

Animal Speeds

Students are familiar with the fable about the tortoise and the hare. They easily understand the extreme difference in speeds of these two animals. According to top speed measurements, the hare's speed is about 35 mph and the tortoise only about 0.17 mph. Therefore the hare is about 206 times faster than the tortoise.

What makes for such a difference in the animal kingdom? The length of a terrestrial animal's stride and how often it completes a stride determine its speed. Animal shapes and sizes are variables that figure into this. For instance, cats have bodies that allow long strides. They have amazing mobility in their shoulder blades, and long vertebrae between their ribs and pelvis, which allow the spine to flex and bend.

The bodies of the fastest animals are shaped to create the least resistance in the air or the water. One example of this is the fusiform or torpedo shaped body of the Atlantic bottlenose dolphin. It allows the dolphin to swim at speeds up to 20 mph.

An animal's speed is often an act of survival. They may use their speed to flee an enemy or to catch prey. Speed can also be part of their mating ritual. The hummingbird's wings beat about 50 times per second when hovering, but up to 200 times per second during their courtship flights.

Animals that race for sport provide us with the most accurate figures for top running speeds. Greyhounds can run at about 36 mph for 1/4 mile. The racehorse can clock a speed of 38 mph up to one mile. In sprint races humans may reach speeds of 23 mph. While speeds of other animals have been measured, in most cases these are only educated guesses.

Students will use these questions to develop a clearer understanding of how mathematical skills can be used to illustrate an individual animal's speed, as well as comparisons with other animals and objects.