

BIOLOGY

Mrs. JaToria W. Floyd

I would like to welcome each of you to experience an exciting and informative course designed to bring awareness about the world we live in. I am a proud native of Macon County and I have successfully matriculated through the Macon County School System. I hold advanced degrees from Tuskegee University and Alabama State University. I have committed 16 years of service to the Macon County School System in the capacity of teacher, auxiliary coordinator and department chairperson. I am elated to be your instructor this year.

Contact Information

Booker T. Washington HS

3803 West MLK Highway

Tuskegee, AL 36083

Phone # 334-727-0073

Planning Period: 4th Block

Email:

Washingtonj@maconk12.org



Course Description

Welcome to General Biology!!! We will investigate the concepts and objectives found in the Alabama Course of Study in the area of biology. This year we will be incorporating a heightened degree of rigor using the A+ College Ready curriculum. We will examine experimental design, cell structure and function, energy flow in biogeochemical cycles and heredity just to name a few. In teaching these concepts, it is essential to provide engaging lessons that incorporate the latest technologies and resources. Therefore, we will explore these concepts using various Apple technologies, hands on laboratory experiments and home based science assignments /projects. Throughout the school year we will be preparing for important standardized tests and college entry. It is my goal to provide the optimum learning experience to all students.



- * Charged iPad and ear buds
- * 1.5-inch three ringed binder with pockets
- * composition notebook
- * dividers
- * loose leaf paper
- * Pencil or pen (**black or blue ink only**)
- * highlighter
- * liquid paper

Other Needed Materials

Posters, trifold project board (for science project), markers, crayons or color pencils, index cards, construction paper, glue/tape, personal pencil sharper, liquid paper, flash drive, valid email account.

Grading Categories and Percentages

Tests and Projects = 30%
Quizzes/Labs = 20%
Classwork = 15%
Acellus = 15%
Homework = 10%
Bell Ringers = 10%

Grading Scale

90%-100% =A
80%-89% =B
70%-79% =C
60%-69% =D
59% and below =F

Plagiarism

Cheating of any sorts will not be tolerated and a grade of **ZERO** will be issued on any assignment a student is caught cheating. (This includes copying from peers, unauthorized communication and plagiarism). Talking and/or communicating with others during an exam is considered cheating. Students can be written up and subject to suspension.

Virtual Learning Policies and Procedures

- ***Mute your microphone upon entering a virtual class session.**
- ***Show your face during virtual class. Because the class is interactive, call ins are discouraged.**
- ***Dress appropriately: No head scarfs, do-rags, revealing clothing or pajamas.**
- ***Log into each class session 5 minutes before the scheduled start time and remain in the session until you are dismissed by the teacher. (See attendance and tardy policy)**
- ***Have your class notebook and pen available during class sessions.**
- ***No eating or chewing while logged on.**
- ***Use the restroom prior to a class session and try to minimize outside distractions.**
- ***Attend class in a quiet, well lit, comfortable location.**
- ***Use appropriate language and or gestures during a class session.**
- ***Do not present your screen without permission.**

Late Work

Late work will only be accepted for documented excused absences. (*Documentation is required*) It is the student's responsibility to obtain and complete all make up work within 5 days following an excused absence. *If the student's absence is unexcused he/she will not be allowed to make up the assignment and a zero will be recorded for all missing assignments.

Late Projects and Labs

Late projects and labs will only be accepted in **extreme** emergencies. (*Documentation and proper notification is required*) Projects are due at the beginning of class and are considered late if not received within the first 10 minutes of class. If you know in advance that you will be absent the day a project or lab is due, please make arrangements to submit your assignment **early** or .. Projects can be submitted by parents or other designated persons.

Attendance

*Attendance is mandatory. Students are expected to be present and on time for each class session. After 3 unexcused absences, a chronic absentee form will be filed in the office. (*See Student Code of Conduct Manual.*) Students who are absent on the day of an exam are expected to make it up the following class session with an official excuse from the office. ***See instructor to verify an appropriate time.** Students who miss the review day are still expected to take the test and the material covered is their responsibility.

Tardies

*Students are expected to seated or logged on when the tardy bell rings. Students must submit a written excuse for entry 10 minutes after the tardy bell and sign the tardy log. A phone call and disciplinary referral will be issued after 3 offenses.

Classroom Procedures

- * Students will not be allowed to leave the classroom, except for extreme emergencies, in an effort to minimize traffic in the hall ways. Students are encouraged to use the restroom and get water before or directly after class. **Students with documented medical problems will be accommodated.*
- * Unauthorized use of electronic devices are **NOT** permitted in class. Cell phones should be silenced and not visible during class. Violator's property will be taken and held by administration for a given period of time. ****(See student code of conduct manual)***
- * Students are expected to be alert and participate during classes. Placing your head on the desk or sleeping during class is not permitted.
- * Eating, drinking, and chewing are **NOT** permitted in the classroom. Snacks should be kept in book bags. Water is permitted.
- * Keep your work area and classroom clean.
- * A 3-ringed notebook will be used to store lecture notes, homework assignments, bell ringers, writing prompts and vocabulary. Use tabbed dividers to separate each class category. Students are required to keep a copy of the laboratory safety procedures and course syllabus in the front of the notebook at all times. (digital and hard copies will be provided).

