AP Bio Summer Assignment

In order to succeed in AP Biology you must have mastered the skills, vocabulary and concepts taught in Honors Biology. Everyone has had different background, but you need to all be at the same place once school starts. To even begin learning biology you have to master the vocab and the language of the vocab. You also need to learn how to learn by understanding how biology is taught. To do these three task, you will accomplish the following things listed below. To show mastery of these skills you will be given a SUMMATIVE test on the second day of school (8/11/2020) and it counts toward the 1st quarter grade so don't blow it off. The summative test will be somewhere around 40-50 multiple choice questions and any information in this assignment is fair game.

Summer To Do List:

1. Memorize the Latin/Greek list of prefixes/roots/suffixes. You need to make a quizlet, flashcards or something. This memorization is not a one-time task, you will be asked to use this knowledge everyday through the year and I expect you to know it.

2. In biology examples are used all the time to illustrate a principle or concept that students need to understand well. Students will be expected to take the ideas of that concept and then apply it to other problems. To do start this process I want you to research the following diseases and answer the following questions about EACH disease.

1. Tay-Sachs	5. Hemophilia	9. Measles
2. Huntington's	6. Cholera	10. Cystic Fibrosis
3. Sickle Cell	7. HIV	11. PKU
4. Malaria	8. Influenza	12. Diabetes

1. How does this disease occur (genetic, type of pathogen, autoimmune, or causative agent)
2. Elaborate you response to number one by explain HOW using as much vocab as possible.
3. DO NOT list the symptoms, explain why the symptoms appear (what is the disease doing to cause those symptoms)
4. Treatment if any.
5. Why do you think we use this disease to teach about biology.

Example: Use this as a reference to help you determine if you have gathered enough information.

Diphtheria is a disease caused by the bacteria *Corynebacterium diphtheria* which can be spread via respiratory droplets. Diptheria was known as the "Strangling Angel of Children" because it slowly cut off the victim's trachea by covering it is a thick, grey membrane. This membrane was impossible to cut or remove from the victim. The membrane is a result of a toxin that the bacteria produce. The toxin is what actually kills the cells in large numbers and they build up forming this membrane. The first treatment was a vaccine against the toxin that would teach the body to produce antibodies that would bind to the toxin and neutralize it. This disease is an example of how toxins produce by bacteria work, how toxoid vaccine work and why vaccine are the best idea ever.

Latin and Greek List:

Word	Definition	Example
Aden	Gland	Adenoids, Adrenaline, Adenoameloblastoma
Aero	Air	Aeroplane, aerator, aerobe,
Algo	Pain	Neuralgia, analgesic, nostalgia
Amph	Double, both	Amphibian, amphipathic, ambidextrous
Amyli	Starch	Amylase, Amylose,
Anti, an, a	Against, not,	Anticlimactic, abiotic, antibiotic
Aqua, Hydr	Water	Aquatics, Hydrology, Hydra, Aquarium
ase	Enzyme	Hydrolase, amylase, lipase,
Astro	Star	Astronaut, astrology, astronomy
]Athro	Joint	Arthritis, arthropod, arthroscopic
Auto	Self, same	Autocrat, automatic, automobile
Bar/o	Pressure, weight	Baric, barometer
Bene	Good, well	Benefit, begin, benediction
Bi, di	Two, double	Bicycle, dicot, divison,
Bio	Life, living	Biology, Antibiotic, Biosphere
Blast	Cell, immature cell	Blastula, fibroblast, blastoderm
Cancer	Crab	Cancer, carcinogen, cancerphobia
Carb	Carbon	Carbohydrate, carbon
Cardi/o	Heart	Cardiac, cardiogenic, cardiologist
Carn/I	Flesh	Carnivorous, carnal, incarnate
Cata	Down, against	Cataclysm, catastrophe, catacombs
Caust	To burn	Caustic, cauterize, holocaust
Centi	hundred	Centimeter, century, centigrade
Cephal/o	Head	Encephalitis, cephalic, cephalopod
Chemo	Chemicals	Chemosynthesis, Chemoautotroph, Chemotaxis
Chromo	Color, pigament	Achromatic, chromatography, monochromatic
Cide	To kill	Homicide, bactericide, insecticide
Co/m	Together	Communicate, Commensalism, Coagulate
Corp	Body	Corporation, corpse, corporal
Crypto	Hidden, secret	Cryptic, encrypt, cryptography
cycl	Circle, ring	Bicycle, cyclone, encyclopedia
Cyto	Cell	Cytoplasm, cytokinesis, cytoskeleton
De	Down, without	Dehydrate, denature, debug
Derm	Skin	Dermatologist, pachyderm, dermatitis
Di/plo	Two, twice	Diploid, dichromatic, digraph
Dia	Through, by	Dialysis, diagonal, diaphragm
Dynam/o	Energy	Dynamic, Dynamite,
Dys	Abnormal, bad	Dyspepsia, dyslexia, chondrodystrophia
Eco	House, household	Economy, ecosystem, ecology
Endo	Inside	Endothermic, Endoscope, endocrine
Epi	On, upon, over	Epidemic, epilogue, epicondyle
Equ/i	Equal	Equidistant, equation, equality
Ethno	Race, people	Ethnic, ethnocentric, ethnology
Eu	Good, well	Euphemism, euphoria, Eukaryote
Exo	outside	Extract, Exoskeleton, Exocytosis

