Mrs. Jackson
Biology
Room #212
vjackson@efsd.net

Biology Course Description

The course content is reflective of the state standards and anchors used to design the Biology Keystone exam. It is structured around 2 big ideas: Cells & Cell Processes and The Continuity & Unity of Life. Students will learn the basic characteristics of all living things, the structure and function of biomolecules, the structure of the cell, before then learning cellular processes including methods of transporting substances into and out of the cell, and methods of processing energy including photosynthesis and cellular respiration. The second half of the year will include genetics, growth and development through cell division, evolution and the study of populations and their ecological interactions. At the end of this course, students will participate in the state-mandated Biology Keystone Exam. This class meets 6 periods per week

Grading/Grading Scale:

Your grades for this course will be comprised of tests, quizzes, notebook checks, homework, class work, labs, projects and **benchmark tests**.

******* You only have the amount of days that you were absent to make up any graded work without loosing points.

A 100—90
B 89—80
C 79—70
D 69—60
F 59

There will be a benchmark test at the end of each 9 weeks, along with a Final Exam at the end of the year; so keep all of your notes and review sheets!!!

There is a STATE KEYSTONE EXAM that you will take in May, which you have to pass to graduate!!!

Expectations:

PBIS Classroom Expectations

- LISTEN TO STAFF!
- MAINTAIN PERSONAL SPACE
- You should be **on time** to class **everyday**!!!!!!!!!!!!!!!!!!!!!!!!!!!!
- BE POLITE
- USE APPROPRIATE LANGUAGE AND TONE
- BE PREPARED FOR CLASS DAILY
- BE HONEST
- DO YOUR OWN WORK
- USE ELECTRONIC DEVICES ONLY WHEN PERMITTED
- DO YOUR BEST WORK
- CELEBRATE ACADEMIC SUCCESS
- HAVE A GREAT ATTITUDE AND LEARN SOMETHING KNEW!
- TAKE OWNERSHIP OF LEARNING

SCIENCE ACADEMIC INTEGRITY

- TRY! LISTEN! THINK!
- **Use your iPad and phone for educational purposes only!!!!!!!**
- FOLLOW DIRECTIONS! READ!
- BE SAFE IN LAB!
- DO NOT CHEAT!
- DO NOT GET OFF TASK.
- **Do not damage any of the school property.**

MRS. JACKSON'S RULES

- **Once the bell rings you should be in your seat doing the bell ringer on the board, GET BINDER OUT AND BE PREPARED.**
- You should **not be talking while I am talking**, **or another student is talking**: it is very disrespectful!!!!!!!!!!!!!!
- HAVE A POSITIVE ATTITUDE!
- BRING A PENCIL OR PEN DAILY
- BRING YOUR BINDER DAILY
- BRING IPAD DAILY AND IT MUST BE CHARGED
- Treat your classmates with respect.
- **Do not bring in any food or drinks etc. into the classroom.**
- **KEEP CELL PHONES AWAY AS YOU WILL HAVE TO PUT THEM IN A BIN IF I SEE THEM. THANK YOU!**
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Cheating:

DO NOT CHEAT! Anyone caught cheating on **any** test, quiz, or assignment will receive a **zero**. This includes copying work, looking up answers on the internet, and/or cutting and pasting someone else's work.

Tutoring:

I am available for tutoring during my free periods and I will be available after school to help you. If these times do not fit into your schedule see me and we can work out a time that is convenient.

Biology Syllabus
(Tentative Schedule)

(First Nine Weeks)

ch

1. Characteristics of Life - Ch 1.2, Ch13, Ch14

- Similarities / Differences Between Prokaryotic and Eukaryotic Cells
- Abiotic and Biotic Factors 13.2
- Characteristics All Organisms Share
- Symbiotic Relationships 14.1-14.2
- How organisms Eat 13.3, 13.4 ,13.6
- Microscope labs

2. HEIRARCHY OF LIFE- Ch13, Ch15, Ch 18

- Levels of Organization (Elementary Particles --> Biosphere) 13.1
- Cycles 13.5
- Biomes Example and relationship to cycles 15.3
- Kingdoms / Domains of Life (Characteristics of each Grouping) Ch18
- Relationship to why it is in that specific kingdom
- Importance of Classification (Species--Domain) Ch18

3. Scientific Method - Ch 1.3

- What is Science
- Steps of the Scientific Method
- Disproving Spontaneous Generation
- Controls and Variables

4. Chemistry of Life - Chapter 2.1and 2.2

- Solutions and Suspensions
- States of Matter
- Electron Configuration 2.1
- Types of Bonding 2.1
- Acids, Bases and pH 2.2
- Properties of Water 2.2

***M1 BENCHMARK EXAM

(Second Nine Weeks)

5. Biochemistry – Chapter 2.3-2.5

- Organic Compounds / Carbon Structure of Macromolecules 2.3
- Enzymes 2.5
- Chemical Reactions 2.4
- Repeating Patterns that Occur in Biological Polymers

6. Cell Structure and Function---Chapter 3.1-3.3

- Types of Cells
- Structure and Function of Organelles
- Chloroplast Structure / Function
- Compare with Photosynthesis Ch 4
- Mitochondria Structure / Function
- Compare with Photosynthesis Ch 4

***M2 BENCHMARK EXAM

(Third Nine Weeks)

7. Homeostasis and Cell Transport- Chapter 3.4-3.5

- Cell Boundaries
- Passive Transport
- Active Transport

8. DNA and RNA ---Chapter 8

- Review of Structure
- Process of Replication
- Types of Mutations---Chapter 8.7
- Protein Synthesis
- Transcription
- Translation
- How mutations can alter genetic information and the possible consequences

***M3 BENCHMARK EXAM

(Fourth Nine Weeks)

9. Mitosis---Chapter 5

- Chromosome Structure
- Review of Phases
- Cell Cycle Regulation
- Stages of the Cell Cycle which can also be influenced by other signaling molecules
- Cancer
- Karyotypes---Chapter 7
- Cell Differentiation

10. Meiosis---Chapter 6.1, 6.2, 6.6

- Review of Phases
- Formation of Gametes
- Fertilization
- How mutations in sex cells may be passed on to successive generations and that the resulting phenotype may help, harm or have little or no effect on the offspring's success in its environment. Chapter
- Results of Nondisjunction / Chromosome Mutations---Chapter 6.6

11. Genetics---Chapter 6.3-6.5; Ch 7

- Work of Gregor Mendel
- Review of Monohybrid and Dihybrid Crosses
- Advanced Genetic Crosses / Pedigree Analysis Ch7
- Probability Ch 6.5
- Genes / Types of Genetic Mutations Ch 8.7
- Related Advances in Genetic Engineering
- Sex-Linked, Polygenic---Chapter 7

12. Evolution---Chapter 10-12

- Interpret data from fossil records, anatomy and physiology, and DNA studies relevant to the theory of evolution
- Life on Earth arose as a single primitive prokaryote 4 billion years ago
- Darwin
- Evidence of Evolution
- Factors that affect natural selection
- Types of selection
- Speciation and the guiding processes
- Evolution of Speciation

***FINAL EXAM