

Animals at Night— they're not all asleep!

By Linda Butler

People are diurnal—awake and active during the day and sleeping at night. While we think of night as a quiet, peaceful time, that is not so for nocturnal creatures. They sleep by day and are wide awake at night. Why are animals awake at night? The main reason is because it is dark and quiet. Prey animals such as mice, deer*, skunks and bats feel safer at night because their vision and hearing is better than many predators such as wolves, hawks, and mountain lions. However, many predators are nocturnal as well, such as cats and owls. Nocturnal animals have good night vision and excellent hearing.

[*While deer, especially urban deer, may wander around during the daytime, they are primarily nocturnal or crepuscular (cre-PUS-cu-lar)—moving and browsing at dawn and dusk.]



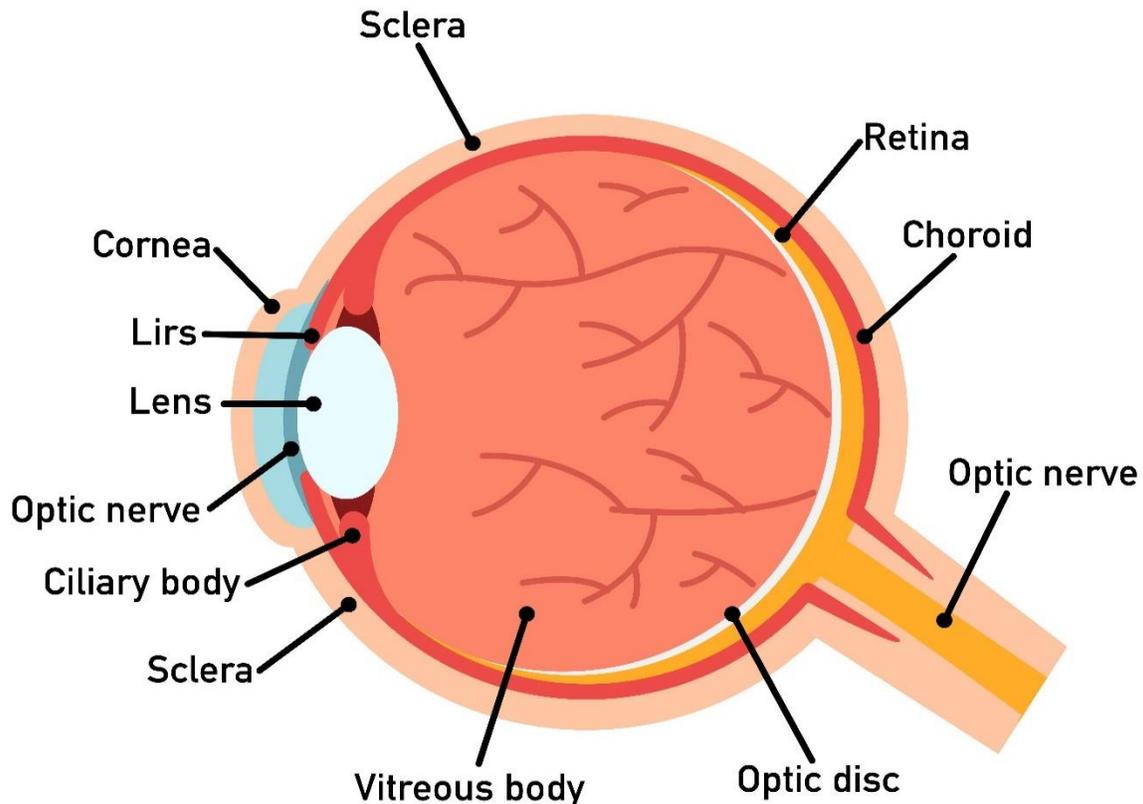
How do the senses of nocturnal animals differ from ours? Think about what it's like to walk around in the dark. Without a night light, we humans find it difficult to see and we tend to bump into and trip over things. Nocturnal animals can creep, run, and even fly quietly and safely during the darkest of nights.

