

# Animal Communication

*A Reading A-Z Level V Leveled Book*  
*Word Count: 1,448*

## Connections

### Writing

Choose one type of communication from the book. Compare how different animals use that form of communication. Summarize the information in a chart.

### Science and Art

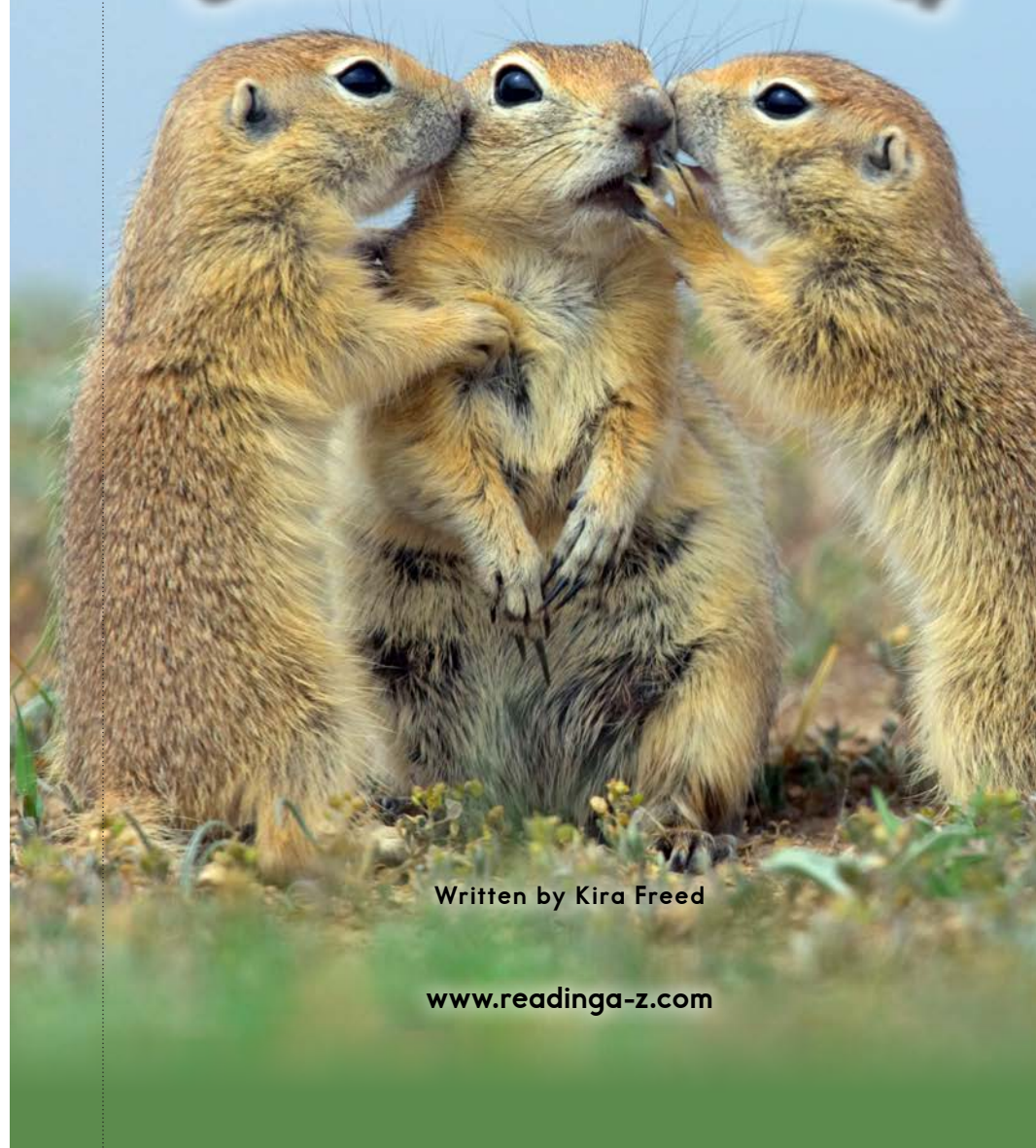
Choose an animal not included in the book to research further. Create a presentation for your class detailing how this animal communicates. Include a diagram that highlights the body parts the animal uses to communicate and any interesting facts about its communication.

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LEVELED BOOK • V

# Animal Communication



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## Focus Question

How and why do animals communicate?

## Words to Know

bioluminescence	organ
complex	phonic lips
dominance	structures
glands	vertebrates
infrasonic	vibrates
navigate	vocal

Page 3: Although “fighting like cats and dogs” is a common saying, these animals can be good friends.

