



# TaHome Nature Education: Winter Animal Olympics

## Grades K-5



### Reading: Amazing Tahoe Animal Adaptations

If non-human animals were permitted to participate in our athletic competitions, humans might never win any Olympic events again, let alone qualify to enter some of the events that other animals would dominate. Humans would no longer win strength competitions or races on foot or in the water, nor would they even be represented in flying or other physical feats of birds, fish, insects, and more. Tahoe animals have some pretty amazing physical abilities. How do you think your physical abilities compare?



American Black Bear

American Black Bears have very powerful forelegs and can run over 30 mph, although this doesn't happen often. This means they can run 100 meters in about seven seconds. The world record for a human running 100 meters belongs to Olympian Usain Bolt, who ran the distance in 9.58 seconds in 2009, running at around 28 mph.

Northern Flying Squirrels are a hard to find Tahoe local, as they stay hidden during the day and come out at night. A better name for this mammal might be "gliding" squirrels, as they use a special flap of skin between their front and back legs to glide through the air between trees. This skin **membrane** is hard to see on a squirrel unless they are in the air, when they spread out their limbs. Some daring people use "squirrel suits" to **mimic** this body shape and gliding ability for big jumps from high cliffs. However, humans still need parachutes to help them touch down again safely. Flying squirrels move their legs to steer and use their tail to slow down when they land on a tree. In a single jump, flying squirrels can cover over 150 feet.

Snowshoe Hares are so named for their ability to float on top of deep snow, thanks to their large feet. When people strap on snowshoes, these devices help spread out our weight on the snow, to make us sink less and travel more easily on the snow. Snowshoe Hares have wide back feet, covered in warm fur, that are as long as five inches (more than a 1/4 the size of their entire body length). In comparison, human feet are usually only 1/6 the length of our bodies. Snowshoe Hares also adapt to winter with changes to their fur. During the summer, their fur can be a mix of gray, brown, red, white, and black. In winter months, their fur becomes almost entirely white to blend in with the snow and hide from predators.



Snowshoe Hare

Dung Beetles also get their name from something that makes them unique. They are known for rolling feces into balls, which they then feed on. These insects fly around looking for deposits of manure from animals like cows or horses using specialized antennae that can detect the smell of fresh dung in the air. Next, they will roll the dung into a ball and push it away to be buried for either food or for laying eggs. These amazing bugs can move dung balls that are 50 times heavier than themselves! If you weighed 100 lbs., you would have to be able to roll a ball weighing 5,000 lbs. to be as strong as these beetles. Dung Beetles are also ferocious fighters, with horn-like body parts and strong legs, and some are known to use the Milky way to navigate.



Dung Beetle



Clark's Nutcracker

Clark's Nutcrackers are known for their amazing memories. In autumn months, these local birds pry open Whitebark Pine cones to access their seeds. Then, the Clark's Nutcrackers **cache** these pine nuts by burying them underground where they can find them throughout the winter, even in deep snow. This smart bird leaves 4-5 seeds in each cache (but as many as 15!), and can hide up to 90,000 seeds total annually. That means they may remember between 5,000 and 20,000 different caches in a year! The seeds that they leave behind or end up not needing, are not wasted; they grow into groups of Whitebark Pine trees in Tahoe's mountains.

Each of these Tahoe animals, and many more, have amazing skills that help them to survive and thrive in their habitats. Humans may not be able to run as fast as bears or jump as far as squirrels, but we have some unique strengths as well. In particular, humans are great at using tools. Tools you might commonly use include silver wear to help you eat your food, shoes to keep your feet warm and dry, ropes and ladders to climb, and phones to communicate from far away. Human tool use allows us to mimic some of the abilities of animals, like squirrel suits and snowshoes. What other tools can you think of that would help you mimic the abilities of other animals like the Clark's Nutcracker, Dung Beetle, and American Black Bear?



## Olympic Events

### Run like an American Black Bear

These bears run 100 meters in 7 seconds, but can you come close? Time yourself running 100 meters (or the length of a straight side on a track). Try as many times as you like, but be careful running on snow or ice! Record your time in the Winter Animal Olympic Scorecard below.

### Jump like a Northern Flying Squirrel

Can you travel 150 feet in one jump like a Flying Squirrel? Mark your starting point. Then, from a standstill, jump as far forward as you can. Stay where you land and have someone measure the distance you jumped from your marked starting point. Record the length of your jump in the Winter Animal Olympic Scorecard below.

### Float like a Snowshoe Hare

Snowshoe Hares travel easily through the snow, thanks to their large feet that spread out their weight over a large surface area. On snow that is at least several inches deep, try walking upright without making holes in the snow. Next, try walking on hands and knees without making holes in the snow. Finally, try spreading out your weight even more by army crawling through the snow, trying to keep your whole body on the ground. In the Winter Animal Olympic Scorecard below, record which method worked best for traveling through deep snow without post holing for you.

### Roll like a Dung Beetle

Dung Beetles can roll balls of feces 50 times their own weight! Create a snowball and roll it around the ground collecting more snow and making the ball as large as you can, until you can no longer roll it with your own strength. Measure how tall this snowball has become. Record the height of your snowball in the Winter Animal Olympic Scorecard below.

### Remember like a Clark's Nutcracker

Clark's Nutcrackers can remember and find 20,000 hidden caches of food each year. Play a game of Memory. You can play with matching pictures at home, or play [online](#). Turning over two pictures at a time, try to make matches by learning where the match to each picture is in the group. Record the fewest turns it takes you to make all the matches.

Winter Animal Olympic Scorecard	
Run like an American Black Bear	I can run 100 meters in _____ seconds.
Jump like a Northern Flying Squirrel	I can jump _____ feet.
Float like a Snowshoe Hare	I can travel through deep snow without sinking by _____.
Roll like a Dung Beetle	I can roll a snowball that is _____ inches high.
Remember like a Clark's Nutcracker	I can win Memory in _____ turns.

### Use tools like a Human

As you complete the above physical challenges, you may notice that it is hard to even come close to doing as well as these different animals. However, if you use tools to help you, you may be able to travel as fast as an American Black Bear or move a heavy snowball. Try these challenges again, but this time try using different tools to see how you can improve your abilities. Tell a friend or family member about what tools you used and how they helped you better mimic animal **adaptations**.



## Words to Know

**Membrane**: A thin layer of tissue on the body.

**Mimic**: To imitate someone or something.

**Cache**: To store or hide for future use.

**Adaptation**: A naturally occurring trait that helps an animal or plant survive in their habitat.

## Palabras para conocer

**Membrana**

**Imitar**

**Esconder**

**Adaptación**

## Further Learning

[Watch](#) Flying Squirrels in action.

[See](#) a Dung Beetle rolling balls of feces.

[Learn](#) about the Snowshoe Hare research TINS conducts.