Let's try working in the dark. How would it be to sort clean laundry in the dark? Each person (or pair of people) needs a basket or pile of clean laundry—especially socks. When it's dark, turn off all the lights and close the blinds so just a little light comes in. Look around the room—what can you see? What can't you see? Can you read the title on a book cover? Can you read any pages inside? Have someone across the room hold up a shirt. Can you tell what color it is, or who it belongs to?

Look through your laundry and try to match up clean socks into pairs. Is it easy to tell the brown socks from the white? The blue socks from the black? What about red and blue or brown socks? Do you have to hold the socks up close to your face to see the color? After sorting socks for a few minutes does it become easier to see their colors or patterns? Take another look at the book. After about ten minutes is it easier to read the cover? The text inside?

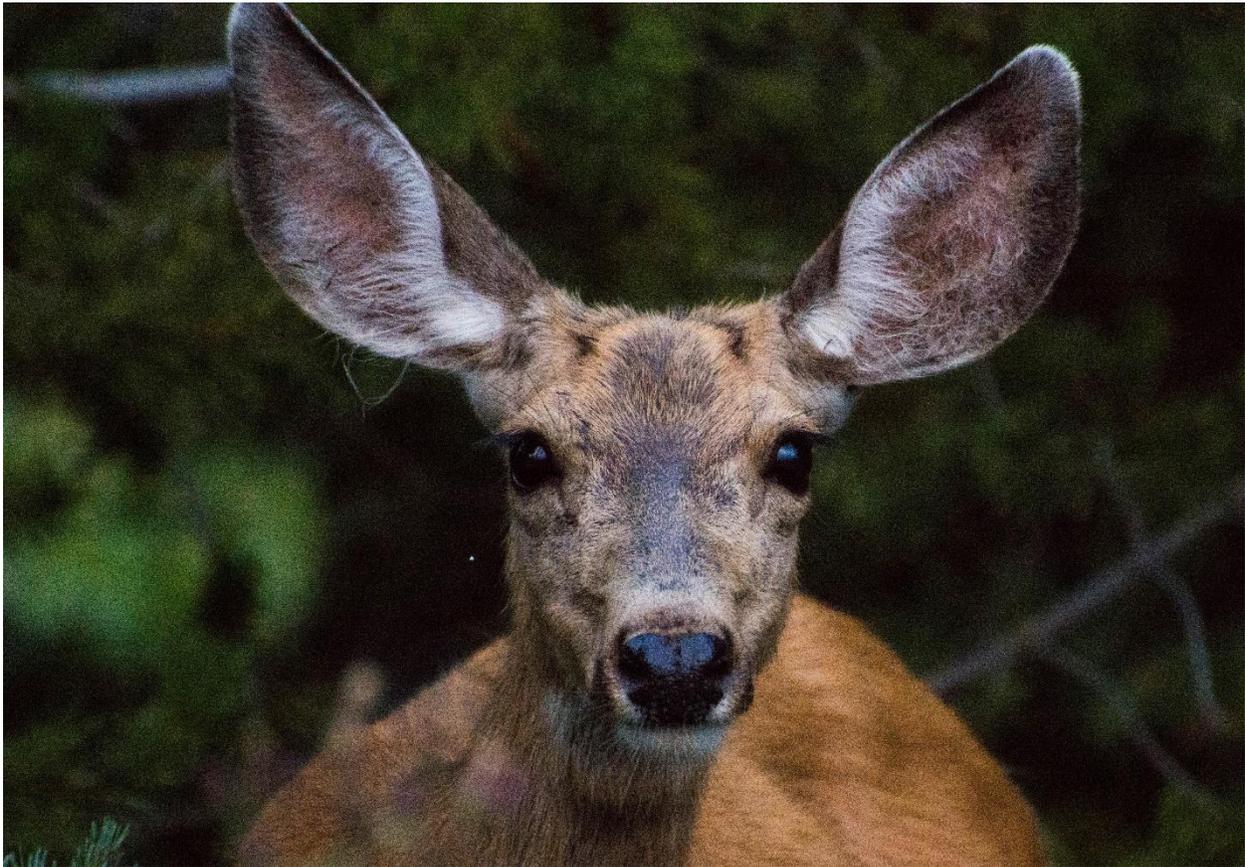
Turn on the lights and check your socks. How did the matching go? Did some red or brown socks get mixed with black ones? Did some pink or yellow socks get matched with white?

