



When an animal hibernates, it goes into a deep sleep so it can survive the cold season when food is scarce. Hibernation is not just deep sleep, though. The animal's heart rate and breathing slows way down and its body temperature drops. That means their metabolism can slow because their bodies don't have to use much energy to stay alive. Metabolism is the process by which the animal uses food and water to stay alive and make energy.

Before animals go into hibernation, they spend a couple of months feeding heavily to build up fat. Their bodies live off the fat while they hibernate. This period of excessive eating is called hyperphagia.

The sleep of hibernation is called torpor. Some animals sleep through the winter months without waking while some wake when the weather is milder to roam and eat a bit before going back to sleep.

Though hibernation is usually associated with mammals (warm-blooded animals with hair or fur that typically birth live young), reptiles also sleep through the cold months. The difference between mammals and reptiles (cold-blooded animals with scaly skin that typically lay eggs) is that reptiles already have a slower metabolism, so the drastic metabolic change does not take place. The term sometimes used for the hibernation of reptiles is brumation.

Lots of different animals hibernate and they all do so in slightly different ways. Let's take a look at eight animals that hibernate and see how they do it.

Bears



Bears hibernate for up to 7 months, depending on where they live. The places where they hibernate are called dens. Sometimes bears dig their dens in the ground. Sometimes they use rock crevices, hollow trees, brush piles, or the space beneath the roots of an uprooted tree. Bears can go up to 100 days without eating, drinking, or relieving themselves.

Skunks



Skunks hibernate in burrows. They can dig their own, but they tend to seek burrows that belong to other animals such as groundhogs or foxes. They also like to hibernate under porches. So hold your nose when you go outside. The skunk blocks off the entrance to its burrow with leaves and grass to keep cold air out. Sometimes skunks even hibernate together to share warmth! Unlike bears, skunks need to awaken from time to time during hibernation to forage for food. When they're not snowed in, they may even leave the burrow daily for short forage trips.

Groundhogs



We all know that if the groundhog sees his shadow on February 2 there will be another 6 weeks of winter. That's probably about the earliest a groundhog would leave its deep, cozy den. Groundhogs stay active until the first winter frost, and then they crawl into burrows dug deep in the ground and go to sleep until the weather warms. They usually hibernate for 2 to 3 months but are capable of hibernating for up to 5 months.

Turtles



Aquatic, or water turtles dig into the mud at the bottom of a pond and snuggle into mud and leaves to hibernate. Because turtles are cold-blooded, or ectothermic, they allow themselves to go cold once they are settled in. Their hearts slow down till to only beat once every few minutes, and they stop breathing through their lungs. Rather, they take what little oxygen they need in through special skin cells near their tails. Water turtles can stay like that for 2 or 3 months while they wait for the world to warm back up.

Land turtles dig deep burrows in the ground in which to hibernate. They try to find a place safe from predators, because if a raccoon or dog sniffs the turtle out, the turtle has nowhere to run. Land turtles generally begin to hibernate between mid-September and mid-October and stay in their torpor for 3 to 4 months.

Snakes



Snakes are also ectothermic and they dig holes in the ground to hibernate in for the cold months. They generally tend to begin hibernation when the weather drops below 60 degrees, so their starting months vary depending on where they live. They come back out of hibernation when the temperature rises above 60 degrees, so snakes in

Texas do not hibernate for as long as snakes in Indiana do, and snakes in Indiana hibernate for a shorter period than snakes in Montana.

Frogs



Aquatic frogs hibernate underwater. They do not dig down into the mud like turtles do. Rather, they lay on top of the mud or only partially bury themselves. This is because their metabolisms don't slow as much as turtles' do and they need to be in the oxygen-rich water in order not to suffocate. Frogs may even swim around slowly from time to time.

Toads and land frogs burrow deep into the ground, until they are below the frost line, to hibernate. Some frogs seek out deep cracks in logs or rocks or burrow as deep as they can in leaf litter. Though the burrow may freeze, the frog does not. Frogs have a high concentration of glucose in their vital organs that acts like antifreeze and prevents them from freezing. The frog will appear dead, but when the area warms up, the frozen parts will thaw and back to life he'll come.

Bats



Bats have to hibernate because there aren't enough insects to support them during the colder months. Bats snuggle up together on cave walls or ceilings (or even in attics) and go into a deep slumber that can last over 6 months. Their bodies survive on just a few ounces of fat during this time and they lose roughly half their body weight. They may wake up from time to time on mild nights to find a drink of water or food before returning to torpor.

Bees



Honeybees cluster in their hives to hibernate. The worker bees huddle around the queen and shiver to create heat. They keep the center at about 80 degrees. The workers bees rotate from the inside of the circle to the outside so everyone has a chance to warm up. Unlike other bees, they don't really sleep through the cold months.

Carpenter bees hibernate in tunnels drilled into old wood.

Bumblebees dig down into the ground in well-drained soil for hibernation.

Hibernation takes many forms for many different types of animals. Can you imagine climbing into your bed, snuggling up, and sleeping from November till March?

