

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

Weekly Reading HW

HW Wk \_\_\_\_\_

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

### The Sloth's Busy Inner Life

Spare a minute from your busy day to consider the quite different life of the three-toed sloth. It's true that the sloth, which lives in the jungles of Central and South America, would barely prevail a race with a snail. But it has carved out a remarkably slow, but ingenious way of life in the treetops.

The sloth is not so much an animal as a walking ecosystem. This tightly fitting gathering consists of a) the sloth, b) a species of moth that lives only in the sloth's fleece and c) a species of algae that grows in the sloth's hairs. Groom a three-toed sloth and more than a hundred moths may fly out.

Every week or so, the sloth descends from its favorite tree to defecate. It digs a hole, covers the dung with leaves and, if it's lucky, climbs back up its tree. The sloth is highly vulnerable on the ground and an easy prey for jaguars in the forest. Half of all sloth deaths occur on the ground. The other serious hazard in its life is an aerial predator, the harpy eagle.

Why then does the sloth take such a risk every week? Previous researchers suggested that the sloth was seeking to fertilize its favorite tree, with the algae that gave the sloth's coat a greenish hue providing camouflage. But according to Dr. Pauli, the visit to the ground is to favor a critical component of the sloth's ecosystem, the pyralid moth. The sloth's descent affords the pregnant moths a chance to lay its eggs in the sloth's dung. The moths' caterpillars consume the dung, grow to maturity, and flutter up to the trees to find a sloth host. Burrowing into its fur, they live there happily for the rest of their days, mating, and dying in a safe, protected environment. Bacteria in the sloth's fur decompose the moths' bodies, releasing nitrogen. Nitrogen feeds the algae that grow in the sloth's hair. The sloths then eat the algae from their fur to supplement their diets.

Dr. Pauli and his team guessed that the sloths eating the algae from their own fur might be the purpose of the whole system. Leaves are poor sources of nutrition, and animals that depend on them, like gorillas, often require large guts to hold them all. The sloth, having to climb along thin branches, can't afford a big gut. But the invention of giving over its fleece to algae farming solves its problem of limited nutrition. Dr. Pauli and his colleagues guessed that the sloth might be overcoming the poverty of its leaf diet by eating the algae on its fleece, and that the moths were essential fertilizer for the algae.

- (RST.9-10.4) As it is used in the passage, the word *prevail* means:
  - Compete in
  - Partake in
  - Be excluded from
  - Win
- (RST.9-10.1) All of the following can be found in a sloth's fleece EXCEPT:
  - Pyralid moths
  - Bacteria
  - Pyralid moth eggs
  - Algae
- (RST.9-10.1) Organisms that eat leaves must:
  - Have a multi-chambered stomach or extremely long small and large intestines.
  - Have large stomachs and intestines or supplement their diet with more nutrients.
  - Move slowly because leaves do not provide a lot of energy.
  - Live in trees to be closer to and be camouflaged by the leaves.

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4. (RST.9-10.2) The purpose of the last paragraph is to show:
- a. How the algae provide the sloths with camouflage.
  - b. How sloths and other herbivores are similar.
  - c. Why sloths eat the algae in their own fur.
  - d. Why sloths must move so slowly.

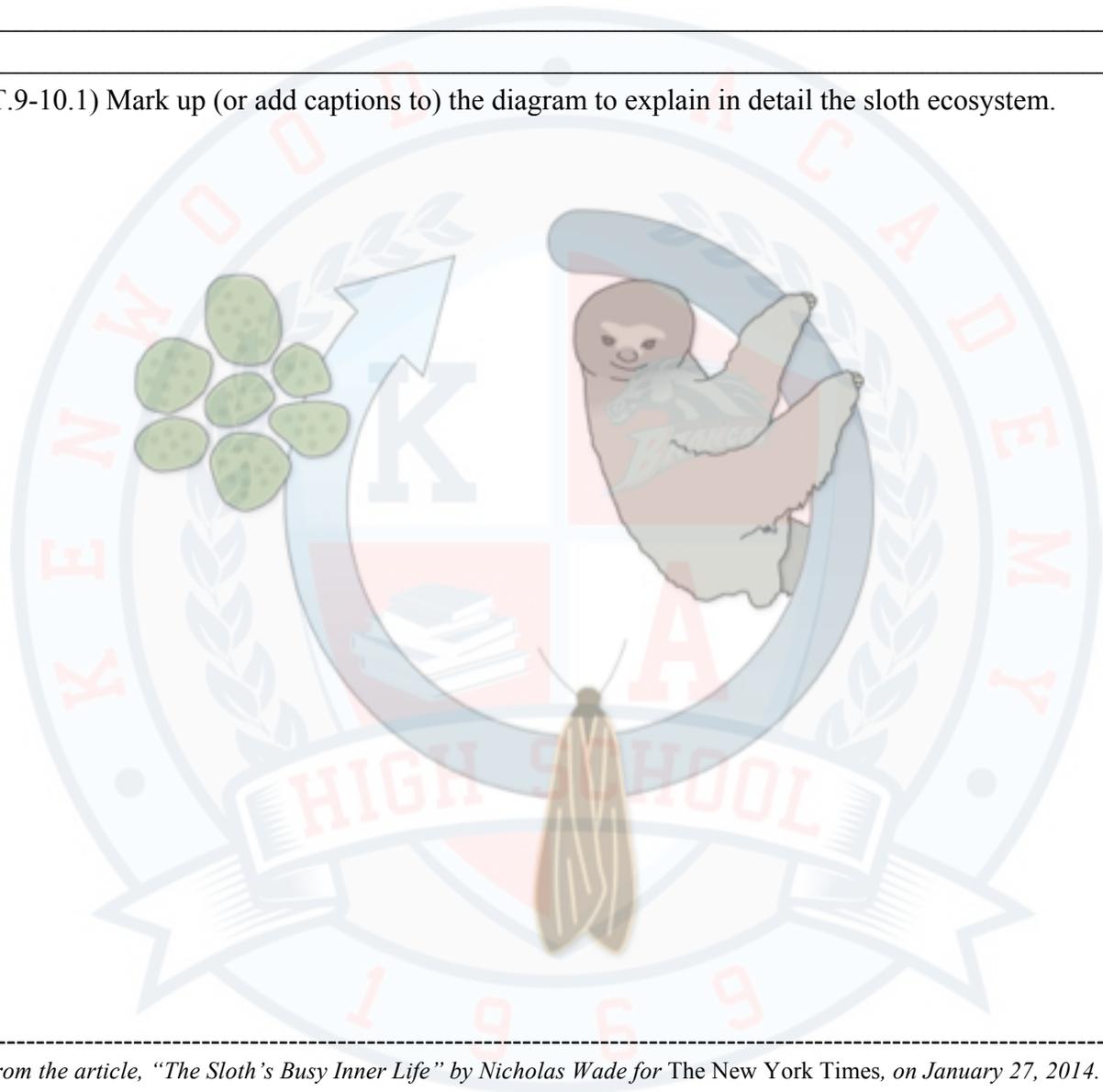
5. (RST.9-10.1) Describe two ways in which a sloth can die.

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6. (RST.9-10.1) Mark up (or add captions to) the diagram to explain in detail the sloth ecosystem.



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*Adapted from the article, "The Sloth's Busy Inner Life" by Nicholas Wade for The New York Times, on January 27, 2014.*