

# Foot Facts and Feats

1. **What are the advantages of walking on the toes with the heels elevated off the ground?**

Humans walk upright. Bears often stand on their hind legs. The more foot surface on the ground, the better the weight distribution - it's that simple. Ever try walking around for a long period of time on your toes? What happens to your balance? Try it and see.

2. **What are the advantages of walking on the toes with the heels elevated off the ground?**

No doubt about it. The advantage is speed! Having the heels elevated allows wolves and other canids to lengthen their strides and run fast. Watch your dog sprint after a squirrel. Do you think you could outrun your dog? Wolves need to put on bursts of speed when chasing prey such as deer.

3. Look at the pictures of large dogs that you and your classmates have collected. Pay particular attention to pictures that show the dog's chest. Look at some pictures of red wolves. **Which member of the dog family has the longer legs and narrower chest?** Can you figure out the reason for these "amazing adaptations?" Red wolves have long slender legs and narrow chests. So do gray wolves. Long legs help the long-distance traveler to cover the miles while hunting for food. Wolves often travel 20 miles or more each day in search of a meal. When covering long distances, the wolf travels at a trot. This is an energy-efficient gait with the diagonal legs moving forward and backward at the same time.

4. **Why do wolves have elbows that turn inward and narrow chests?** A narrow chest helps the long-distance traveler through the air, water, and in deep snow. Although the red wolf no longer lives in areas of the Southeast that have significant snow in winter, it once lived in the southern Appalachian Mountains where snow is often deep. Think about a triangle and a square. Which goes through the air, water, and snow more easily? Look at some head-on pictures of wolves. The wolf's narrow chest resembles a wedge or a triangle. Most dogs of comparable size have wider chests. The in-turning elbows make the wolf's gait more efficient. It can trot with little stress on the shoulder muscles. The tracks of a wolf are in a straight line because the feet of the wolf are underneath its center of mass.

5. **What is the advantage of having opposable thumbs?**

How does your dog pick up an object? With its mouth, right? Why? No opposable thumbs!

