

**AP Summer Assignment #2**  
**BIOLOGY VIDEO REVIEW**  
**Kemp**  
**AP Biology 2021-2021**

**DUE:** All submissions for this assignment are to be made on the AP Biology Google Classroom by Wednesday July 28th by midnight.

**ASSIGNMENT:** I think that this biology review playlist will serve as a prelusive resource. Although you may find it elementary, the Amoebas Sisters provide fundamental biological content in a straightforward and fun manner. Sit back and relax and enjoy this biology video review playlist. During this video please take advantage of the “pause” button to complete the attached video questions. You must hand this assignment in on the AP Biology Google Classroom by midnight Wednesday July 28th.

*\*Side note and some advice: Your AP Summer Assignment #3 (titled INQUISITION) is very intense, requiring a great deal of reading and writing. The questions attached to assignment #3 require lengthy explanations that require careful consideration and attention to detail. I thought that this video review would be a nice compliment to summer assignment #3. This worksheet for assignment #2 only requires the use of short and direct answers with very little explanation. For many questions I am asking for a simple list of terms with no definitions or explanations required at all. Other questions I am asking for your own personal creativity. My advice is that you may want to look ahead to summer assignment #3 and begin chipping away at that assignment, even while enjoy assignment #2 BIOLOGY VIDEO REVIEW.*

*Mrs. Kemp*

**DIRECTIONS:**

**Part 1:** Watch the Amoebas Sisters Biology Stroll through the Playlist video and complete the attached worksheet that is posted on your AP BIOLOGY Google Classroom. Submit this completed worksheet by Wednesday July 28th midnight. Remember this is a very simplified video and I am asking for direct answers to these questions. Many questions do not require lengthy explanations, just a direct answer using appropriate biology vocabulary terms. In many cases your answers will be one sentence naming the proper vocabulary word. Only a few questions require any type of explanation. Other questions will ask you to be creative and design a chart, a list, or a diagram. I am looking for your own personal creativity on these requests so please feel free to be as “colorful” and “animated” as you like.

**Part 2:** Watch the posted Amoeba Sisters Study Tips & Motivation video (no worksheet for this second video)

## QUESTIONS:

1. List the characteristics of life scientists use to determine if something is alive or not alive?
2. List the three major components of cell theory?
3. Define abiotic and biotic factors. Give an example of each
4. Be creative and design a list that identifies the biological levels of organization (according to this video)
5. Biomolecules are part of organisms. Be creative and design a chart that: names the four major macromolecules, names their monomers (building blocks), defines what elements they each contain and lastly define their functions
6. List your answers to the following questions: A. What is an enzyme? B. What is a substrate? C. What is the active site of an enzyme? D. What factors affect enzyme activity? E. What terminology do we use to describe an enzyme that cannot function within its ideal environment?
7. Define the differences between prokaryotic and eukaryotic cells
8. Design a display of what type of organisms are defined as prokaryotes and what type of organisms are eukaryotes
9. List cell organelles common to both prokaryotic and eukaryotic cells?
10. List organelles that are found exclusively in eukaryotic animal cells
11. In addition to the above, list organelles that can also be found in eukaryotic plant cells?
12. Provide a brief explanation as to the importance of the cell membrane, also called the plasma membrane:
13. Define Passive Transport and provide examples
14. Define Active Transport
15. Define osmosis
16. How is hypertonic solution defined?
17. Find images or drawings online and insert them here of cells in hypertonic, hypotonic and isotonic solutions. Make sure each image is labelled.
18. What organelle does cellular respiration take place in?
19. What organelle does photosynthesis take place in?
  
20. Aerobic respiration involves oxygen. What type of cellular respiration is performed when oxygen is not present?
21. How would you explain the relationship between the reactants and products of cellular respiration and the reactants and products of photosynthesis?
22. What organelle houses DNA?
23. What is gene regulation?

24. Find a basic image of a labelled nucleotide online and insert here.
25. The base of a nucleotide is critical for determining genetic information. Name the four bases of DNA and show how they are appropriately paired.
26. What is a chromosome?
27. How many chromosomes are there in a human?
28. How many chromosomes are received from the biological male parent and how many are received from the biological female parent?
29. Briefly explain what it means for DNA to exist in two anti-parallel strands
30. What is the importance of DNA Replication?
31. Be creative and design a chart that list the four enzymes that play a key role in DNA replication and their specific function
32. List the phases of the cell cycle
33. What phases of the cell cycle are considered Interphase?
34. What is Apoptosis?
35. Which type of cell division is for growth and repair?
36. Which type of cell division produces gametes?
37. Name and provide a brief explanation for the phases of Mitosis
38. Define Cytokinesis
39. What is the difference between haploid and diploid cells?
40. Why does meiosis result in four genetically different haploid cells?
41. Define the difference between a gene and an allele
42. What type of letter do we use to indicate a dominant allele?
43. What type of letter do we use to indicate a recessive allele?
44. In Mendelian Inheritance recessive alleles can only express themselves when....?
45. Provide an example of how you would write a homozygous dominant phenotype or genotype.
46. Provide an example of how you would write a homozygous recessive phenotype of genotype.
47. Provide an example of how would write a heterozygous genotype
48. What is the difference between incomplete dominance and codominance?
49. DNA codes for \_\_\_\_\_
50. Name some functional traits that proteins are involved with:
51. Name and define the two major steps of protein synthesis
52. Where is the codon found?
53. Where is the anti-codon found?
54. List the three types of gene mutations?
55. List the types of chromosomal mutations?
56. How does natural selection compare to genetic drift?
57. What is an autotroph?
58. What is a heterotroph?
59. Name two types of helpful roles that a bacteria can play:
60. Design a chart or diagram to show the similarities and differences between bacteria and virus
61. List the three domains of life

62. From least specific to most specific list the taxonomy levels that come after DOMAIN
63. What is the chemical process that plants use to produce glucose?
64. Define the difference in how nonvascular and vascular plants get water
65. What is the role of the stomata?
66. What type of reproduction is performed by angiosperms?
67. Name the male parts within a flower structure
68. Name the female parts within a flower structure
69. What is the role of the endosperm?
70. Search on line for an image of an energy pyramid and insert here
71. What is the ten percent rule when referring to an energy pyramid? How is this energy lost?
72. What is a Food Web?
73. Define Biodiversity
74. Give an example of what may cause primary succession
75. Give an example of what may cause secondary succession
76. What is the name of the species that colonizes an area first? Give an example
77. In regards to the carbon cycle, where is carbon found?
78. In regards to the nitrogen cycle, what do nitrogen fixing bacteria convert nitrogen from the atmosphere into?
79. Name the predator and name the prey in this relationship: Robin Red Breast vs. Worm
80. List examples of three symbiotic relationships
81. Give five examples of body systems
82. Do these systems work in isolation or in collaboration with each other?
83. Of all the content reviewed in this playlist, list your top five favorite content areas in biology?