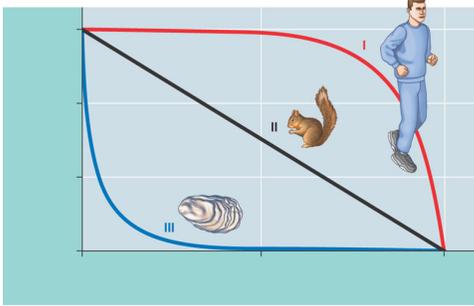


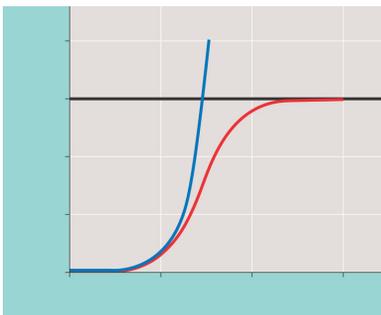
## AP Biology Summer Assignment

The summer assignment for AP Biology consists of 4 parts. There will be an exam (multiple choice and essay questions) on Chapters 52-53 on the second day of class. This assignment will be collected on the first day of class.

1. Read Ch. 52-53 in Campbell.
2. Answer the following questions:
  1. Define/describe the following terms:
    - a. Population
    - b. Density
    - c. Dispersion
    - d. Mark-recapture method
    - e. Immigration
    - f. Emigration
    - g. Territoriality
  2. What are the three patterns of dispersion and what conclusions can you draw from these patterns?
  3. Define the following terms:
    - a. Demography
    - b. Life tables
    - c. Survivorship curves
    - d. Reproductive table
    - e. Life history
  4. Use the diagram below – label the three different survivorship curves – give an example of an animal that fits the curve and an explanation of why they fit the curve.

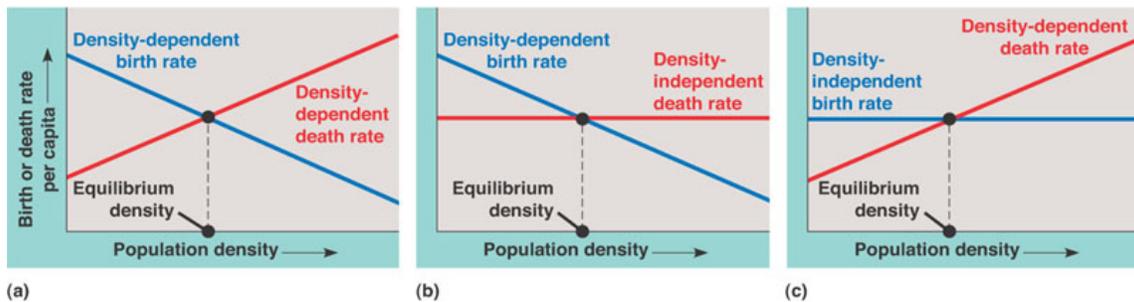


5. Compare and contrast semelparity and iteroparity – give advantages of each as they apply to an example organism – focus on the adaptive benefit of the life history. Are there any disadvantages?
6. What is zero population growth
7. What is exponential population growth? What kind of graph would you expect to see?
8. Read section 52.4 slowly – we are not focusing on all of the math but the concepts – explain the logistical population growth model. Studying the graph below – what does it tell you and why? How does “K” fit in to all of this?



9. Compare and contrast r and k selection – this is a key concept – do some additional research and try to come up with atleast three points of comparison.
10. What is the difference between density-dependent and density-independent factors as general terms? Give a few examples of density-dependent factors as well as density-independent factors.

11. What generalizations can be made by the graphs below?



12. What is population dynamics?

13. What kinds of information do age structure pyramids provide and what inferences can be made from these?

14. How can an ecological footprint be useful?

15. Define interspecific interactions.

16. What is the relationship between interspecific competition and The Competitive Exclusion Principle?

17. Contrast the following terms: ecological niche, fundamental niche, realized niche and resource partitioning.

18. Give an example of character displacement

19. Define and give an example of the following physiological defense adaptations.

- a. Cryptic coloration
- b. Aposematic coloring
- c. Batesian Mimicry
- d. Müllerian mimicry

20. Give an example of a plant defense against herbivory.

21. Contrast the following terms:

- a. Endoparasites
- b. Ectoparasites
- c. Parasitoids

22. Define and give two examples of mutualism.

23. Define and give two examples of commensalism

24. Is the evolution of Batesian mimicry an example of coevolution, support your answer?

25. Provide an example that correctly uses the terms species diversity, species richness and relative abundance correctly.
26. What is the difference between a food chain and a food web? Which provides a more “full” ecological picture and why?
27. Explain why food chains are relatively short.
28. How do you characterize the dominant species? How is this different from the keystone species?
29. Compare and contrast the bottom-up model with the top-down model?
30. What is the relationship between the term disturbance and the intermediate disturbance hypothesis?
31. Compare and contrast primary and secondary succession.

Part 3: Unit Essay: Write an answer to the essay question including specific information and examples. A neatly written answer in pen is what is acceptable. The Question: Many populations exhibit the following growth curve: (a) Describe what is occurring in the population during Phase A. (b) Discuss THREE factors that might cause the fluctuations shown in Phase B. (c) Organisms demonstrate exponential (r) or logistic (K) reproductive strategies. Explain these two strategies and discuss how they affect population size over time. This is due on the first day of school.

Part 4: EXTRA CREDIT: Well if you would like a little extra credit ... Extra Credit options over summer:

These are due the first day of School!!! [Type text] BUT ONLY IF YOU FINISH YOUR SUMMER ASSIGNMENTS!!! Remember this is Extra Credit, so you don't HAVE to do any of these.

You may do up to three options: Each option is worth 5 points Extra Credit

1. Watch the documentary BLACKFISH and write a one page summary for me addressing these four questions. What is the documentary about? What is the purpose of the documentary? Whether you agree? And finally, what Sea world has to say about the documentary.

2. Go to a Science Museum in San Diego or Los Angeles. Attach the ticket stub to your paper and take a photo with you at one of their signs. Write a summary of three of your favorite exhibits and why they were your favorite.

3. Go to the tide pools / snorkeling / scuba diving. Take photo evidence of you being at the tide pools. Take pictures of 5 organisms you saw and tell me about the limiting factors that might affect them, their special adaptations, and in which tidal zone they would be found.

4. Go on a nature hike in the San Gabriel Mountains (Big Bear, Lake Arrowhead, etc) Take photo evidence that you were there. Take pictures of 3 different plants and any animals you might see. Write about your experience for me. Topics to cover: The biome in which you are in and any characteristics, special adaptations you find. Anything interesting you saw? What trails did you go on? Did you get lost? Tired?

5. Read Silent Spring by Rachel Carson. Then pick one of these ways to describe the themes of the book and how influential this book was on our country and to you if applicable. IF you are an artist draw me a pictures.. if you are a poet write me a poem... if you are a musician... write/play me a song... if you are into drama.. act it out for me... be creative ... no boring papers!!!!

6. Go to a zoo/botanical garden/aquarium. Attach ticket stub and take a picture of the sign for me showing evidence you were there. Take pictures of 5 different animals/plants there and describe the biome in which they live in and any special characteristics/adaptations they might have.