

Welcome to AP Biology!

The purpose of this summer assignment is to review content you should know coming into the course, and will continue to build off throughout the year. This is not a mandatory assignment, the purpose is to help strengthen your biology foundation coming into AP Biology. You may complete this however you feel is necessary, such as making flashcards, making quizzes, making brochures, making a power point presentation, making diagrams etc.

Part 1: Cells & their Organelles

A core theme of AP Biology is how structure impacts function. For each organelle, describe the role it has in the cell, and relate the structure to the function. You should be familiar with:

Cell membrane, cell wall, nucleus, endoplasmic reticulum (smooth and rough), lysosome, vacuole, ribosome, mitochondria, chloroplast, golgi body

Part 2: Energy

An essential characteristic of life is the ability to obtain and use energy. Energy is needed to carry out all of life's processes. Photosynthesis is used by plants to obtain energy. Cellular respiration is used by plants and animals to have usable energy. Compare and contrast photosynthesis and cellular respiration. You should be familiar with the steps of photosynthesis, the light dependent reaction and the calvin cycle. You should be familiar with the steps of cellular respiration, glycolysis, krebs cycle, and the electron transport chain. To re-familiarize yourself with the steps, you may choose to draw a diagram, make a list, create a drawing, or something else describing and explaining what occurs at each step.

Part 3: Ecology

Ecology is the final unit for AP Biology. This unit ties in everything from the year to show how systems interact. Below is a list of different organisms/interactions/descriptions of behaviors seen within ecosystems. Take some time to be familiar with each of the terms, you should be able to come up with an example for each. If you want to have some fun, take a walk outside and find these in the environment surrounding you!

1. commensalism
2. phototropism
3. parasitism
4. predator-prey relationship
5. a primary consumer
6. mimicry
7. secondary succession
8. a secondary consumer
9. a decomposer
10. a simple food chain
11. an abiotic factor
12. evidence of decomposition
13. evidence of human impact on an ecosystem
14. an example of cryptic coloration
15. a community
16. a gymnosperm
17. an angiosperm
18. evidence for artificial selection
19. a plant adaptation
20. an animal adaptation
21. genetic variation within a population
22. genetically modified organism
23. an autotroph
24. cuticle layer of a plant
26. a scavenger
27. a lichen
28. a producer
29. an amphibian
30. an animal track
31. a sporophyte
32. a reptile
33. tree rings
34. a dicot leaf
35. mutualism
36. C3 plant
37. C4 plant
38. CAM plant
39. a flower
40. a fungus
41. a pollinator
42. moss
43. a monocot leaf
44. a heterotroph
45. a population
46. exoskeleton
47. a biome
48. meristem
49. gametophyte

25. a wind dispersed seed

50. a reptile