

MARINE BIOLOGY SYLLABUS

Mrs. Miller

Welcome to my class and welcome to the wonderful and exciting world of Marine Biology. As a person who has a great passion for marine science and research, it is my hope and my goal to help you understand the world of marine biology. Since you have already completed biology, you know that every species on our earth possesses certain adaptations that allow it to survive in a given environment. In Marine Biology, I will teach you how organisms have adapted to one of the harshest environments on earth, the ocean. How does an anglerfish find a mate when it lives in complete darkness? How was the Great Barrier Reef formed? Why is it important for us to reduce ocean pollution? It is one of my goals to teach you how life has adapted to this challenging environment and why it is important for us to protect our marine resources.

MARINE BIOLOGY CURRICULUM:

Science of Marine Biology (Chapter 1)

Marine Geology (Chapter 2)

Physical/Chemical Features of the Ocean (Chapter 3)

Microbes (Chapter 5)

Algae (Chapter 6)

Invertebrates (Chapter 7)

Fish (Chapter 8)

Marine Animals (Chapter 9)

Intertidal Regions (Chapter 11)

Estuaries (Chapter 12)

Coral Reefs (Chapter 14)

Open Ocean (Chapter 15)

The Deep Sea (Chapter 16)

Galapagos Islands (Outside resources)

MARINE BIOLOGY BENCHMARKS (an extension of the Biology Benchmarks):

Upon completion of the Marine Biology course, students will know that:

1. Plate tectonics operating over geologic time has changed the patterns of land, sea, and mountains on Earth's surface.
2. Heating of Earth's surface and atmosphere by the sun drives convection within the atmosphere and oceans, producing winds and ocean currents.
3. Stability in an ecosystem is a balance between competing effects.
4. Evolution is the result of genetic changes that occur in constantly changing environments.
5. As a result of the coordinated structures and functions of organ systems, the internal environment of an organism remains relatively stable (homeostatic) despite changes in the outside environment.

REQUIRED MATERIALS:

1. Textbook: Marine Biology (Castro and Huber)
2. Marine Biology Coloring Book (Niesen)
3. Scientific Novel: Oceana: Our Endangered Oceans and What We Can Do to Save Them (Danson and D'Orso)
4. Appropriate writing utensils
5. Colored pencils (lots of colors)
6. College ruled notebook paper

CLASS REQUIREMENTS:

Homework:

Homework will generally be assigned every class period and will be due the following class period at the beginning of the period. Homework will consist of reading sections of the chapters, taking notes and answering questions from the chapters. Coloring diagrams will also be assigned from the coloring book. Every class period that homework is due, I will walk around the class and check your homework (this includes reading notes and chapter questions, and/or coloring diagrams). If your homework is complete, it will be stamped. This stamp acknowledges that your homework is complete and on time. If you are absent on the day that homework is stamped, it is **your** responsibility to see me for a stamp. Please note that if you do not have completed homework on the day it is stamped, you **cannot** receive a stamp for it later.

On the day of an exam, you will turn in all of your homework for that unit (reading notes, chapter questions, coloring diagrams). It is at this time that you will receive a grade for your work. If for any reason, you did not complete your homework when it was due and therefore did not receive a stamp, you may still do the homework and turn it in on the day of the test for partial credit. Please be aware that **I do not accept late homework**. If you do not turn in your homework at the **beginning** of the test period, you will not receive credit, even if all of your assignments have stamps

Labs and Lab Safety:

I will attempt to have several labs for you to engage in every month. The labs will relate to the topics covered in any given unit. You will work in pairs or groups depending on the lab protocol. Labs will include a worksheet that you will be required to complete and hand in for credit. They will usually be due at the end of a lab. They may also be due the next day if more time is needed to complete them.

For your protection, obey all lab safety rules. You will each receive a copy of lab rules. A copy will also be posted in the classroom. Some safety precautions include wearing protective goggles, latex gloves and lab coats, walking slowly, disposing of broken glass and sharp objects in the appropriate manner and paying attention to all instructions. **ABSOLUTELY NO FOOD OR DRINK IS ALLOWED IN THE CLASS ON LAB DAYS.**

A lab contract will be available online. Please read through the contract with your parents. At the end of the contract is a written agreement for you and your parents to sign acknowledging that you have gone through the lab safety contract. Please sign the contract and turn it in by the date I specify on the first day of classes.

Exams:

Exams will be given at the end of every unit. The exams will consist of true/false, definitions, fill in the blank, multiple choice, matching, short answer and essay. It is important for you to be present the day of the test. If you know you are going to be absent for a test, it is your responsibility to schedule a make up exam with me before the test. At the end of each term you will have a comprehensive final exam.

Literature Reviews:

Each quarter you will be required to read a journal article that I provide online. They will be marine science related articles and may highlight experiments that are being conducted or discuss current issues related to marine science. You will be required to write a one-two page review of the article and answer post article questions. One portion of one class period will be devoted to a class discussion of the article. You will be expected to participate in the discussion and contribute your thoughts and ideas.