Fer	Bear, carry, bring	Confer, fertilization, transfer
Frater	Brother	Fraternity, Fratricide, Fraternizer
funct	Perform	Defunct, function, malfunction
Gam	Marriage	Endogamy, polygamy, gamete
Gastr/o	Stomach	Gastric, gastronomy, gastritis
Gen/o/e	Birth, production	Genealogy, generation, genetic
Geo	Earth	Geology, geography, geosphere
Ger	Old age	Geriatrics, gerontology, gerontocracy
Germ	Vital part	Germinate, germane
Gono	Sexual, reproductive	Gonochorism, Gonorrhea, gonotrophic
Graph	Write	Lithograph, graphic, Phonograph
Halo, Hali	Salt	Halophile, Euhaline, Halimetric
Heli/o	Sun	Heliotropism, heliograph, helianthus
Hem/o/a	Blood	Hemorrhage, hemorrhoids, hemoglobin
Hemi	Half	Hemisphere, hemicycle, hemihydrophyte
Hepa	Liver	Hepatitis, hepatic, hepatotoxic
Herbi	Grass, plant	Herbicide, herbivorous, herbaceous
Hes, Here	Stick	Cohesion, Adhesion, Inheritance
Hetero	Different	Heterosexual, heterogenous
Histo	Tissue	Histology, histochemistry, histamine
Homo	Same, alike	Homogenous, homosexual
Hyper	Above (a standard)	Hyperactive, hypertension, hypercritical
Hypo	Below (a standard)	Hypoglycemic, hypothermia, hypotonic
Infra	Beneath, below	Infraorder, Infrastructure, Infrared
Inter	Between, among,	International, intersection, interstate
Intra	Within, inside	Intrastate, intravenous, introvert
Ism	Condition of	Mutualism, commensalism, paganism
Iso	Equal	Isobar, isometric, isothermal
Itis	Inflammation	Bronchitis, dermatitis, tendonitis
Kary	Nut	Prokaryote, Eukaryote
Kilo	Thousand	Kilometer, kilobyte
Kine	Motion, division	Kinetics, telekinesis, Kinesiology
Lact/o	Milk	Lactate, lactose, lactiphagous
Leuk/o	White, colorless	Leukemia, leukocyte, leuc/o
Lip, adip	Fat	Lipids, liposuction, adipose
Lysis	To loosen, dissolve	Analysis, biolysis, Lysosome
Macro	Large	Macromolecule, Macroeconomics, Macrodontia
Magn	Great, large	Magnify, magnificent, magnate
Mal	Bad, ill	Malcontent, malaria, malicious
Mater	Mother	Maternal, maternity, matriarch
Meter	Measure	Kilometer, micrometer
Micro	small	Microbiology, micrometer, microscope
Milli	Thousand	Millimeter, millennium
Mitos	Thread	mitosis
Mob, mot	Move	Mobile, mobility, motion
Mono, Uni	One	Monocot, monopoly, unicycle
Morph	Form	Metamorphosis, endorphins, amorphous
Mort	Death	Mortal, mortician, immortal