One reason it is hard to see colors at night is because of the way our eyes are made. Light enters through the cornea, a clear protective membrane. The Iris and pupil (the colored and dark part of the eye) can open and close, letting in more light when it's dark and less light when it's bright. The light rays pass through the lens which focuses the rays on the back of the eyeball, the retina. The retina contains millions of tiny light-sensing nerve cells called rods and cones. Cones are mainly in the center of the retina and detect colors and fine details. Rods are at the sides of the retina. They don't see color, but see shapes, detect motion, and help us to see in dim light. (This is why it is hard to see colors when it's dark.)



The human eye has a ratio of about 4 rods to 1 cone. Cat eyes have about 25 rods to each cone. Cats can see much better in the dark than humans can. On the other hand, cats don't see much color. Cats, and many other nocturnal animals, have an additional membrane behind the retina called the tapetum lucidum. This reflects light around inside the eye, allowing it to see more when there's very little light. This membrane is what causes cats (and raccoons and other night creatures' eyes) to "glow" in the dark.

When you look at animals it is often easy to tell if they are nocturnal or diurnal. Look at their eyes and ears. Large eyes allow more light to strike the retina



Ears to hear

In addition to larger eyes, most nocturnal animals have larger ears. Being able to hear well is especially important to prey animals such as mice, rabbits, and deer.

Children can quickly make “deer ears” by gently cupping their hands and placing them against their head behind the ears, with the thumb and index finger just behind the ear. Whisper a short sentence both without and with “deer ears.” Their cupped hands help gather more sound waves, just as deer and rabbit ears do.

When hiking, asking your children to “put on your deer ears” can help them to be quiet and listen. Going outside at dusk and listening with deer ears can help children focus on their sense of hearing. Sit together, quietly, and listen for a few minutes and share what you hear. Listen for specific things—birds, voices, a far-off motorcycle.

Quiet Cat and Creeping Mice is a fun night game. All you need is a prepared flashlight and blindfold for the quiet Cat, and several players to be creeping mice.

Prepare a narrow beam flashlight by taping a lightweight cardstock, construction paper or 3-4 sheets of computer paper cone with small (index-finger-size) opening to the light end of the flashlight. (I prefer the smaller flashlight with 2 doubled pages of computer paper.)



Go outside to a grassy, dark area. One person is the quiet Cat. Cat sits down on the ground, blindfolded, and holds the flashlight. The flashlight should be on and Cat uses her paw (hand) to cover the small flashlight beam before using it to “pounce” on an approaching mouse. The object of the game is for the mice to creep as quietly and stealthily as they can to the cat, sneak up on her and tag her on the back (or gently tickle her) and make a brief joyous squeaking noise. The game ends when either all the mice have made it to the cat, the cat has used up all of her pounces, or a pre-set time (3-5 minutes) is used up. To pounce, Cat points the flashlight and quickly moves her paw to send out a quick beam of light. If the light shines on a mouse, Cat has successfully pounced on and caught the mouse, sending the mouse back to the starting place to start creeping toward Cat over again.

Mice should be quiet when they sit behind the Cat after their brief, happy squeak. When all of the mice make it to Cat (or pounces are used or the time period ends), a new Cat is chosen and the game begins again. Cat is not allowed to sweep the light around (pouncing is not flying) and Cat is always blindfolded. Mice are honor bound to admit when they are pounced on by Cat’s beam of light.

After the game, talk about it. What are some of the sounds you listen for when you are the Cat? Is it hard to tell where the creeping mice are coming from? Is it better for a mouse to creep in a straight line or zig zag around? Is it better to stand or stay low to the ground?

For a more challenging game, play in a wooded spot where there are leaves and twigs on the ground, requiring mice to be extra careful and stealthy.

As you look at pictures of animals or see and hear them in the wild, talk about features that help nocturnal animals survive at night. And help your children understand ways that they learn, survive, and thrive in their environment—by day and by night!