**Course Syllabus**

**Biology**

**Instructor: Mrs. MacKenzie Hafner**

**Dear Parent/Guardian,**

**I am so excited and honored to teach your child this year. I know I am pumped to see all the exciting opportunities and experiences this current school year will bring us. This syllabus is a way to outline the high expectations I have for all my students. These expectations will allow us to nurture a positive learning environment where every student is reaching their full potential.**

**Feel free to contact me at any time through email with any questions or concerns.**

**Please review the syllabus and sign this form. The syllabus can be found on our class Schoology page. If you would like a physical copy of the syllabus, please let me know.**

**Thank you,**

**MacKenzie Hafner**

**My child and I have read and discussed the classroom syllabus.**

Student Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Student Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Name (Print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

Email Address(es) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phone number(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cell Home Work

**Course Syllabus**

**Biology**

**Instructor: MacKenzie Hafner**

**Course Description:**

**18 weeks/1 credit**

**Required for graduation**

**Biology introduces students to the vast diversity of organisms and the characteristics that define life. Units include biodiversity, cells, interdependence, genetics, and evolution.**

**Inquiry based laboratory work is required.**

**Course Objectives:**

Student Learning Objectives come from the Alabama course of study science standards.

* **From Molecules to Organisms: Structures & Processes**

1. Engage in evidence-based argument to relate a cell’s function to the structure, function, and diversity of its components.
2. Obtain and evaluate information to explain the role of DNA and RNA in transcription and translation leading to protein synthesis and cellular function.

a. Use a model to describe the structure and sequence of DNA, including nucleotide structure, base pairing, and the structure of the helix.

b. Obtain and evaluate information to explore additional functions and regulatory roles of RNA, DNA, and protein, including their roles in gene expression and cellular differentiation.

c. Obtain, evaluate, and communicate information regarding how DNA and genetic technology apply to daily life

1. Develop and use models to explain how events during the cell cycle lead to the formation of new cells and repair of multicellular organisms, including cell growth, DNA replication, separation of chromosomes, and separation of cell contents.

a. Construct an explanation of the process of DNA replication during cellular division (S-phase).

b. Using observations of cell growth, construct an explanation of how the cell cycle leads to differentiation in tissue development.

1. Engage in argument from evidence to explain the regulation of cellular processes that maintain homeostasis, including active and passive transport.

a. Use models to illustrate how the structural characteristics of lipids and proteins in the cell membrane regulate cellular processes.

b. Construct an explanation of how the unique properties of water are vital to maintaining homeostasis in organisms.

1. Plan and carry out investigations and utilize results to explain the role and cycling of products and reactants involved in the cellular conversion of energy.

a. Construct an explanation of how the structural characteristics of carbohydrates and lipids store energy.

b. Use models of the reactants and products of photosynthesis to illustrate the conversion of light energy into stored chemical energy within cells.

c. Use models of the reactants and products of cellular respiration (both aerobic and Energy and Matter anaerobic) to illustrate how chemical energy is stored in the bonds of carbohydrates and lipids and converted to ATP and heat when the bonds are broken.

* **Ecosystems: Interactions, Energy, & Dynamics**

1. Develop and use models to illustrate interactions between ecological hierarchy levels, including biosphere, biome, ecosystem, community, population, and organism.
2. Develop and use models to illustrate the flow of matter and energy between abiotic and biotic factors in ecosystems, including loss of heat, 10% rule, and the conservation of matter.
3. Construct an evidence-based explanation of how density-dependent and density-independent factors affect population growth.
4. Obtain, evaluate, and communicate data to explain how the biodiversity of Alabama contributes to ecosystem services in the state.

a. Obtain and evaluate data to describe human impact on various Alabama ecosystems.

* **Heredity: Inheritance and Variation of Traits**

1. Engage in argument from evidence to support the claim that characteristics of an ecosystem contribute to its resilience and stability, including ecological succession and recovery from disturbance.
2. Use probability and statistical models to explain the variation of expressed traits within a population.

a. Use mathematics and computational thinking to predict patterns of inheritance, including dominance, recessiveness, codominance, and incomplete dominance.

b. Obtain, evaluate, and communicate information about how the interplay of heritable risk factors, somatic mutations, and environment influences human disease.

1. Develop and use an evidence-based model to illustrate the formation of reproductive cells through the process of meiosis.

a. Construct an explanation of how new genetic combinations and variations occur during crossover.

b. Obtain, evaluate, and communicate information about how errors during meiosis and environmental factors affect the expression of traits

* **Unity & Diversity**

1. Analyze and interpret data to support hypotheses of common ancestry and biological evolution illustrated by cladograms and phylogenetic trees.

a. Evaluate evidence supporting claims that viruses should be placed in a separate category from living things.

1. Analyze and interpret data pertaining to adaptations resulting from natural and artificial selection to explain the evolution of populations.
2. Engage in argument from evidence to explain how populations respond to changes in the environment that can lead to speciation or extinction.

**Classroom Rules and Expectations:**

* Be on time and prepared for class every day!
* Some assignments will be accessed virtually. Therefore, make sure you have your chromebook and charger available during class time.
* Make sure to use the restroom before class starts to minimize interruptions and to provide a better learning experience.
* On time means *in your seat* when the bell rings.
* Be respectful to those around you!
* Bullying is not tolerated
* No cursing
* Make sure you clean your work space before leaving the classroom
* Do not turn on sinks or throw trash in them
* Be engaged!
* Participate in class!
* *Stay of your phone during class time*
* Never be afraid to ask for help!
* Don’t cheat!
* A student who cheats will not receive credit for the work in question. If any other student has cooperated in the cheating, that student is also considered to have cheated and will not receive credit. Cheating students will also be subject to the consequences in the disciplinary consequences in Section XXII of this CSC.
* Cheating is defined to include, but is not limited to: (a) copying someone else's work in or out of class and identifying and submitting it as your own (b) failing to quote and/or list appropriate citations for material derived from published sources (including the Internet) and identifying and submitting it as your own (c) the use of unauthorized notes, other materials, or assistance during the accomplishment of graded work in or out of class (d) any other situation in which the student attempts to or accepts credit for work not his or her own.
* Late work
* All assignments should be turned in on time
* I will accept late work one day late for half credit. After one day, no credit will be given.
* If there are extenuating circumstances, please contact me

**Technology**: Cell phones and earbuds/headphones will not be allowed to be used during classroom instruction time. Phones and earbuds/headphones will be put away in a location designated by the teacher and placed in silent mode. In secondary schools, students will have access to their phones and earbuds/headphones outside of classroom instruction time such as between classes and lunch. Failure to follow these procedures will result in a disciplinary referral to the office.

**Classroom Management Plan:**

* Verbal reprimand
* Conference with student with parent contact
* Withdrawal of privilege(s) with parent contact
* Other consequences determined to be reasonable and appropriate by the school administration.

**Accommodations:** Requests for accommodations for this course or any school event are welcomed from students and parents.

**Concerning Laptop Utilization:** Student laptops should not be hard-wired to the network or have print capabilities. 2. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers. 3. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops. 4. Laptops and other electronic devices will be used at the individual discretion of the teacher.

**Turnitin Notice:** The majority of writing assignments in this course will be submitted to Turnitin via the Schoology learning platform. The primary focus of this software is to help students become better writers and scholars. Turnitin generates a report on the originality of student writing by comparing it with a database of periodicals, books, online content, student papers, and other published work. This program will help students discern when they are using sources fairly, citing properly, and paraphrasing effectively - skills essential to all academic work.

Students will have the opportunity to review their Turnitin originality report and will have the opportunity to make revisions before submitting their work for grading. Once their work is submitted, teachers have the opportunity to view the student's originality report and grade accordingly.

**Grading Policy:**

Test grades will account for 70% of the 9-weeks grade, with the remaining 30% being determined by quiz/daily grades. The grading scale is as follows: A (90-100%), B (80-89), C (70-79), D (65-69), and F (below 65). Grades will be a reflection of mastery of the standards. Make sure all absences are excused as class work can be made up and graded for excused absences only. The final exam counts for 20% of the final grade.

**Make-Up Work Policy:**

If you miss class, all assignments will be on schoology.

Students are permitted to make up work, tests, and other assignments, activities, etc., when absences are excused. Under normal circumstances, it is expected that students will submit previously assigned work upon return to school after an excused absence. All work missed on the day(s) of excused absence(s) must be made up within **three school days** after returning to school. However, for extended excused absences when homebound services are not necessary, the teacher may grant additional time, but **not to extend beyond two weeks** past the return to school. It is the joint responsibility of student and parent to ensure a student makes up work following excused absences. Teachers may alter assignments, tests, work, activities, etc., as necessary to ensure an accurate evaluation of the student's performance after an excused absence

**Course Materials:**

Students will need to bring the following Materials with them to class Every Day:

-Computer / Chromebook / Device

-Notebook / Binder

-Pen or Pencil

**My wish list:**

These are not required but would be very helpful for my classroom!

* Copy paper
* Lined paper
* Tissues
* Lysol wipes
* Paper towels
* pencils/pens

**Course Syllabus**

**Biology Fall 2024**

**Instructor: MacKenzie Hafner**

| **18 - WEEK PLAN\*** | |
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| **WEEK 1** | **Introduction to Biology**  **Lab safety and exploration** |
| **WEEK 2** | **Chemistry of life & water properties** |
| **WEEK 3** | **Chemistry of life & water properties** |
| **WEEK 4** | **Cells (Objective 1)** |
| **WEEK 5** | **Cells (Objective 1)** |
| **WEEK 6** | **Cell cycle (Objective 3)** |
| **WEEK 7** | **DNA (Objective 2)** |
| **WEEK 8** | **DNA (Objective 2)** |
| **WEEK 9** | **Heredity (Objective 11-12)** |
| **WEEK 10** | **Heredity (Objective 11-12)** |
| **WEEK 11** | **Homeostasis (Objective 4)** |
| **WEEK 12** | **Homeostasis (Objective 4)** |
| **WEEK 13** | **Photosynthesis & Cellular Respiration (Objective 5)** |
| **WEEK 14** | **Ecosystems (Objectives 6-10)** |
| **WEEK 15** | **Ecosystems (Objective 6-10)** |
| **WEEK 16** | **Unity & Diversity (Objectives 13-15)** |
| **WEEK 17** | **Unity & Diversity (Objectives 13-15)** |
| **WEEK 18** | **Review for final exam & exams** |

**\* This syllabus serves as a guide for both the teacher and student; however, during the term it may become necessary to make additions, deletions or substitutions.**