

**AP Biology Questions
Evolution and Systematics**

1. Read *Comparison of Evolution Mechanisms*
<http://www.indiana.edu/~ensiweb/lessons/ev.mech.pdf>
 - a. Respond to discussion questions for scenarios A and B
 - b. Cheetahs run faster than 60 miles per hour when in pursuit of prey. How would an evolutionary biologist explain how this ability evolved, assuming their ancestors could only run 20 miles per hour?

2. Read *De-riving Force of Cladogenesis*
<http://www.indiana.edu/~ensiweb/cladogen.html>
 - a. Define
 - i. Clade
 - ii. Novel characteristic
 - iii. Familial characteristic
 - iv. Primitive
 - v. Derived
 - vi. Cladogram
 - b. Describe the fundamental principles used in building cladograms
 - c. How does cladistic analysis solve the problem of “missing links?” Do you agree that this solves the problem? Explain

3. Read *Dinosaurs and Birds: An Update*
<http://www.indiana.edu/~ensiweb/din.bird.html>
 - a. Why did the dino-bird hypothesis “survive” compared to the crocodile-bird and archosaur-bird hypothesis
 - b. Who first proposed the dino-bird hypothesis...and when?
 - c. Explain the “practical value” of cladograms.
 - d. List 2 criticisms of cladograms
 - e. Describe arguments for and against the dino-bird theory.
 - f. Why is “method” so important?
 - g. What is the difference between fibrous and true feathers?
 - h. What are feathers important in the dino-bird debate?
 - i. What is your opinion of the dino-bird theory? Explain what evidence or concept you are basing your theory on.

