NAME: _____

PBS Evolution: The Evolutionary Arms Race

1. Why should the “rough skin newt” be so toxic that kills most predators?

2. What explains the newt’s toxicity?

3. What predator can resist the toxin of the newt?

4. How does the toxin affect the predator? How would a small amount affect a human?

5. What have been the advantages and disadvantages of the coevolution between newt and snake?

6. What “drives” evolution?

7. What is the “last predator” humans have to fear?

8. How have disease causing microbes changed due to antibiotics?

9. What “old” disease has reemerged in Russian prisons? How many Russian inmates have this disease?

10. Describe in detail how disease causing microbes develop (evolve) drug resistance?

11. What are “second-line” drugs? Why are they not widely used?

12. Why did scientist choose inmates in a Russian prison to study the evolution of drug resistant Tuberculosis (TB)?

13. Why is there concern the United States about drug resistant TB? How are these drug-resistant diseases able to spread so quickly over such great distances?

14. What are two causes of drug-resistant microbe?

15. How can evolution be used to make microbes less harmful?

16. Which type of microbes seems to be the least harmful? Which are the most harmful?

17. Describe actions that are taken to prevent the spread of cholera in South America? How do these actions make the disease causing microbes less harmful?

18. What is domestication? How could microbes be domesticated?

19. Describe the role of natural selection in the relationship between Cats and FIV virus?

20. How has cooperation been another “driving force” in evolution?

21. What is mutualistic symbiosis? Give three examples?

22. Describe the codependency of the “leaf-cutter” and the fungi?

23. How long have the ants been using antibiotics to protect their fungus (food crop)?

24. What might be the problem with an environment that is “too clean”?