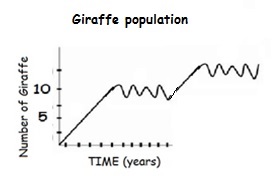
AP BIOLOGY CARD REVIEW ANSWERS  
1. r = growth rate  
 N = number of individuals in population  
 K = carrying capacity  
2 . .logistic growth  
3. a- 49,000<60,000 current population is below carrying capacity  
 b- r = +, population will increase  
4 a. C is Type III  
b. small size, short life span, early maturity, large number of offspring, little parental care, high mortality,  
c. r-selected species  
d. dandelions, insects, mice, frogs, cockroaches  
5. Biological magnification  
6. E- honeybee and flower is +/+  
7. C-Tertiary consumer  
8. a. Primary consumers  
 b. herbivores  
9. Aposematic coloration = warning coloration  
10. A-increase in cataracts and skin cancer  
11.Primary succession occurs in lifeless/unoccupied areas (no soil/no organisms). Secondary succession happens in previously inhabited communities that has been disturbed (soil/some organisms present)  
12. MUTUALISM- Nitrogen bacteria form nodules on the roots of legume plants. Plants provide food for bacteria, bacteria change nitrogen gas into ammonia in soil which plants can use.  
13. a. Increase in prey results in an increase in predators because more food is available,  
 increase in predators leads to decrease in prey as more gazelle are eaten; decrease in   
 prey leads to a decrease in predators because there is less food available for lion.  
 b. Each trophic levels always contain more organisms than the next layer above   
 because only 10% of energy is passed up to next level. One lion eats many gazelles.   
14. Bee dances, bird mating dances, aposematic coloration, territorial marking,   
 pheromones, bird song, predator warning, colony swarming behavior, color in flowers . . .   
15. A. has the largest biomass  
16. a. from food we eat  
 b. amino acids/proteins, nucleotides/nucleic acids (DNA/RNA), ATP, NADPH, NADH,  
 chitin, urea, hemoglobin, insulin . . .There are lots more  
 c. carbohydrates, lipids, steroids, fats, phospholipids . . . There are lots more  
17. Only about 10% of energy is passed to next level  
 a. 200  
 b. 20  
 c. 20/2000 = 1%  
18. a. Runoff of manure/fertilizer provides unlimited nutrients to algae causing an algal bloom   
 b. EUTROPHICATION  
 c. Algae block sunlight to plants below so photosynthesis decreases, so less food/oxygen for consumers.  
 Decomposers break down dead organisms using up even more oxygen, creating HYPOXIC DEAD   
 ZONES  
  
19. a. carrying capacity  
 b.   
  
Population will increase until a new   
carrying capacity is reached

20. Organism → population → community → ecosystem→ biome → biosphere  
21. Carbon cycle  
22. Trophic level B  
23. O2  
24. C all the organisms in a lake  
25. D - carnivore  
26. D- grasses and small shrubs  
27. transpiration  
28. Mutualism- lima beans & wasps; parasitism- wasps and caterpillars  
29. Energy moves one direction through food chains; matter is recycled  
30. Wind, temperature, soil, water, climate, humidity, light  
31. [**Gross productivity**](http://www.phschool.com/science/biology_place/glossary/g.html#gross-productivity) = the entire photosynthetic production of organic compounds in an ecosystem.  
 [**Net productivity**](http://www.phschool.com/science/biology_place/glossary/n.html#net-productivity) = the organic materials that remain after photosynthetic organisms in the   
 ecosystem have used some of these compounds for their cellular energy needs (cellular respiration).

32. C Since culture A has little phytoplankton, gross productivity will be lower than that of culture B,   
 and this will result in lower net productivity as well.  
33. Plants in light would have greater transpiration because they are using water for photosynthesis  
34. Habitat = where an organism lives (location); niche is all the biotic/abiotic interactions they have =occupation  
35. Keystone species  
36. a. r= (b-d) = (.73-.32) = 0.41  
 b dN = 0.41 (1000) = 41 walleye 1000 + 41 = 1041 There will 1041 walleye in 2014  
 dt