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**Mr. Champ**

**Biology**

**Room #214**

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**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:**

* You should be **on time** to class **everyday**!!!!!!!!!!!!!!!!!!!!!!!!
* **You should have a pencil (#2) (tests), pen (notes), iPad and notebook in class everyday.**
* **Notebook—3 ring binder with 5 dividers inside**
* **(1. Bell Ringers/Exit Slips 2. Vocab 3. Notes 4. Labs 5. Work Sheets)**
* **We will be using the online textbook.**
* **Once the bell rings you should be in your seat ready to start class.**
* You should **not be talking** **while I am talking**, **or another student is talking**: it is very disrespectful!!!!!!!!!!!!!!
* You should always do your own work.
* You should not be afraid to ask questions in class.
* You should treat your classmates with respect.
* **Do not touch** any of the animals in the classroom, unless you get permission first!!!!!!!!!!!!
* **Do not lean back on, spin, or raise and lower the chairs!!!!!!!!!!!!**
* **Do not touch any of the gas or water faucets on the desks.**
* **Do not damage any of the school property.**
* **Do not bring in any food or drinks etc. into the classroom on lab days.**
* **Keep your cell phones in your pocket!!!!! I do not want to see them!!!**
* **Use your iPad and phone for educational purposes only!!!!!!!**

**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 NEW!
* 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.**

**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 **2nd** period and **9th period (M, T, W, and F)** (my plan) and I will be available before and 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)**

**1.**  **Characteristics of Life—Chapter 1.2, Ch. 13, Ch. 14**

* 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—Chapter 13, Ch. 15, 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—Chapter 1.3**

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

**4.** **Chemistry of Life—Chapter 2.1 and 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

**7. Homeostasis and Cell Transport—Chapter 3.4—3.5**

* Cell Boundaries
* Passive Transport
* Active Transport

\*\*\*M2 BENCHMARK EXAM

**(Third Nine Weeks)**

**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

**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

\*\*\*M3 BENCHMARK EXAM

**(Fourth Nine Weeks)**

**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.
* 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**

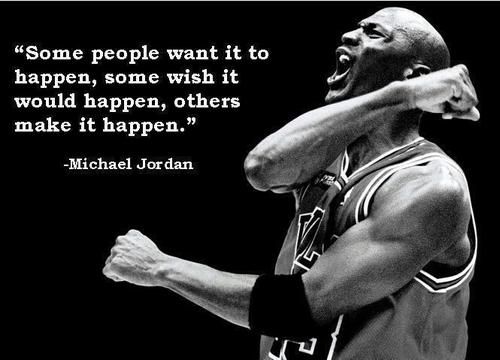
* Interpret data from fossil records, anatomy and physiology, and DNA studies relevant to the theory of evolution
* Life on Earth arose as a single primitive prokaryote 4 billion years ago
* Darwin
* Evidence of Evolution
* Factors that affect natural selection
* Types of selection
* Speciation and the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

\*\*\*FINAL EXAM

**“If you are satisfied with being good you will never be great.”**

***-Jim Collins-***

**“If you'll not settle for anything less than your best, you will be amazed at what you can accomplish in your lives.”**  
***-Vince Lombardi-***

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