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**Worksheet 12: Predation and Herbivory**

1. Because of their consumer-resource relationship, predators and their prey have coevolved with respect to one another. Answer the following questions based on predator-prey coevolution. (6<sup>th</sup> ed., pgs 295-296; 7<sup>th</sup> ed., pg 294)
  - a. What is coevolution and how does it occur between predators and their prey?
  
  
  
  
  
  
  
  
  
  
  - b. What is the Red Queen hypothesis? How does it pertain to the coevolution of predators and prey?
  
2. Mimicry is a defense mechanism used by some prey to escape predation. For the two kinds of mimicry listed below, describe for each how they work and give one example. (6<sup>th</sup> ed., pgs 297-298; 7<sup>th</sup> ed., pg 295-297)
  - Müllerian:
  
  
  
  
  
  
  
  
  
  
  - Batesian:
  
3. Inducible and constitutive defenses constitute different "strategies" organisms have evolved to protect them from prey. (6<sup>th</sup> ed., pgs 296-299, 302; 7<sup>th</sup> ed., pgs 294-298)
  - a. Compare and contrast inducible versus constitutive defenses.
  
  
  
  
  
  
  
  
  
  
  - b. What is the advantage of an inducible over a constitutive defense? What is the advantage of a constitutive over an inducible defense?
  
4. Plants use a variety of means to defend themselves against herbivores. Answer the following questions regarding herbivory. (6<sup>th</sup> ed., pgs 305-306; 7<sup>th</sup> ed., pgs 302-303)
  - a. The book states that herbivores can starve to death on a full stomach of plant tissue. Explain how and why this can happen.
  
  
  
  
  
  
  
  
  
  
  - b. Provide an example of a chemical defense and explain how it acts to defend the plant against herbivores.
  
  
  
  
  
  
  
  
  
  
  - c. What are some of the costs and benefits to the plant in building anti-herbivore defenses?