AP Biology Ecology Unit Curriculum Summary

* Food chains and food webs are dependent on primary productivity via photosynthesis or chemosynthesis
* Community formation and structure; e.g. species diversity, predator/prey relationships, symbiotic relationships, etc.
* Population growth; e.g. exponential growth, logistic growth, density-dependent and density-independent limiting factors
* Population dynamics
  + E.g. competition, parasitism, predation, mutualism, commensalism
* Change in producer level will affect other trophic levels
* Energy pyramids, 1st and 2nd laws of thermodynamics, the flow of energy through an ecosystem, the 10% rule
* Carbon, nitrogen, phosphorus, and water all cycle through the environment; conservation of matter
* Three major survivorship curves that populations demonstrate
* Different life-history strategies; e.g. r vs. k strategies
* Disruptions to an ecosystem’s homeostasis; e.g. human impact, invasive species, natural disasters and weather events, etc.
* Human activities impact ecosystems on local, regional, and global scales.
  + E.g. urbanization, deforestation, water pollution, introduced species and diseases, habitat destruction, etc.
* The diversity of species within an ecosystem influences the stability of the ecosystem
  + E.g. maintaining essential abiotic and biotic factors, keystone species