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| Course Syllabus  Honors Biology  9th Grade |

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# Course Overview

Biology is an incredibly broad discipline, focusing on everything from the transportation of molecules within a cell to the migrations of caribou across the Arctic. From the creation of sugars in a plant’s leaves to the diversity of fungi in the canopy of a rainforest. What unifies Biology is its focus on the unity and diversity of all life on Earth. In this class, we will study Biology not as a checklist of facts and trivia to memorize. We will instead follow the example of the great thinkers of Biology: Aristotle, Francis Bacon, Charles Darwin, and many others. They did not simply sit with their books and memorize what others told them: they observed the natural world with open minds and asked questions. As they looked for answers, more questions appeared. We will begin this course by observing the natural world and asking questions. As we look for answers, we will be drawn deeper into our study of life: a leaf is green and veined, yes, but why? As we progress through the school year, we will uncover many different ways of answering that sort of question: biochemistry, genetics, evolution, ecology, and many more.

# Course Objectives

* Explore and understand the natural world using methods of observation, experimental design, modeling, measurement, and data interpretation.
* Apply mathematics and philosophy to class concepts to enhance understanding and integration of different disciplines.
* Understand the challenges encountered in science and approach information with a healthy degree of skepticism.
* Critically think about scientific topics and their application to real world scenarios.

# Course Materials

## Required Readings (provided):

Modern Biology; Holt, Rinehart, and Winston © 2012

## Supplemental Readings / References (provided):

* Honors Biology Lab Manual
* Minimum Requirements for Writing Assignments
* Works Cited Formatting Guide
* various scientific journal articles and essays throughout yea

## Required Class Materials (due in class August 12th, 2019):

## 2”, 3-ring binder (can be shared with other classes)

* Goggles (must purchase from site on Goggle Form)
* one container of Clorox wipes
* 6 binder dividers with tabs
* lined notebook paper
* lined notebooks
* pencil (mechanical ok) & erasers
* red ballpoint pen
* blue/black ballpoint pen
* highlighters
* lined 3”X5” index cards
* colored pencils
* student scissors
* small, portable stapler *with staples*
* scientific or graphing calculator
* ruler with metric units (cm, mm)

# Course Expectations

The study of life is filled with a symphony of both detail and complexity. Therefore, students will be required to be focused and participative in the classroom every day. Each student is responsible for maintaining an organized notebook and keeping track of all materials given out in the classroom or posted with homework assignments. Class notes will be given on a regular basis and will provide the scaffolding for the material that will be assessed on examinations. Labs will vary in complexity and length, but each student will be held accountable for understanding the relationship of the lab to the content being studied and how extensions of the lab can result in changes of data that follow pathways and rhythms. This class will serve to re-enforce prior mathematical concepts while introducing new ways of utilizing algebraic and statistical skills. The text, *Modern Biology*, will be used to supplement the material discussed in class as opposed to being the sole guide for our own exploration of how life works. All students are expected to proactively take responsibility for their own comprehension of the subject matter, seeking assistance whenever there is a need for clarification or further explanation. Respect for others is a necessity in order to maximize a student’s learning experience.

Students should always raise their hands before speaking and never interrupt the teacher or a fellow classmate. Class discussions are an exception to this rule. We will further discuss how to handle a discussion as the year unfolds. Only water in a closed water bottle is allowed in the classroom. This is a lab classroom. As such, food is NEVER permitted in the classroom.

# Tutoring Hours

**Tutoring will be conducted before and after school any day.**  Rather than being remedial instruction, tutoring is much more akin to office hours in a university setting. That is, tutoring is an opportunity for one-on-one discussion, help on homework, and to review material before assessments. **Students are expected to take responsibility for their own success in the course by seeking tutoring opportunities as needed; I encourage all students to try to come in for tutoring as often as they can.**

# Assignments, Assessments & Expectations

## Tests & Final Exams Tests will include all major assessments typically given at the end of a unit. Final exams are cumulative assessments that are given at the end of each semester to assess a student’s retention and overall understanding.

## Quizzes Quizzes can be announced or unannounced and will cover only material examined since the last quiz/test. Quizzes are given in order to assess a student’s basic understanding of the material, to aid students in learning which concepts they still need master, and to encourage students to always take full advantage of the homework assignments that require them to review class notes.

## Homework

Homework is usually assigned daily, although it may occasionally involve a review of that day’s notes as opposed to a written or reading assignment. Homework will often be reviewed the next day in class. Students are expected to correct their own papers or at the very least, supplement answers with additional information. Homework may be either checked for completion or graded based on the student’s thoroughness and dedication to improving the quality of his or her answers. Homework grades may also be taken on bell work questions, which are questions presented at the start of the next day’s class and may require the students to use notes from the previous day or draw on notes that should have been studied the previous night. Homework not turned in at the beginning of class the day it is due will be considered missing. **Homework that is not complete will be considered incomplete. Incomplete or missing homework will receive a grade of zero but is still due. Multiple missing or incomplete homework assignments may result in lunch or after school detentions, as determined by the instructor.** **Similarly, the instructor may require a student to make up missing homework or other items not completed in class, during student “free time” periods, such as lunch break.**

