Name: _____ Date: _____ Period: ____

Weekly Reading HW HW Wk ___

Directions: Read and annotate the passage below. Then answer the questions.

Why Do Zebras Have Stripes? New Study Offers Strong Evidence

All three species of zebra have bold stripes in comparison to other African grazers like water buffalo and antelope. This so-called stripe riddle has puzzled scientists – including Darwin – for over a century, leading to five main hypotheses: that the stripes repel insects, provide camouflage, confuse predators, reduce body temperature, or help the animals interact socially. For the first time, scientists played all of these theories against each other in a statistical model – and the result was pretty much, well, black and white. "We found again and again and again [that] the only factor which is highly associated with striping is to ban biting flies," said study leader Tim Caro, a biologist at the University of California. "I was delighted to see the results were so strong in one direction."

For the study, Caro and colleagues collected data from a vast range of sources, including museum collections and historical maps. First, the team looked at variations in striping patterns across the seven living species of the equid group – which includes horses, donkeys, and zebras – and their 20 subspecies. Most have some sort of striping somewhere on their bodies. They also noted where the stripes occurred on the body – for instance, the face, belly, or rear. The team then mapped where current and extinct equid species live, where biting flies are found, the ranges of predators like lions and hyenas, distribution of forests, and other environmental factors that could influence the evolution of stripes. The data was then entered into a statistical model to find out which variable best explains striping. The results showed that the range of striped species overlaps with where biting flies are most active – regardless of species and where the stripes occur on the body, according to the study.

Brenda Larison, a biologist who studies stripes in zebras, said the new study's approach is "broad brush," and that more specific research may be needed. "This is unlikely to be the last word on the subject," said Larison. Though Larison agrees that deterring flies is the "best supported hypothesis to date, most of the other hypotheses aren't well studied, and there is still a lack of direct evidence," she said. "We really need to know what happens with zebras in the wild before we can be sure."

Scientists haven't actually observed zebras in the wild to see if biting flies avoid alighting on them, in part because it's difficult to get that close to the animals. It's also not known why biting flies steer clear of stripes. However, Caro said he's confident that biting flies swarming around a mixed group of herbivores would avoid zebras. We've "moved the debate to the next stage—we can discount all [the other] hypotheses pretty conclusively," he said.

1. (RST.9-10.1) It can reasonably be inferred from the first paragraph that:
   a. Zebras have an advantage for finding food compared to water buffaloes and antelopes.
   b. Zebras have similar diets compared to water buffaloes and antelopes but look very different.
   c. Zebras can camouflage themselves from predators better than water buffaloes and antelopes.
   d. Zebras are more social animals compared to other grazers like water buffaloes and antelopes.

2. (RST.9-10.1) Why did the scientists include extinct species in their study?
   a. To show that zebras are their own species
   b. To prove how long zebras have existed
   c. To increase the sample size of the study
   d. To see how stripes evolved over time

Name: _____ Date: _____ Period: ____

3. (RST.9-10.2) The purpose of the third paragraph is to:
   a. Show unwavering support
   b. Provide a contrasting opinion
   c. Invalidate the study methods
   d. Offer further evidence

4. (RST.9-10.4) As it is used in the passage, the word *alighting* means:
   a. Getting off
   b. Disembarking
   c. Infecting
   d. Landing

5. (RST.9-10.1) How did scientists come to the conclusion that stripes evolved to repel biting flies?

   _____

   _____

   _____

   _____

6. (RST.9-10.1) What observation will provide conclusive evidence that stripes evolved to repel insects?

   _____

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Adapted from the article, "Why Do Zebras Have Stripes? New Study Offers Strong Evidence" by Christine Dell'Amore for National Geographic*, on April 1, 2014.*