXPERIMENT/SUBJECT	DATE
NAME	LAB PARTNER	LOCKER/DESK NO. / COURSE & SECTION NO.

Procedure, con't

④ Procedures may go on for multiple pages.

⊛ Include formulas used, if any!

Results

Title here

	Condition 1	Condition 2	Condition 3
Trial 1			
Trial 2			
Trial 3			
Trial 4			
Mean			
SD			
SEM			
2SEM			

Analysis

- The lab handout will specify requirements for each lab. This may include:
  - Graphs (follow College Board Requirements)
  - Additional calculations (Show formulas and a sample calc.)
  - Statistical Analysis - include a null and alternative hypothesis, test-statistic, p-value, and interpretation.

Conclusion Statement

- ~2 Sentences that addresses the purpose of the lab: what did you learn?

* Write neatly! I will dock points for sloppy work. Remember to use a ruler for data tables!

SIGNATURE	DATE	WITNESS/TA	DATE

Lab Scoring Rubric

→ With some modification, this scoring rubric will be used for the formal lab write-ups which are graded.

Area of Assessment	**Missing**	**Weak**	**Concerning**	**You can do better…**	**Nearly There!**	**Yes! Exemplary**
Introduction	0	1	2	3	4	5
	Introduction includes describing the purpose of the lab, writing a testable hypothesis, identifying the variables, control, and constants.					
Methods	0	1	2	3	4	5
	Methods are written in a two column format. On the left, stepwise directions should be written in a way that is sufficiently detailed that someone not in our class could execute the lab. The steps include all of the necessary materials integrated in the text (not a separate list). On the right, purposes to each step are indicated, procedural notes (including errors or potential sources of error) are made, and qualitative results/observations are detailed alongside the step at which they were noted.					
Results	0	1	2	3	4	5
	Results contain the quantitative data collected. Data is complete, organized, with appropriate units. Data tables meet the requirements of College Board.					
Analysis	0	2	4	6	8	10
	Analysis includes all calculations (with formulas and sample calculations), descriptive statistics (with formulas), graphs (following College Board standards), and statistical tests with appropriate hypotheses, appropriate work shown, and an interpretation of the results. Analysis is organized and easy to follow.					
Conclusion	0	1	2	3	4	5
	The conclusion statement, or abbreviated CER, makes a claim related to the purpose of the lab, uses multiple, specific pieces of evidence/data to support that claim, and then scientific principles in the reasoning that shows how the evidence supports the claim.					

Total Score: _____ / 30

The AP Bio Exam: The two portions of the exam are equally weighted.

Section I: Multiple Choice - 1 hour and 30 minutes

- Part A — 63 Multiple Choice Questions
- Part B — 6 Grid-In Questions
  - The grid-in questions focus on the integration of science and mathematical skills. For these responses, you will need to calculate the correct answer for each question and enter it in a grid on that section of the answer sheet.
  - Total scores on the multiple-choice section are based on the number of questions answered correctly.
  - Points are not deducted for incorrect answers and no points are awarded for unanswered questions.

Section II: Free Response - 1 hour and 30 minutes

- 8 Questions (2 long FRQ and 6 short FRQ)
- Of the 90 FRQ minutes, 10 are a mandatory reading/planning period, leaving you 80 minutes for writing.

Tips for Writing - AP Biology Exam Free Response Questions

DO!

- THINK first, WRITE second.
- The first thing that you should do is to carefully read the question. The second thing you should do is read the question, and the third thing you should do is read the question. Be sure that you answer the question that is asked and only that question, and that you answer all parts of it.
- Look carefully at all diagrams. Determine what they are telling you.
- Use the planning space to briefly outline the answer on the long FRQs. This will avoid confusion and disorganization. Thinking ahead also helps to avoid scratch-outs, skipping around, and rambling. Also, plan graphs and do math on scratch paper.
- Only once you've done all four of the previous bullet points may you begin to write your response. Write in dark blue or black ink in complete sentences. REQUIRED!
- Answer the question parts in the order called for and label the question parts (a), (b), (c) and so forth. It is best not to skip around within the question. Additionally, skip lines between parts so the reader clearly knows when you've moved on.
- Be sure to include the obvious (for example, "light is necessary for photosynthesis"). Answer the question completely, but do not ramble.
- If you cannot remember a word exactly, take a shot at it – get as close as you can. If you don't have a name for a concept, describe the concept.
- Carefully label any sketches or diagrams (they get no points otherwise) and use the skeleton provided or place them in the text at the appropriate place, not detached at the end.
- Do exactly what the prompt says. If it says "Give TWO…" then give only two. Any additional will not be scored. If you change your mind, cross out one and write another, but writing three does more harm than good. Similarly, if the prompt says "Identify" and you write "X *or* Y" you will almost never get the point even if one of them is correct. *Pick one and go with it.*
- Write on the lines! Anything written near the question prompt is considered part of your planning and will not be scored, even if it's correct.

DON'T!

- Don't underestimate the importance of using time to read and think.
- Don't waste time restating the prompt. You might use a few words of the prompt at the beginning of a sentence so your reader understands what question you are answering, but that's it.
- Don't waste time on background information or a long introduction. *Answer the question.*
- Don't use the words "it" or "they" – use NOUNS. You will not get the benefit of the doubt. For example, "They separate during meiosis I" does not allow the reader to know you mean homologous chromosomes rather than sister chromatids. Readers cannot interpret your writing, only take it for face value.
- Don't use a pencil, and don't use a pen with an ink color other than dark blue or black. Don't use a felt-tip pen because the ink seeps through the page and makes both sides of the paper hard to read.
- Don't panic or get angry because you are unfamiliar with a question. You probably have read or heard something about the subject OR everything you need to know is given in the prompt. The test is evaluating your ability to THINK. So, be calm and think.
- Don't scratch out excessively. One or two lines through the unwanted word(s) are sufficient.
- Don't write more than a very few words in the margin.
- Don't worry about spelling every word perfectly or using exact grammar.
- Don't write sloppily. It is easy for a grader to miss an important word when he/she cannot read your handwriting.
- Don't write ESSAYS. It's not the AP English exam. Just answer the questions.

AP Biology Contract

I have read and understand the *AP Biology Policies and Guidelines for Success*.
By signing below, I am indicating that I understand the difference between plagiarism and collaboration, what is considered cheating and the consequences to cheating or plagiarism.

I promise that all work submitted in AP Biology will be of my original work.

Student Name (print) _____

X _____Date_____

September 4, 2018

Dear Parents/Guardians,

To enhance the learning of certain concepts in AP Biology, some of the activities your child will perform this year include food items. The food is handled in sanitary conditions and none of the activities *require* your child to consume the food. However, after some activities, with your permission, I would like to give the students the option of eating the food.

Please fill out the form below and return it to your child to hand in by September 7th.

Thank you very much for your cooperation and support.

Sincerely,

Karen DeTrolio

cut and hand in ----------

Biology Food Permission Slip

Child's Name _____ Parent's Name _____ (Please Print)

Parent's Signature _____ Date _____

I _____, have read and understand the above information and
(parent/guardian)

_____ I give my child permission to eat the designated food and my child does not have food allergies.

_____ I give my child permission to eat the designated food and my child does have food allergies which are explained below.

_____ I **do not** give my child permission to eat the designated food.

PLEASE specify any food allergies: