Austin Road Middle School

"Exceeding Expectations Every Day"

Life Science Course Syllabus

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Austin Road Middle School Vision

Austin Road Middle School will cultivate an environment for creativity, innovation and leadership where we exceed expectations everyday.

Austin Road Middle School Mission Statement

Austin Road Middle School strives to develop a nurturing school community that encourages academic success for each scholar through a rigorous curriculum and extracurricular opportunities supported by dedicated teachers and staff. Each scholar will become a contributing citizen of our community and global environment.

Course Description

Seventh grade students keep records of their observations, use those records to analyze the data they collect, recognize patterns in the data, use simple charts and graphs to represent the relationships they see, and find more than one way to interpret their findings. They make and use observations to explain the diversity of living organisms and how the organisms are classified, how they reproduce and how genetic information is passed from parents to their offspring. They use different models to represent systems such as cells, tissues, and organs. They use what they know about ecosystems to explain how cycles and energy flows through the ecosystem matter. They use the concepts of natural selection and fossil evidence to create explanations about the diversity of life that they see. Seventh graders plan and carry out investigations, describe observations, and show information in graphical form. The students replicate investigations and compare results to find similarities and differences. The middle school life science course is designed to give all students an overview of common strands in life science including, but not limited to, structure and function, ecosystems, cells and genetics, and evolution.

6th Grade Life Science Content Standards

The student will be able to demonstrate mastery in the following Georgia Performance Standards:

S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.

a. Develop and defend a model that categorizes organisms based on common characteristics.
b. Evaluate historical models of how organisms were classified based on physical characteristics and how that led to the six kingdom system (currently archaea, bacteria, protists, fungi, plants, and animals).

S7L2. Obtain, evaluate, and communicate information to describe how cell structures, cells, tissues, organs, and organ systems interact to maintain the basic needs of organisms.

a. Develop a model and construct an explanation of how cell structures (specifically the nucleus, cytoplasm, cell membrane, cell wall, chloroplasts, lysosome, and mitochondria) contribute to the function of the cell as a system in obtaining nutrients in order to grow, reproduce, make needed materials, and process waste.
b. Develop and use a conceptual model of how cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms.
c. Construct an argument that systems of the body (Cardiovascular, Excretory, Digestive, Respiratory, Muscular, Nervous, and Immune) interact with one another to carry out life processes.

S7L3. Obtain, evaluate, and communicate information to explain how organisms reproduce either sexually or asexually and transfer genetic information to determine the traits of their offspring.

a. Construct an explanation supported with scientific evidence of the role of genes and chromosomes in the process of inheriting a specific trait.
b. Develop and use a model to describe how asexual reproduction can result in offspring with identical genetic information while sexual reproduction results in genetic variation.
c. Ask questions to gather and synthesize information about the ways humans influence the inheritance of desired traits in organisms through selective breeding.

S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.

a. Construct an explanation for the patterns of interactions observed in different ecosystems in terms of the relationships among and between organisms and abiotic components of the ecosystem.
b. Develop a model to describe the cycling of matter and the flow of energy among biotic and abiotic components of an ecosystem.
c. Analyze and interpret data to provide evidence for how resource availability, disease, climate, and human activity affect individual organisms, populations, communities, and ecosystems.
d. Ask questions to gather and synthesize information from multiple sources to differentiate between Earth's major terrestrial biomes (i.e., tropical rain forest, savanna, temperate forest, desert, grassland, taiga, and tundra) and aquatic ecosystems (i.e., freshwater, estuaries, and marine).

S7L5. Obtain, evaluate, and communicate information from multiple sources to explain the theory of evolution of living organisms through inherited characteristics.

a. Use mathematical representations to evaluate explanations of how natural selection leads to changes in specific traits of populations over successive generations.
b. Construct an explanation based on evidence that describes how genetic variation and environmental factors influence the probability of survival and reproduction of a species.
c. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, and extinction of organisms and their relationships to modern organisms.

Course Outline

Unit 1	**Matter and Energy in Organisms and Ecosystems**	**(approximately 8 weeks)(Aug.-Sept.)**
Unit 2	**Structure, Function, and Information Processing**	**(approximately 10 weeks) (Sept.-Dec.)**
Unit 3	**Growth, Development and Reproduction of Organisms, Natural Selection, and Adaptations**	**(approximately 7 weeks) (Jan.-Feb.)**
Unit 4	**Classification and the Diversity of Organisms**	**(approximately 4 weeks) (Feb.-March)**

Textbooks and Materials

Textbook: Georgia Science: Grade 7 by Glencoe Science (Used in class as a reference)

The student must provide:

- **Composition Notebook.**
- **Plastic 3-pronged pocket folders (2)**
- **Writing Utensil (Pencil/ Pen- blue or black ink ONLY)**
- **(2) Glue Sticks**
- **Lined loose-leaf paper (Daily)**
- **Colored Pencils**
- **Scissors**
- **Metric Ruler**
- **Flash Drive (2GB or higher)**

Course Evaluation Categories

- **Practice Work: Max 25%**
  Labs/Classwork 15%
  Homework 5%

Notebook 5%

- **Assessment: Max 60%**
  Tests/Projects 20%
  Quizzes 20%
  CSA (Common Summative Assessments) 20%
- **Final Exam: 15%**

Total: 100 %

Expectations

Assignments that are not submitted on time will receive an "M" (missing) within Infinite Campus gradebook. Not submitting assignments is a behavioral characteristic that should not receive an academic penalty. ARMS wishes to create a more responsible scholar/person and address said behavior(s) through reflection activities, as well as constructive dialogue. In doing so, our hope is that scholars will begin assuming responsibility for ensuring that their work is submitted on time, and that the quality therein far exceeds our expectations. All scholars will be given ample opportunities to submit their work through activities to include but not limited to working lunch, before/after school tutorial, etc. All work assigned an "M" (missing) within Infinite Campus will remain as such during the term in which the scholar's assignment was due. **Upon the completion of the term, any assignment that is not submitted, as required, will then result in the scholar receiving a grade of zero (0%) to remain permanently within the gradebook. Finally, all assignments submitted after the assigned due date will not receive a late penalty and will be graded accordingly contingent upon satisfactory completion of all requirements within the assignment.**

Parent-Teacher Communication

Email is the best way to contact me. sabrina.sanders@henry.k12.ga.us
Homework assignments and announcements will be sent out via Remind 101

Remind 101 Codes

Remind 101 will be used to send updates and notifications for parents and students. Once the code is issued to your child, please take this opportunity to sign up ***using the appropriate class code and the first and last name of the student***. Do not register using a parent name. PLEASE USE YOUR STUDENT'S NAME TO REGISTER. Refer to the class schedule if you are not sure which class to enroll in.

Please note: It may be necessary to make adjustments in the above course syllabus based on the teacher professional observations and student needs.

Student Name: _____

Student's Signature_____

Parent/Guardian's Signature_____

Telephone Number (hm)_____ (wk)_____ (cell)_____

E-mail address_____