Mut	Change	Mutation, immutable
My/o	Muscle	Myocardium, myosin, myoglobin
Nat	Born	Innate, natal, natural
Necro	Death	Necrology, necrosis, necromancy
neuro	Nerve	Neuralgia, neurologist, neurotic
Nom, onym	Name	Misnomer, nominal, nominate
Omni	All	Omnipotent, omnivorous, omnibenevolent
Op/t/s	eye	Optical, optician, autopsy
Ose	Sugar	Glucose, sucrose, lactose
Osteo	Bone	Osteoarthritis, osteopathy, osteology
Pale/o	ancient	Paleobiology, paleobotany, paleogeography
Pater	Father	Paternal, paternity, patricide
Pathe	Suffering, misfortune	Pathology, Apathetic, empathy
Pept, peps	Digestion	Dyspepsia, peptic, pepsin
Per	Through	Permanent, permeate, persist
Phage	To eat	Esophagus, anthropophagy, sarcophagi
Phile	love	Bibliophile, pedophile
Phobia	Fear	Hydrophobia, Acrophobia, Arachnophobia
Photo	Light	Photogenic, photography, photosynthesis
Phyt/e	Plant, to grow	Epiphyte, hydrophyte, neophyte
Plast	Anything formed or molded	Protoplasm, plastic, plasia
Pneum/o	Breathing	Pneumonia, pneumatic, cardiopneumograph
Pod/ped	Foot	Podiatry, pedicure, pedestrian
Poly	Many	Polygon, polytheistic, polytechnic
Pro	Before	Prognosis, prologue, Prokaryote
Pseudo	false	Pseudonym, pseudoscience Pseudopodia
Radio	Radiation	Radioactive, radiologist
Re	Back	Recycle, reuse, return
Rhino	Nose	Rhinoceros, rhinovirus, rhinoplasty
Rrh/ea	Flow, discharge	Diarrhea, hemorrhage, hepatorrhea
Sacchar	Sugar	Monosaccharide, Polysaccharide,
San	Healthy	Sanitary, sane, sanitation
Scler/o	Hard, tough	Arteriosclerosis, sclerometer, Sclerosis
Scope	See, examine	Microscope, periscope, telescope
Semi	Half, partial	Semiannual, semipermeable, semicircle
Serv	Save, keep	Conserve, reserve, preserve
Sol	Sun	Solar, solarium, parasol
Soma	Body	Somatic, autosomatognosis, chromosome
Soror	Sister	Sorority, Sorocide, Sororate
Sphere	Ball	Biosphere, hemisphere, hydrosphere
Spire	To breathe	Respiration, transpire, inspire
Stomato	Pertaining to the mouth, opening	Colostomy, gastrostomy, stomata
Sub	Under, lower than	Submarine, submerge, subterranean
Syn	Together	Synthesis, autosynthesis, photosynthesis
Tax/a	Arrangement, movement	Syntax, taxonomy, Chemotaxis
Techno	Technique, skill	Technology, technocracy, biotechnics
Tempo	Time	Temporal, tempo, contemporary
Terra	Earth	Terrarium, Terrestrial, Territory

Therm	Heat	Thermometer, thermal
Torpe	Numb	Torpor, torpedo, torpid
Tox	Poison	Intoxication, toxicology, toxin
Trans	Across	Transcontinental, transfer, transport
Trophic	Growth, nutrition	Abiotrophy, Heterotrophic, Autotroph
Vacu	Empty	Vacuum, vacuole
Vas	Vessel, tube, duct	Vascular, Vas deferens, vasodilation
Vita	Life	Vitamin, vital, revitalization
Vor	To eat	Carnivorous, voracious, Insectivore
Xyl	Wood	Xylem, Xyliod, xylophone
Zoo / Zoan	Animal life	Zoology, zooplankton, Protozoan
Zyg/o	Pair	Zygote, zygomorphic,
Zymo, zyme	Fermentation	Enzyme, lysozyme, microzyme, Zymase