Cedar Hill High School STEM Center
1515 W Beltline Rd
Cedar Hill, TX 75104
Website: chisd.net

Course: Principles of Biomedical Science
Class location: T217
Teacher: Ms. Koné
Email: meagan.kone@chisd.net
Website: https://www.chisd.net/Domain/2339

Course Description:
Scholars will examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis.

Class Materials: Pen/Pencil, Chromebook

Grading Policy: Daily Assignments – 70%; Tests – 30%

Late Work: 10% off per day, after 5 days maximum of 50% credit unless otherwise noted on a project rubric.

Extra Help: Students can always email me with any questions they have. I am available before school on your designated class day between 6:50-7:20 AM by appointment.

Classroom Guidelines:

- Be on time and prepared for class with all required materials
- Be respectful of people, the classroom, and classroom materials
- Complete all assigned work on time
- Seek out extra help if needed
- Use appropriate language for the classroom
- No food, beverage, or gum
- Use electronic devices as directed for educational purposes exclusively

Curriculum Completion:

We will be accessing your coursework via *my.pltw.org*. On the first day of class you will create an account and will access that account every class thereafter. You will also receive a laboratory notebook in which you will complete the coursework accessed via my.pltw.org. Laboratory notebooks will remain in the classroom at all times unless approved by Ms. Koné.

Course Outline Topics:

Unit 1: Identity

The goal of Unit 1 is to engage students in a discussion of what it means to be human. Students investigate the body systems and functions that all humans have in common and then look at differences in tissues, such as bone and muscle, and in molecules, such as DNA, to pinpoint unique identity. Students play the role of forensic anthropologists as they unlock the clues of identity found in bone and use restriction analysis and gel electrophoresis to analyze differences in DNA. Students begin to study histology and build upon their knowledge of human tissue.

Unit 2: Communication

The goal of Unit 2 is for students to investigate modes of communication within the human body as well as the ways the human body communicates with the outside world. Students map the function of key regions of the brain and explore how the body detects, processes, and responds to internal and external stimuli.

Unit 3: Power

The goal of Unit 3 is for students to investigate the human body systems that work to obtain, distribute, or process the body's primary resources for energy and power—food, oxygen, and water. Students make a model of the digestive system and design experiments to test the optimal conditions for enzymatic digestion. They explore lung function by diagnosing and treating a patient with breathing problems and use probes and data acquisition software to monitor their own lung function. Students investigate the anatomy and physiology of the urinary system and run simulated urinalysis to identify health conditions and diagnose disease.

Unit 4: Movement

In Unit 4 students investigate movement of the human body as well as the movement of substances within the body.

- Joints and Motion
- Muscles
- Blood Flow
- Energy and Motion – Exercise Physiology

Unit 5: Protection

In this unit students explore ways in which the human body protects itself from injury and disease.

- The Skin
- Bones
- Lymph and Blood Cells

Unit 6: Homeostasis

This final unit focuses on the connection between all of the human body systems and examines how these systems work together to maintain health and homeostasis. Students explore how the body deals with extreme external environments as well as how the body reacts to and defends against injury and illness. Students begin to discuss and design medical interventions for a fictional case study. The activities in this lesson are an engagement for the subsequent course, entitled Medical Interventions (MI).

Academic Dishonesty:

Cheating is defined as giving and/or receiving unauthorized assistance on a test, paper, or other assignment. Cheating includes, but is not limited to, bringing notes into an exam, sharing/copying answers on an exam, or using an electronic device during an exam. Cheating will not be tolerated. The first offense will result in loss of credit for the assignment/ assessment with no opportunity to recover credit. Additional offenses will result in a referral to administration.

Plagiarism is defined as attempting to pass off the work of others as your own. Examples of plagiarism include copying a friend's work, buying papers, using quotes without citations, paraphrasing without citations, or resubmitting work from other classes (self-plagiarism). Plagiarism will not be tolerated. All work reports will be checked for plagiarism using Google Classroom. For the first offense, the student will be given the opportunity to create a new work for submission, for a maximum of 70% credit. Further offenses will result in loss of credit for the assignment and referral to administration.