Biology ACOS Objectives

1. Use models to compare and contrast how the structural characteristics of carbohydrates, nucleic acids, proteins, and lipids define their function in organisms.
2. Obtain, evaluate, and communicate information to describe the function and diversity of organelles and structures in various types of cells (e.g., muscle cells having a large amount of mitochondria, plasmids in bacteria, chloroplasts in plant cells).
3. Formulate an evidence-based explanation regarding how the composition of deoxyribonucleic acid (DNA) determines the structural organization of proteins.
 - a. Obtain and evaluate experiments of major scientists and communicate their contributions to the development of the structure of DNA and to the development of the central dogma of molecular biology.
 - b. Obtain, evaluate, and communicate information that explains how advancements in genetic technology (e.g., Human Genome Project, Encyclopedia of DNA Elements [ENCODE] project, 1000 Genomes Project) have contributed to the understanding as to how a genetic change at the DNA level may affect proteins, and in turn, influence the appearance of traits.
 - c. Obtain information to identify errors that occur during DNA replication (e.g., deletion, insertion, translocation, substitution, inversion, frame-shift, point mutations).
4. Develop and use models to explain the role of the cell cycle during growth and maintenance in multicellular organisms (e.g., normal growth and/or uncontrolled growth resulting in tumors).
5. Plan and carry out investigations to explain feedback mechanisms (e.g., sweating and shivering) and cellular processes (e.g., active and passive transport) that maintain homeostasis.
 - a. Plan and carry out investigations to explain how the unique properties of water (e.g., polarity, cohesion, adhesion) are vital to maintaining homeostasis in organisms.
6. Analyze and interpret data from investigations to explain the role of products and reactants of photosynthesis and cellular respiration in the cycling of matter and the flow of energy.
 - a. Plan and carry out investigations to explain the interactions among pigments, absorption of light, and reflection of light.
7. Develop and use models to illustrate examples of ecological hierarchy levels, including biosphere, biome, ecosystem, community, population, and organism.

8. Develop and use models to describe the cycling of matter (e.g., carbon, nitrogen, water) and flow of energy (e.g., food chains, food webs, biomass pyramids, ten percent law) between abiotic and biotic factors in ecosystems.
9. Use mathematical comparisons and visual representations to support or refute explanations of factors that affect population growth (e.g., exponential, linear, logistic).
10. Construct an explanation and design a real-world solution to address changing conditions and ecological succession caused by density-dependent and/or density-independent factors.*
11. Analyze and interpret data collected from probability calculations to explain the variation of expressed traits within a population.
 - a. Use mathematics and computation to predict phenotypic and genotypic ratios and percentages by constructing Punnett squares, including using both homozygous and heterozygous allele pairs.
 - b. Develop and use models to demonstrate codominance, incomplete dominance, and Mendel's laws of segregation and independent assortment.
 - c. Analyze and interpret data (e.g., pedigree charts, family and population studies) regarding Mendelian and complex genetic disorders (e.g., sickle-cell anemia, cystic fibrosis, type 2 diabetes) to determine patterns of genetic inheritance and disease risks from both genetic and environmental factors.
12. Develop and use a model to analyze the structure of chromosomes and how new genetic combinations occur through the process of meiosis.
 - a. Analyze data to draw conclusions about genetic disorders caused by errors in meiosis (e.g., Down syndrome, Turner syndrome).
13. Obtain, evaluate, and communicate information to explain how organisms are classified by physical characteristics, organized into levels of taxonomy, and identified by binomial nomenclature (e.g., taxonomic classification, dichotomous keys).
 - a. Engage in argument to justify the grouping of viruses in a category separate from living things.
14. Analyze and interpret data to evaluate adaptations resulting from natural and artificial selection that may cause changes in populations over time (e.g., antibiotic-resistant bacteria, beak types, peppered moths, pest-resistant crops).
15. Engage in argument from evidence (e.g., mathematical models such as distribution graphs) to explain how the diversity of organisms is affected by overpopulation of species, variation due to genetic mutations, and competition for limited resources.
16. Analyze scientific evidence (e.g., DNA, fossil records, cladograms, biogeography) to support hypotheses of common ancestry and biological evolution.

PLEASE SIGN BELOW AND RETURN TO MRS. J. FLOYD

Print student name: _____

Student Signature: _____ **Date:** _____

Parent Signature: _____ **Date:** _____

Teacher Signature: _____ **Date:** _____