Biology
Text: Biology

Course Guidelines and Learner Expectations

Course Description: Sophomore biology is a course focusing on the life sciences. Students will have hands-on, active experiences throughout the year and will create a biology portfolio. Topics covered include: characteristics of life, ecology: population dynamics, cycles of matter, biodiversity, the cell: structure and function, energy transformations, diffusion and osmosis, taxonomy, reproduction and development. We will be covering a lot of material over the year, so this course is not designed as an "easy A." There will be homework, labs, and required readings. With all that being said, I am more than willing to help you succeed with meeting all course objectives by being available during power hour, as well as after school when needed.

Objectives: By the end of the year, you should be able to (this is not all inclusive):

- Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.
- Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.
- Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.
- Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
- Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.
- Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
- Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
- Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.
- Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

Required Materials:

- Textbook: Biology
- Notebook to take notes in
- Three Ring Binder or Folder to hold handouts/papers

Safety: Biology lab work can sometimes involve potentially hazardous substances and objects. For that reason, safety is a top priority. I will review any hazards associated with a lab with the class. There is no margin for error, so failure to prepare for a lab, improper use of safety equipment, or disregarding safety instructions will result in removing the student from the lab area and a **zero** for the lab. Repeat offenses will result in detention. Eating/Drinking is **NEVER** allowed on or near a lab table. There is no food or drink allowed in the lab area of the classroom – **EVER**.

Grading: This course is graded on a weighted system. Homework (5%), classwork (10%), and quizzes/minor labs (15%) are worth 30% of your grade as they are formative assessments. Tests (35%) and major labs/projects (35%) are worth 70% of the grade as they are summative assessments. **Do know that there are no retakes and no late work is accepted. NEW THIS YEAR: If your name ISN'T on your paper, it's a zero. I'm NOT chasing work.** It is YOUR responsibility to put your name on your paper. If work is illegible, it's a zero.

Throughout each quarter, grades are uploaded at least twice a week onto the school's online grading program, Web2School. I strongly suggest that you keep track of your grade there.

Homework - Homework will be assigned nightly and checked routinely for completion and/or effort. The purpose of homework is to supplement and reinforce classroom activities. You will need to read at home to prepare for the next class. There will be activities from your online textbook. These will be assigned several days in advance. Homework will also include problem solving, worksheets, and scientific observations. Unless specifically told otherwise, homework must be handed in before the start of class in order to receive full credit. Homework will not be accepted once it has been reviewed in class. I do not expect perfection on homework, but I expect you to try to answer every question. If you do not understand an assignment, you are probably not alone, **so ask questions!!**

Labs/Projects – All lab write-ups must be neat, complete and written according to the lab format, which will be given to you. Do not lose the directions for writing lab reports; you will be using them all year. You will be expected to make up any missed labs due to absences.

Quizzes - These will never be "pop" quizzes. You will always have advanced notice.

Tests - Tests consist of a variety of multiple choice, matching, fill-in the blanks, true/false, short answer, labeling of diagrams, and essays. To do well on my tests, you must study your notes. Any missed quizzes or tests must be made up no longer than 1 week after the original testing day. A zero will be entered in the grade book until the test is made up. If the test is not made up within 1 week, the zero will stand. All tests will be scheduled **at least two days** in advance and I will give you a guideline for material that will be covered on the test.

Absences: If you are absent, it is **your** responsibility to find out what you missed and to obtain notes, handouts, and assignments **from the website**, a fellow student, or as a LAST resort, the teacher. Generally, you will have 1 week to make-up work missed during an absence. It may be necessary for you to meet with me after school or in a free period to cover the material. If you are absent on the day of a test or quiz, you are expected to make it up the **NEXT DAY YOU RETURN**.

Late Work: Any assignment not turned in **by 2:30 PM the day it is due** is considered late and will receive a zero. If you are absent the day an assignment is collected, test or quiz is taken, a **ZERO** is put in the grade book. Once you hand in the missing work from an absence, the zero is removed. There are no late deadlines.

Extra Help, Office Hours, and Contact Information: I will be available for extra help Mondays and Wednesdays until 2:45 PM, Learning Lab every day, and other times by appointment. Make use of this time. I am more than happy to help you if you have questions or problems with anything we are working on.

I am available by phone at the school's phone number: (207) 425-2811
A better way to contact me is through e-mail at: smossy@sad42.us

I have a website where you can find all assignments, worksheets, review sheets, etc:

www.mossyscience.com

It is STRONGLY recommended that you check out the website to keep on top of missed assignments, etc.

Quick Syllabus Overview:

Quarter 1:	Quarter 2:	Quarter 3:	Quarter 4:
Intro to Science & Biology	Genetics	Ecology	Invertebrates
Chemistry	Biotechnology	Microorganisms & Disease	Vertebrates
Cells	Evolution	Protists	Human Body
Cell Cycle			Plants

Biology – 2024-2025

STUDENT'S NAME: _____ (please print)

PARENT or GUARDIAN NAME: _____ (please print)

HOME PHONE: _____

PARENT or GUARDIAN E-MAIL (for monthly newsletter):

_____

I prefer to be contacted by (please circle one): HOME PHONE E-MAIL

My student has access to the following at home (please circle all that apply):

PRINTER COMPUTER INTERNET CELL PHONE

I have read and understand the course expectations and guidelines. Safety is essential. I understand that a failure to follow safe practices in the laboratory may lead to a grade of **zero** on the lab and/or detention for multiple violations.

If there are any questions about an assignment, project, or lab, I understand that I can call, check the website, or e-mail and expect a prompt response from the teacher.

Student's Signature: _____

Parent/Guardian's Signature: _____

Date: _____