## Projects/Labs There will be at least one individual or group research project or formal lab write-up during each semester. The purpose of these projects/labs is for students to delve deeper into a specific topic and to develop their skills of critical thinking, collaboration, and project management. Students will receive individual grades on projects and labs, based on the physical product, presentation skills, and overall evidence of effort. Late or missing long-term assignments (labs or projects) will be issued zero or partial credit only, as determined by the instructor. *Students will be required to follow strict guidelines for lab write-ups as detailed in the Biology Lab Manual and Minimum Writing Requirements distributed at the beginning of the year. Students are expected to maintain a copy of these guidelines in their binder for reference for the entirety of the year.*

## Participation

## The focus of learning should always be on learning and not grades, although striving toward mastery of material will most likely result in “good grades.” However, to succeed in this course, students must consistently display a strong sense of wonder, inquire deeply, have a positive attitude concerning the material at hand, be prepared and practice lab safety in addition to excelling on quizzes and assessments.

# Course Schedule & Grading

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| **Quarter 1** | **Quarter 2** | **Quarter 3** | **Quarter 4** |
| Introduction to Biology  -lab safety  -scientific method & observation  Biochemistry  Reaction Kinetics  Application of Biochemistry to Cell Functions  Characteristics and Origins of Life | Cell Structure and Function  Photosynthesis  Cellular Metabolism  Protein Synthesis (Central Dogma)  DNA Replication  Meiosis/Mitosis  Genetics Overview | Mendelian Genetics/Punnett Squares  Pedigree Analysis  Genetic Mutations  Evolution, Natural Selection, and Population Genetics  Ecology  Population  Communities | Prokaryotes  Bacteria/Infectious Diseases  Virus/Infectious Diseases  Unicellular and multicellular eukaryotes  Cell/Organ Communication  Anatomy and Physiology  -Musculoskeletal  -Nervous  -Immune & Circulatory  -Digestive, excretory, respiratory  Fetal Pig Capstone |

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| **Course Work** | **Percentage** |
| Tests | 40% |
| Quizzes | 10% |
| Homework | 15% |
| Projects and Labs | 20% |
| Participation | 15% |
| **TOTAL** | **100%** |

# Academic Policies and Institutional Resources

**Academy Policies and Procedures:**

All student work (tests, quizzes, homework, projects) will be returned within one week of submission, with minor exceptions. Essays, projects, and labs will be returned within two weeks of submission. Please refer to Scottsdale Prep’s Family Handbook pp. 26-38 for more information on the academy’s policies.

**Biology-specific General Policies and Procedures:**

**Before Class:**

* Please use the restroom before class; visits after class starts are reserved for emergencies only.
* You must bring all necessary homework, supplies, books, etc. with you when come to class. **No locker visits will be permitted.** Homework that is not on your person when you enter class is considered late.

**Entering the Class:**

* Please line up respectfully outside the classroom and do not enter until the teacher is present.
* Uniforms will be checked as you enter the classroom and appropriate measures must be taken to correct any clothing issues before a student can participate in class.
* Immediately upon ***silently***entering the classroom, complete the assignment posted on the board. When you are finished, write down the homework assignment in your agenda.
* When you exit the classroom, all trash should be removed and stools should be pushed up under the tables. I release you from class- not the bell. If you are the last class of the day, all stools should be placed quietly on the tabletops.

**Absences:**

* If you are absent, you have one day for each day you miss to make up assignments. If you are absent, you are responsible for checking the homework blog, completing missed work, and turning it in. *You will receive a zero for any missing assignments not made up within this time frame.*
* If you are absent for a major or minor assessment, you can expect to make up this assignment after school on the day you return. You are responsible for scheduling an appointment with the instructor to make up any missed assessments within a week of the original assessment date*. If you do not make up an assessment within one week of the original assessment date, you will receive a zero for that assessment.*
* If you are absent for a review day prior to a test, you are required to take the test with the rest of the class unless you have received permission from the instructor **prior to the day of the assessment** to reschedule.
* If you are absent for a lab, you are expected to schedule an appointment with the instructor to make it up.

# Additional Course-Level Specific Information

**Signature Page for Parents and Students:**

*Note: It is the STUDENT’S responsibility to return this form back to Mr. Maloney y by* ***MONDAY, 12 AUGUST 2019.***

**Student:**

***I have read and understand the contents of Mr. Maloney expectations concerning homework, class procedures, etc.***

Student’s name (print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

STUDENT SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Internet access:

\_\_\_\_\_\_\_\_\_ I DO have access to the internet outside of school.

\_\_\_\_\_\_\_\_\_ I DO NOT have access to the internet outside of school. I understand that I will be responsible for using the school computers for any assignment that requires I use the internet.

**Parent(s):**

Primary Parent Contact: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Best Phone Number During Day \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Night \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Preferred e-mail address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Preferred Method of Contact and best time to contact \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Please write down any food allergies, health restrictions or any other concerns/considerations which you feel I should be aware of: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**All information will be kept strictly confidential.**

**Please review the below items and sign:**

1. I have reviewed all materials in this syllabus packet and I understand that my child is responsible for reviewing and understanding the material outlined in this syllabus.
2. I will ensure that any behavior issues not closed by the end of the school day, will be addressed at home.

PARENT/GUARDIAN SIGNATURE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_