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### Correlation

#### LEVEL V

Fountas & Pinnell	R
Reading Recovery	40
DRA	40



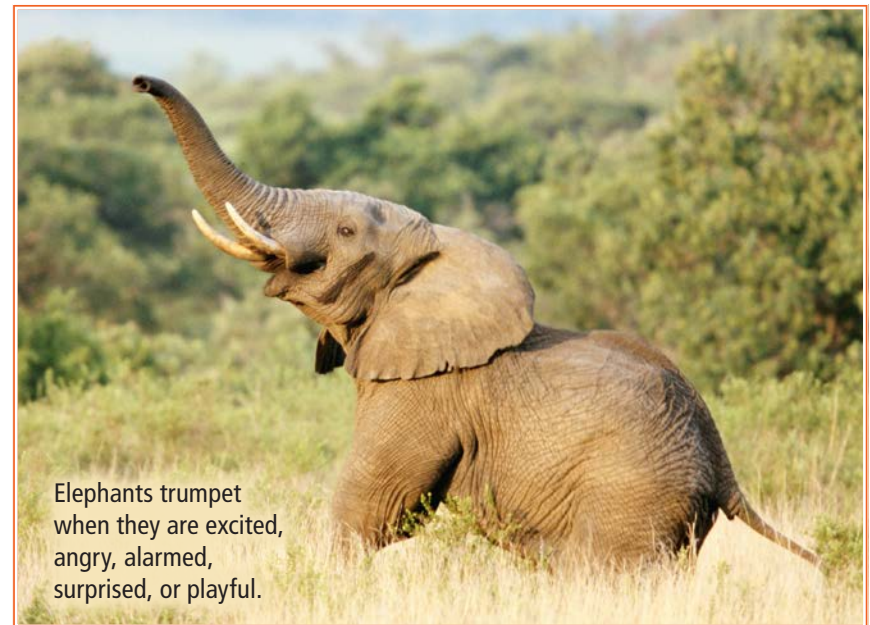
## Many Ways to Communicate

When people hear the word *communication*, they often think of human speech. Although humans also have other ways to communicate—smiling and hugging among them—speech is one of the most important. Speech requires skills, and often body parts, that other animals don't have. Still, there's no doubt that they communicate!

Nonhuman animals communicate in many ways. The reasons usually relate to food, staying safe, finding mates, or alerting others to their presence. They have an amazing range of communication methods, and most species use more than one.

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Elephants trumpet when they are excited, angry, alarmed, surprised, or playful.

## Communicating by Sound

Sound may be the most important way that **vertebrates** communicate. Sound travels farther than other forms of communication, and the receiver doesn't need to be looking at the sender.

Humans use their tongue, **vocal** cords, and other related body parts, along with their breath, to speak. Chimpanzees, which are among humans' closest relatives, have similar vocal **structures**. Although chimps can't use those structures with the same skill and speed as humans—or to express **complex** ideas—they still use them to communicate. Chimps laugh while playing, scream when upset, and make a loud “waaa” when they come upon something dangerous or unusual. They also use barks, grunts, and other sounds to communicate important information, such as where to find food, over long distances.



A pant-hoot is a form of long-distance communication. It starts as a low, breathy call that turns into a loud scream. Each chimp has its own unique pant-hoot.

## Warning!

Vervet monkeys make three different kinds of alarm calls. The calls not only warn other group members that a dangerous animal is nearby, but also communicate what kind of animal it is. Each call prompts a different response:

- Snake calls prompt them to stand up and look around on the ground.
- Leopard calls prompt them to run up trees.
- Eagle calls prompt them to hide in bushes.



Elephants also produce many types of sounds to communicate with group members. Trumpet calls involve forcing air through their trunks. Other sounds, such as squeals and groans, involve their vocal cords. So do **infrasonic** sounds, which are too low for humans to hear. These deep calls, which travel for miles, allow elephants to send messages over long distances.

Songbirds are another group of animals that use sound to communicate. They are famous for their amazing melodies. Songbirds may sing to attract a mate, guard an area, check in with others, or ask for help. Their songs may also call attention to predators or food. Songbirds produce their fancy songs using a vocal **organ** called a *syrinx*. Each side **vibrates** on its own when air moves over it, allowing songbirds to produce two different sounds at the same time. Stringing the sounds together creates complex songs.

Whale communication is a popular subject for study. Scientists divide whales into two groups—toothed and baleen—based on how they catch food. The two groups also communicate with sound in different ways. Most toothed whales, including dolphins, use echolocation, which involves making clicks that bounce off objects. The sounds that come back from fish and other animals help these whales find food. Sounds that bounce off the seafloor and other objects help them **navigate**. Toothed whales also produce calls, or whistles, to communicate with other whales of the same species.

