

Name _____ Date _____

Hibernation

Hibernation is one of the main adaptations that allow certain northern animals to survive long, cold winters. Hibernation is like a very deep sleep that allows animals to save their energy when there is little or no food available. The body functions of 'true hibernators' go through several changes while they are hibernating. Body temperature drops, and the heart rate slows. For example, a hibernating woodchuck's body temperature drops by more than 30 degrees Celsius, and its heart rate slows from 80 to 4 beats per minute! Other true hibernators include the jumping mouse, little brown bat, eastern chipmunk, and several ground squirrels. Other animals, such as the skunk and raccoon, are not considered true hibernators, as they wake up in the winter to feed, and their body functions do not change as much. Since they only sleep for a little bit at a time, the term *dormancy* or 'light sleeping' is used to describe their behavior. The largest animals to hibernate are bears. Their heart rate may slow down from a usual 40 –50 beats per minute to 8-12 beats per minute, but their body temperature changes very little, so they are able to wake up quickly.

Hibernating animals have a special substance in the blood called *hibernation inducement trigger*, or HIT. This substance becomes active in the fall, when the days become cooler and shorter. When HIT becomes active, the animals start preparing for winter. Some animals store food so that they can eat when they wake up, and some animals eat a lot in late summer and fall to add excess fat to their bodies. This fat keeps them warmer and acts as a source of energy while they are sleeping. Some animals also make changes to the places where they will sleep (dens). They add leaves and grasses to keep them warm.

Answer the questions about hibernation:

1. Why do animals hibernate? _____
2. What changes occur in the functions of an animal's body when it hibernates?

3. Why are raccoons and skunks not 'true hibernators'? _____

4. What is the term used to describe the behavior of raccoons and skunks? _____

5. What does HIT stand for? _____
6. When does HIT become active? _____

7. How do animals prepare for hibernation? _____

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Answers to Hibernation

1. Animals hibernate to save energy during the winter when there is little food for them to eat.
2. An animal's body temperature drops and its heart beat slows when it is hibernating.
3. Raccoons and skunks are not 'true hibernators' because they wake up in the winter to eat. Additionally, the changes in the functions of their bodies aren't as great.
4. The term used to describe the behavior of raccoons and skunks is dormancy. 'Light sleeping' is also used.
5. HIT stands for Hibernation Inducement Trigger.
6. HIT becomes active in the fall, when the days are shorter and the temperature cooler.
7. To prepare for hibernation, animals store food and eat a lot to add excess fat to their bodies. They also add leaves and grasses to their dens to keep them warm while they sleep.