

AP Midterm Review Topics:

Ch 1:

- Prokaryote vs. eukaryote cell structure
- Properties of living things
- biological organization
- characteristics of each of the 5 kingdoms
- Scientific Method
- Inductive vs deductive

Ch 2:

- Atom, molecule, element, compound, isotope,
- bonding, ionic, covalent, hydrogen bonding
- molecular shape and what causes it
- water and its importance to life
- hydrophobic / hydrophilic
- pH and buffers
- ** water activity
- ** Biological Shapes lab

Ch 3:

- Organic/ inorganic
- Monomers and polymers
- Major compounds (elements, molecules, uses)
- DNA vs. RNA. DNA structure.
- Protein structure 1°, 2°, 3° levels. What they are as well as what causes them.
- enzymes
- Base pairing in DNA

Prions:

- what are they
- examples of diseases
- Since everyone has them, why are they dangerous

Ch 4:

Cell theory

- organelles and their functions
- differences between plant and animal cells

Ch 5:

- cell membrane structure
- transport into and out of cells
- concentration gradients, active transport, facilitated diffusion
- exocytosis, endocytosis
- Tight junctions, gap junctions, plasmodesmata
- ** Diffusion & osmosis lab (dialysis tubing)/potato cores
- ** Cell membrane model and essay

AP Midterm Review Topics:

Ch 6:

- Exergonic/ endergonic
 - factors which effect enzyme functioning.
 - Induced fit hypothesis.
- ** Catalase lab

Ch 7:

- Be able to write the reaction for photosynthesis
- Structure of chloroplasts
- C3, C4 CAM

Ch 8 ATP

- Glycolysis, kreb's electron transport
- Be able to write the reaction for respiration
- Structure of the mitochondria
- fermentation, aerobic respiration- chemical reactions, comparison

Ch 9:

- DNA structure
 - DNA replication: Know the enzymes as well as their jobs
 - Okazaki fragments, antiparallel
- ** DNA replication game
**DNA spooling and DNA model building

Ch 10:

- transcription / translation
 - protein synthesis- know all the steps
 - ribosome structure and functioning
 - eukaryotes vs. prokaryotes
 - introns, exons, hnRNA, codon, anticodon,
 - How genes are regulated
 - prokaryote vs. eukaryote genome
 - Barr body
- ** Bead activity
** GUC

Ch 11:

- mitosis and meiosis-phases and differences between them
 - Binary fission & asexual reproduction
 - cancer cells
 - How does meiosis produce genetic variability
- ** Mitosis and meiosis lab

AP Midterm Review Topics:

Ch 12:

- Alleles, homozygous, heterozygous
- Mendelian genetics problems: monohybrid, dihybrid, sex linkage, multiple alleles(blood type), incomplete dominance or codominance
- Mendel's laws
- Genetic diseases/ chromosome diseases
- linkage
- ** fruit fly lab computer simulation
- ** Human pedigree activity
- ** Cat Lab

Ch 13:

- biotechnology
- cloning, PCR, DNA profiling, recombinant DNA, protein gel electrophoresis
- plasmids
- Genetic engineering
- Medical uses of biotechnology
- Ethical implications of biotechnology
- ** Transformation lab (paper)
- ** pGlo
- ** Jurassic Park

Ch 14:

Evolution independent study

- Evidences and history of evolution theory
- Process of evolution
- ** Darwin's brother

Ch 15:

- Population genetics
- Hardy Weinberg principle
- Genetic drift, bottleneck effect, founder effect
- Differential selection, directional selection, balanced polymorphism, kin selection, altruism
- ** Hardy- Weinberg lab

Ch 16:

- Allopatric speciation/ sympatric speciation
- Forms and causes of reproductive isolation

Ch 17:

- History of life on earth
- Make sure you can interpret cladograms

AP Midterm Review Topics:

Remember to study using:

old tests and labs

the Study Guide from your book

<http://www.users.nac.net/challoran/>

<http://www.prenhall.com/audesirk/>

you can register with the code in your text.