

Brrrrrr!

How animals adapt to
cold and winter

Brrrr! How do animals adapt to cold and winter?

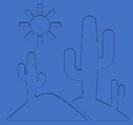
Hibernation

Migration

Resistance

Camouflage

Other
adaptations



People use different words for ways animals reduce energy needs in cold weather:

- Dormancy is reduced activity generally with a decrease in metabolic rate.
- Torpor is an involuntary state of reduced activity.
- Some animals alternate napping to conserve energy and emerging to snack.
- In true hibernation, the animal's body temperature drops low, close to the environmental temperature and the animal is inactive.
- Brumation is an adaptation of cold-blooded animals to become inactive in cold periods, and resume activity in warmer periods.
- We have words for warm-blooded (homeothermic), cold-blooded (poikilothermic) and variable (heterothermic) animals. Warm-blooded animals maintain a constant body temperature. Cold-blooded animals are not able to regulate their temperature. Heterotherms can move between dormancy and activity.

Hibernation

When an animal hibernates, the animal's body temperature drops, and its heartbeat and breathing slow down, to decrease energy requirements. Animals prepare for winter by eating extra food and storing it as body fat for energy.



Brumation

While some warm-blooded animals and birds hibernate, cold-blooded animals like reptiles and amphibians brumate.

They get sluggish and inactive, a condition of torpor.



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Torpor and heterotherms

Some warm-blooded animals in a cold climate show torpor. Animals capable of torpor can alternate between internally regulating their body temperature and allowing the environment to influence it; they are “heterotherms.” This flexibility gives an advantage of a lower body temperature and a lower metabolic rate, using less energy and food.



Migration

Animals can move
to a warmer
location in cold
weather.



Resistance

Animals and birds can trap an insulating layer of air under fur or feathers.



Camouflage

Animals can change color to blend into snow and ice.



Other adaptations

- Thicker coat
- Gather and store food
- Eat different foods
- Tunnel
- Build up reserves of fat
- Go dormant
- Nap and snack
- Countercurrent heat exchange
- Large body area, small appendages
- Antifreeze proteins



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Animals
have
evolved
many
behaviors
to help
them beat
the cold:

herding,

denning,

burrowing

and roosting in cavities

are all good defenses.

Brrr Song—you can sing it to Jingle Bells

Hibernating, brumating,
torpor are the best

For staying warm in
winter, taking a long rest.

Fluffing feathers, storing
foods and loading
calories,

Are some of the other
ways of surviving the big
freeze!



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Walk in the park to find places animals might stay warm.



Are the bears demonstrating camouflage or staying warm under a snow blanket?

Can you match the animal to their cold weather adaptation:



Matching chart:

Migration

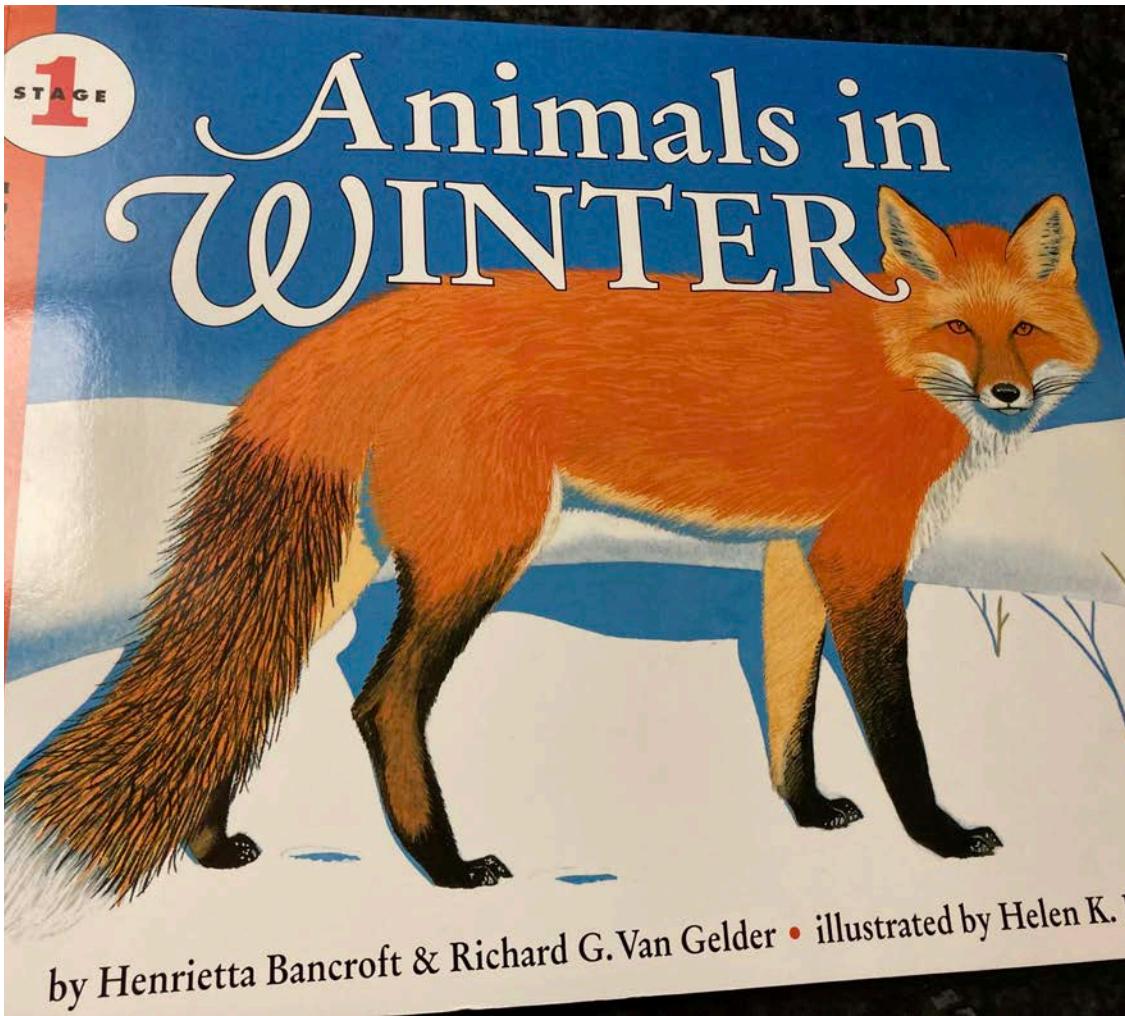
Hibernation

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You can
read more
about
adapting
to cold and
winter: