

Name: _____

The Big Sleep: Hibernation

When the crisp autumn air turns into a freezing winter wind, most humans head indoors for cocoa and blankets. However, for wild animals, the change in season is a life-or-death challenge. As the ground freezes and snow piles up, food sources like juicy insects, green plants, and sweet berries disappear. To survive this harsh time, some animals enter a mysterious state of survival called hibernation.

The Preparation Phase

Hibernation is not a decision an animal makes at the last minute. It requires months of hard work. During the late summer and fall, hibernators like groundhogs, woodchucks, and certain types of bats become incredibly busy. Their main goal is to eat as much as possible. They aren't just being greedy; they are building up a thick layer of "brown fat."

This fat is a special kind of energy source. It acts like a biological battery. Because the animal will not eat for many months, its body must rely entirely on this stored fat to keep its organs functioning. If an animal doesn't eat enough before the first frost, it may not have enough fuel to make it until spring.

A Body in Slow Motion

Many people think hibernation is just a very long nap, but it is actually much more intense. When an animal enters a true hibernation, its body undergoes a massive "shutdown" to save energy.

- **Heart Rate:** A groundhog's heart, which normally beats about 80 times per minute, may slow down to just 4 or 5 beats per minute.
- **Breathing:** Some animals breathe so slowly that it looks like they aren't breathing at all. A hibernating animal might only take a breath once every few minutes!
- **Temperature:** Instead of staying warm, the animal's body temperature drops until it is nearly as cold as the air inside its burrow.



Groundhog in burrow

By slowing down these vital signs, the animal uses very little "fuel." This allows their stored fat to last for four to six months. If they stayed active and warm, they would run out of energy in just a few days.

The Spring Awakening

When the soil begins to thaw and the days grow longer, the animal's internal clock sends a signal that it is time to wake up. This is a high-energy process. The animal's body begins to shiver violently to create heat, and its heart rate races as it warms up.

When the animal finally crawls out of its winter home, it is much thinner than it was in the fall. It has used up almost all of its fat and is extremely hungry. It must quickly find food to regain its strength and begin the cycle of life all over again.

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1. What is the main idea of the section titled "A Body in Slow Motion"?

- A. Hibernation is exactly the same as the sleep humans get at night.
- B. Animals like groundhogs prefer to live in cold burrows.
- C. An animal's body changes its heart rate and temperature to save energy.
- D. It is very difficult to see a hibernating animal breathe.

2. How does the author organize the information in this passage?

- A. By comparing hibernation to migration.
- B. By describing the stages of hibernation from preparation to waking up.
- C. By listing the problems humans face during the winter.
- D. By explaining the history of how scientists discovered burrows.

3. Read this sentence from the passage: "The animal's body begins to shiver violently to create heat, and its heart rate races as it warms up." Which meaning of the word "races" is used in this sentence?

- A. Competitions to see who is the fastest runner.
- B. Moves or beats at a very high speed.
- C. Different groups of people from around the world.
- D. Rushes to get to a specific destination on time.

4. Based on the text, what can you infer about the "brown fat" mentioned in the Preparation Phase?

- A. It is only found in animals that live in the rainforest.
- B. It is the primary reason animals are able to survive months without eating.
- C. It makes the animal move faster during the winter months.
- D. It disappears as soon as the animal falls asleep.

5. What conclusion can you draw about why hibernation is a successful survival strategy?

- A. It allows animals to avoid predators by staying underground.
- B. It helps animals grow thicker fur for the following year.
- C. It matches the animal's energy use to the low amount of food available in winter.
- D. It makes the animal stronger and faster for the springtime.