The Catalina Experience:

In the spring, you will have the opportunity to partake in an overnight camping excursion on Catalina Island. You will board a vessel to White's Landing and participate in activities that may include hiking, fishing, kayaking, snorkeling, horseback riding, star gazing and lots more. More information will be available at a later date.

Field Guide Project:

You will be expected to complete a thorough natural history report of a marine animal selected from a prearranged list. You will give a very brief presentation of your animal. Once all reports and presentations are complete, reports will be collected, bound and duplicated to create a personal field guide highlighting each animal researched by every marine biology student.

Shark Dissection Report:

You will be expected to work with a partner on the shark dissection. Upon completion of the dissection, you and your partner will be expected to write a detailed report of your experience. You will receive guidelines for this report prior to the dissection.

Student Portfolios:

All assignments that earn a grade must be filed away in your student portfolio after you have looked them over and recorded your grade. This eliminates any possibility of graded work to turn up missing and it gives you an opportunity to maintain a collection of all your best work. Portfolios will be periodically reviewed by me and they may be periodically reviewed by other teachers and/or administrators. At the end of each semester you will write a reflection of your portfolio that discusses your best work and where you may need improvement. At the end of the semester I will also do file checks. All assignments must be in your file to earn points.

Book Review

At some point during the year, you will be expected to read the novel Oceana: Our Endangered Oceans and What We Can Do to Save Them by Ted Danson and Michael D'Orso. Once you have been asked to begin reading, we, as a class, will hold brief weekly discussions about some of the scientific topics described in the novel. Upon completion of the novel, you will produce a creative technology based project highlighting the content presented to you in the novel.

Extra Credit:

Every week I will write an interesting marine bio fact on the board. It is your responsibility to write down that information in your notebook. I may ask questions on the exams relating to the marine bio facts and you may earn extra credit points.

Participation:

You will be expected to participate in all activities. Your input is a valuable component to the success of this class as a whole.

GRADING:

Should you have any questions about current grades you can consult with me. No curves will be utilized. Your final semester grade will be based on accumulation of the following points

Points:

Homework: 20-40 points per unit
Labs: 20-40 points per lab
Exams: 100 points per exam
Literature Reviews: 20 points per review
Field Guide Project: 150 points total
Shark Dissection Report: 50 points total
Book Review: 75 points total
Portfolios: 50 points each semester
Final: 315-320 points per semester
Participation: 50 points per semester

Scale:

Grades will be calculated based on the scale that is set forth in the Student handbook.

STUDENT EXPECTATIONS:**Attendance:**

Everyday is important! Your success in Marine Biology is directly related to how often you are present. This class is challenging and moves at a steady pace. Students who miss material often have difficulties on the next exam, so please do not miss school unless it is absolutely necessary. Absences will cause you to fall behind and you will have to work even harder to catch up. In the event that you are absent, it is your responsibility to get that work that you missed. If you know you are going to be absent let me know ahead of time and we can make arrangements for you.

Make-ups:

It is important that you are present on exam days. If you miss class the day before a test and return the day of the test, you will be expected to take the test as scheduled. If you have missed two or more days before a test and return the day of the test, I will arrange for you to take the test at a later date.

Tardies:

Arriving to class late is unacceptable. It is your responsibility to get to class on time and be prepared to work! Being late to class is distracting for both your classmates and me. You are tardy if you are not in your seat when roll is taken. .

Restroom/Locker visits:

Any time that you need to visit the restroom or your locker, you must sign out on the clipboard next to the door. You will be allowed three “visits” each quarter at no penalty. If you make no visits, you may earn 5 points of extra credit. If you make one visit, you will earn 3 points of extra credit. If you make two visits, you will earn 2 points of extra credit. If you make three visits, you will earn 1 point of extra credit. If you make more than three visits, you will receive no extra credit.

Demeanor:

I expect you to be responsible, hardworking, excited and inquisitive. My job is to teach and your job is to learn. However, I do not want to be the only one doing my job. Your learning is achieved by your positive and inquisitive attitude. I expect you to engage yourself in thought provoking discussion, ask questions and participate in all activities. I want to you to have a good learning experience. Feel free to consult with me about any concerns.

I do not tolerate lying, plagiarism or cheating. There is no excuse for that kind of behavior! Please refer to your student handbook and the academic integrity handout to review the policy regarding this issue.

Office Hours:

Before school, break and lunch by appointment

Contact information:

smiller@ihs.immaculateheart.org

NOTE: I reserve the right to make any changes to this syllabus at any time

PARENT/STUDENT ACKNOWLEDGEMENT:

We, _____ (print **student** name) and _____ (print **parent/guardian** name) have read and acknowledge the rules and guidelines set forth in the Marine Biology syllabus.

Student signature: _____ Date: _____

Parent/Guardian signature: _____ Date: _____

Please read, sign and turn in by the date I specify on the first day of classes.