Define the words:

Hibernation _____

Metabolism _____

Fat _____

Hyperphagia _____

Mammal _____

Reptile _____

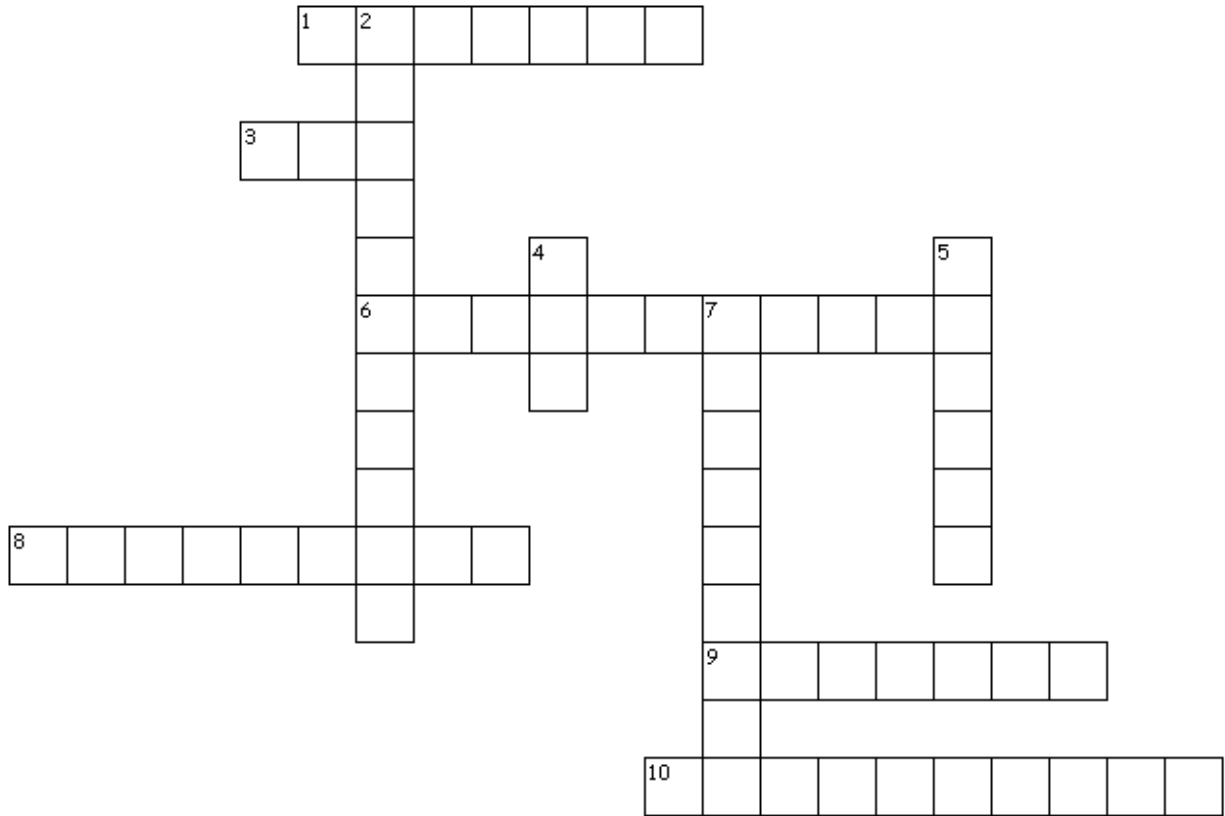
Brumation _____

Den _____

Aquatic _____

Ectothermic _____

Hibernation Crossword



Across

1. cold-blooded animal with scaly skin that lays eggs
3. what hibernating animals live off of
6. period of excessive eating to produce fat
8. term used for the hibernation of reptiles
9. live in water
10. process by which an animal uses food and water to stay alive and make energy

Down

2. cold-blooded
4. place where bears hibernate
5. warm-blooded animal with hair or fur that typically birth live young
7. Sleep through winter

Word Bank		
Hibernate	Hibernation	Metabolism
Fat	Hyperphagia	Mammal
Reptile	Brumation	Den
Aquatic		ectothermic

Hibernation Word Search

D V N F K Q W U Q G J M A I E
W I O Y H T C O R X Z I B J F
Y D I H I M A Y Z L G R T O Z
Z B T W V I E O V A U A Q C D
C G A H T C S T H M F J J R X
H E N H D C I P A A M D K P V
I P R A W P R T U B H Y D Y L
B L E Q O E I F A H O P P R M
E A B L P O V V Q U K L F G B
R M I Y N A Q K N E Q B I W J
N M H E L I T P E R I A O S O
A A T D X D E N Q J A E D B M
T M L T I F Y K Y S U B V Y R
E C T O T H E R M I C B Z B T
O N T Z I E X L O X S H I U B

AQUATIC
ECTOTHERMIC
HIBERNATION
METABOLISM

BRUMATION
FAT
HYPERPHAGIA
REPTILE

DEN
HIBERNATE
MAMMAL