**Things to Know:**

**Homeostasis**

* Be able to define and recognize

**Big 4**

* Monomer and polymer match up
* Another name for carbs/proteins
* Examples/uses of each
* Info on enzymes specifically
  + Substrate
  + Active site
  + Activation energy
  + Specificity
  + Denaturization
* Nutrient Testing

**pH**

* Acid versus Base
* Buffers

**Cells**

* Organelles: mitochondria, chloroplast, ribosome, cell membrane, nucleus
* Prokaryote versus Eukaryote
* Plant versus Animal
* Form fits function
* Cells having more of a certain organelle than others
* How can all cells have same DNA but function differently?

**Cell Transport**

* Cell Membrane
* Passive versus Active
* Passive: Diffusion, Osmosis, Facilitated Diffusion
* What happens if you put a freshwater\_\_\_\_\_\_\_\_ in salt water?
* What happens if you put a saltwater \_\_\_\_\_\_\_\_\_ in freshwater?

**Ecology**

* Autotroph versus Heterotroph
* Biotic versus abiotic
* Trophic levels
* Biomass
* Energy transfer
* Food chains and food webs
* Predation
* Competition
* Symbiosis
  + Mutualism
  + Commensalism
  + Parasitism
* Carrying capacity
* Limiting factors
* Succession
* OPCEB

**Cycles in Nature**

* Carbon
* Nitrogen
* water

**Photosynthesis and Cell Respiration**

* Equations
* Where and who?
* Aerobic versus anaerobic
* Alcoholic versus lactic acid
* ATP

**Cell Cycle**

* IPMATC
* 3 parts to interphase
* Mitosis versus Meiosis
* Cytokinesis in plants versus animals
* Diploid versus haploid
* What is the point of sexual reproduction
* Crossing over
* Independent assortment
* Gamete versus zygote

**DNA versus RNA**

* What bond holds DNA together?
* Nucleotides
* Purpose
* Structure
* Mutations- types, beneficial/harmful, passing to offspring
* Stem Cells- differentiation and specialization
* DNA-> gene -> protein

**Scientists**

* Mendel
* Watson and Crick
* Darwin
* Linnaeus

**How to interpret Graphs**

* Reading title
* Reading axis

**Genetics**

* Law of Dominance
* Law of Segregation
* Law of Independent Assortment
* Basic Punnetts
* Phenotype versus Genotype
* Types of Inheritance (codominance, incomplete dominance, sex linkage, blood types)
* Karyotypes (monosomy and trisomy)
* Pedigrees

**Evolution**

* Artificial Selection versus Natural Selection
* Evidence of Evolution
  + Fossils
  + Homologous Structures
  + Vestigial Structures
  + Adaptations
* Genetic Drift
* Convergent and Divergent Evolution
* Galapagos Islands and Geographic Distribution
* Antibiotics/pesticides and resistance

**Animal Behavior**

* Innate versus Learned behavior
* Conditioning
* Habituation
* Estivation

**Classification**

* Cladograms
* Dichotomous keys
* Domains (bacteria, archaea, eukarya)
* Kingdoms (bacteria, archaea, fungi, protest, animal, plant)
* Taxonomic hierarchy

**Virus versus Bacteria**

* Treatment
* Characteristics
* Importance

**Human Impact**

* Global climate change
* Hole in the Ozone
* Acid Rain
* Invasive Species

**Plants**

* Vascular tissue
* Phloem and xylem
* Mosses, ferns, gymnosperms, angiosperms
* Stomata
* Cuticle

**Biotech**

* Transgenic organism
* Recombinant DNA
* Plasmid
* Gel Electrophoresis
* DNA Fingerprint
* Vector