



Sniffing the World

- 1 Whenever dogs go for a drive, they love sticking their heads out the car window. Why? The most likely reason is that they're sightseeing—or rather, smellsniffing. **Sniffing smells is how dogs get information about the world.**
- 2 The human sense of smell is fine for detecting rotten food or enjoying perfumed blossoms. But no human nose could detect a teaspoonful of sugar dissolved in a tank of water the size of two Olympic pools. That's what a sniffing dog could identify, according to scientist Alexandra Horowitz. Some scientists say that a dog's sniffing ability is at least ten thousand times stronger than a human's.
- 3 Dogs are stupendous sniffers because of their nose design. Each doggy sniff brings air through the nostrils into the snout. As the air flows through the moist snout, it is cleaned. The air carries odor molecules. They reach an area at the back of the snout. Here, special cells catch and sort the odor molecules. The molecules are picked up by nerve-cell structures called smell receptors. A dog has hundreds of millions of smell receptors. (Humans have about six million) The nerves connect to the brain. The brain interprets the signals from the smell receptors. The whole process happens quickly. The dog "knows" what the combination of odors means. "Hey, a squirrel ran across this lawn!"
- 4 The connections between a dog's nose and brain make for some amazing achievements. Trained dogs help rescue people buried in snow or in earthquake rubble. They follow a trail to a criminal or a lost child. They locate illegal material in luggage. Some dogs even identify diseases.
- 5 Of all dogs, the bloodhound is the best at tracking a scent. Bloodhounds put their noses to the ground. Their floppy ears stir up odor molecules for the dog to sniff. A trained bloodhound can follow a scent that is more than 10 days old. It can follow a trail for more than 100 miles (160 kilometers). Somehow, it is not distracted by countless other odors. It's no wonder that a bloodhound has been called "a nose with a dog attached."

