August 9-10

Class Introduction and Orientation

1. Teacher Introduction
2. Classroom and Learning Rules
3. Grading System
4. White Board and Cabinets Orientation
5. Chrome Books Sites we will use.
6. Classroom Contracts

August 11-12

Biology Pre-Test (Scientific Reasoning Assessment)

Laboratory Orientation

1. Safety Scenario
2. Article in Lab Safety
3. Becoming Familiar with Lab Equipment
4. Laboratory Safety and Contract
5. **First Assignment -- All About Me**

Unit-1

August 16-19

Biology Process Skills and Characteristics of Living Organisms **Themes in the Study of Life**

1. What is Living?
2. Living or Non-Living
3. **Lab: Observing the Characteristics of Life**

August 23-26

Structure and Function of Cells

1. Prokaryotic and Eukaryotic Cells
2. Cellular Structure and Function
3. **Atoms, Molecules, and Chemical Bonds**

Unit -2

August 30-Sept 2

Structure and Function of Cells

3. A Tour of the Cell
4. Membrane Structure and Function
5. Function of Organelles
5. **Lab: Cell Structure**

Sept 5-9

Cell Transport

1. Cellular Transport, 4.1 Passive Transport, 4.2 Active Transport
2. General Structure of the Cell Membrane
3. Diffusion

Sept 13-16

Cell Transport

4. Osmosis
5. Active Transport
6. Water and the Fitness of the Environment
7. **Lab Understanding Osmosis (Water Purification)**

******Quarter Quiz******

Sept 20-23 --Grades Go In

1. Carbon and Molecular Diversity
2. Structure and Function of Macromolecules
3. Introduction to Metabolism

Break Sept 26-30

Oct 4-7

The Cell Cycle

1. Respiration: How Cells harvest Chemical Energy
2. Reproduction of Cells
3. Meiosis Life Cycles

Unit-3

Oct 11-14

Mitosis and Meiosis

1. Mitosis
2. **Lab Mitosis**

Oct 18-21

Mitosis and Meiosis

2. Meiosis
2. **Lab Meiosis**

Oct 24-28

Mitosis and Meiosis

3. Mutations
4. Sexual/ Asexual Reproduction

Nov 1-4

Photosynthesis

1. Sun and Energy
2. Chloroplasts (Structures)
3. Light Reactions and Calvin Cycle
4. **Lab: Light to Energy**

Nov 8-10 No School 11th

2. Significance of mitosis in cell replacement and tissue repair by stem cells.
3. The state that uncontrolled cell division can result in the formation of a tumor.
4. **Lab: Cell Division**

Nov 15-18

Cellular Respiration

1. Mitochondria
2. Glycolysis
3. **Lab: Mitochondria**

3. Fermentation and Lactic Acid
4. Kreb's Cycle
5. ATP and Cellular Energy, E.T.C
6. **Lab: Explain Cell Respiration in the Human Body**

*****Thanks Giving Break Nove 20-24*****

Nov 28-Dec 2

1. Prokaryotes and the Origins of Metabolic Diversity
2. Protists and the origin of Eukaryotes
3. Fungus

Dec 6-9

31. Anatomy of a Plant
32. Transport in Plants

Dec 13-16 --Grades Go In

******1. Pre Test Midterm******
******2. Midterm******

*****Winter Break Dec 19- Jan 6******

SECOND SEMESTER

Jan 10-13

33. Plant Nutrition
34. Plant Reproduction
35. Control Systems in Plants

Jan 17-20

DNA/ RNA and Protein Synthesis
1. DNA/ RNA Structure
2. Replication
3. Lab Make a DNA

Jan 24-27

DNA/ RNA and Protein Synthesis
6. From Gene to Protein
7. The Genetics of Viruses
3. Transcription

Jan 31 - Feb 3

4. Translation
5. Protein Synthesis

Feb 7-10

Genetics and Heredity
1. Mendelian/ Non-Mendelian Heredity
2. Punnett Genetics

******Quarter Quiz******

Feb 14-17 ---Grades Go In

3. Mendel and the Gene Idea
4. The Chromosomal Basis of Inheritance
5. The Molecular Basis of Inheritance

*****No School Feb 20-24*****

Genetics and Heredity
3. Pedigrees
4. Genetic Disorders
5. Lab: Heredity

Feb 28-Mar 3

Evidence of Common Ancestry and Diversity
3. Similarities of cellular processes and structures
4. Comparisons of DNA sequences between species

Mar 7-10

Biological Molecules and Enzyme Action
1. Macromolecules
1.1 Carbohydrates

Mar 14-17

Biological Molecules and Enzyme Action
1.2 Proteins
1.3 Lipids

Mar 21-24

Biological Molecules and Enzyme Action
1.4 Nucleic Acid
2. Enzymes

Mar 28-31

Biogeochemical Cycles
1. Water and Oxygen Cycles
2. Carbon Cycle
2.5. Lab -- Water Cycle

April 4-6 no school on 7th

Biogeochemical Cycles
3. Nitrogen Cycle
4. Phosphorous and Sulfur Cycles
5. Lab: Rocks

April 18-21

Ecosystem Dynamics, Functioning, and Resilience
1. Habitat and Niche
2. Limiting Factors
3. Carrying Capacity

NO School **April 11 -14 Easter**

April 25-28

Ecosystem Dynamics, Functioning, and Resilience
4. Ecological Relationship
5. Ecological Succession

May 2-5

Biodiversity and Humans
1. Biodiversity
2. Human Impacts on the Environment
    A. Habitat destruction
    B. Pollution
3.Lab: Create Slide Show Choose a Species

May 9-12

Biodiversity and Humans

C. Introduction of invasive species
D. Overexploitation
E. Climate change

Lab: Oil from Waste

May 16-19

Evolution

1. Darwin's Theory of Evolution
   A. Natural Selection
2. Adaptation

Creationism vrs Evolution

1. Big Bang
2. Universal Outer Rim
3. Bio Diversity
4. The Big Picture (evidence that mankind is still young)

& Macro vrs Micro

5. Lab: Using the Scientific Reasoning, write an argument for what you believe using creditable scientific support.

May 23-26

Unit Eight: Ecology

Introduction to Ecology.

1. Diverse Environments of the Biosphere: An
2.. Population Ecology
3. Communities
4. Ecosystems
5. Behavior.

May 30 - June 2

*****Final Pre Test*****

*****Final*****