These whales produce both types of sounds with structures called **phonic lips**, which sit just below their blowhole. The whales force air from their lungs through the phonic lips. When the phonic lips close, nearby fatty areas vibrate, creating sound, which moves forward in a beam. It flows through a fatty structure in the forehead that directs the beam of sound forward toward objects or another whale.

Baleen whales, on the other hand, have no teeth. Instead, the inside of their upper jaw is lined with baleen, which is similar to stiff bristles. Baleen traps tiny animals taken in with ocean water.






Humpback whale songs can travel 161 kilometers (100 mi.) or more in the ocean and can last as long as half an hour.

Baleen whales produce low sounds that include grunts and moans. They also make higher cries, chirps, and whistles. For example, both male and female

humpback whales make sounds. However, only the males produce long, repeating sounds known as singing. No one knows the purpose of these songs or how they're produced.

### Other Kinds of Sounds

In addition to sounds that involve the breath, animals also produce sounds in many other ways. Here are a few.

	Kangaroos	Male Crickets	Male Pigeons
<b>Animal</b>			
<b>Way to Communicate</b>	Thump hind feet	Chirp by rubbing wing parts together	Clap wings above body
<b>Purpose</b>	Warn other kangaroos of danger	Attract a mate and keep other males away	Announce interest in a female

## Communicating by Sight

Visual communication in the animal world takes many forms. Tails come in especially handy for this purpose. For example, male peacocks display their fancy tail feathers to attract females and declare their **dominance** to other males. Dogs often wag their tails to express joy, but tail-wagging in cats usually means just the opposite. Male rabbits show the white fur under their tail to get the attention of a female. However, a female rabbit shows the same fur to her young to say, "Follow me!"

Other body movements also send clear visual messages. Bees do a "waggle dance" to let other bees know they've found nectar. Horses flatten their ears when they're angry and paw the ground when bored, worried, or in pain. Many animals share their moods by making faces.



Other primates, like humans, use many different facial expressions to communicate their emotions.

Fireflies are experts at a different kind of visual communication—**bioluminescence**. A chemical reaction in their light organ causes them to flash. Animals may use bioluminescence to communicate with their own species, a different species, or both. Young fireflies use it to warn predators that they don't taste good. Some adult fireflies use it to recognize each other and choose mates. Many ocean animals, including some jellyfish, octopuses, and sharks, also use bioluminescence to communicate.

Some animals communicate with quick color changes. Male panther chameleons use sudden color changes to attract a female and to chase away other males.



Panther chameleons change color depending on their moods. Tiny crystals in their skin cells help control the color.

A toque maqaque (TOHK muh-KAK) monkey in Sri Lanka grooms another.



### Communicating by Touch

Many animals communicate by touch to stay close. People who are fond of each other may hold hands or walk arm in arm. Elephants touch each other with their trunks to express caring or comfort. Lions lick and rub up against each other.

Many different kinds of animals care for each other's bodies in a process called *social grooming*. Bees remove dust, pollen, and parasites from each other's bodies in hard-to-reach places. Primates clean each other's bodies of parasites, dead skin, and dirt. These animals aren't just cleaning each other—they're also making their social bonds stronger.

Touch can communicate dominance instead of caring. For example, male Komodo dragons battle each other over food and mates. Bull moose lock their huge antlers in fights over females.

### Communicating with Chemicals

Animals also send messages to others of the same species through chemicals called *pheromones*. These chemicals come from special **glands** on different parts of an animal. They are usually detected through the sense of smell or taste and can communicate different kinds of information.

Ants are well known for their use of pheromones. One purpose is to lay scent trails that other ants follow to food. Another is to make themselves known to other members of their colony. If they entered the colony of a different ant species, they would be attacked.

Many animals use pheromones to attract a mate. In alligators, the males produce the pheromones. Among moths, however, the females give off the pheromones. Some male moths have such sensitive antennae that they can pick up the scent of a female from miles away.



Male luna moths have extremely furry antennae that help them find female moths quickly. They need to because the adult moths only live one week.

Marking territory is another common use for pheromones. A territory is an area that an animal protects against others of the same species. Scent marking with pheromones is a way to let others know that one “owns” the area.



Pronghorn antelope use their scent to mark territory and to warn other pronghorns of danger.

The animal may try to keep others out to lessen competition for food, mates, or nest sites. Rabbits, for instance, mark the ground with a clear liquid from glands on their chin. Antelope place scent from their facial glands on leaves. Some animals mark an area with pheromones that mix with urine (pee) or dung (poop)—or both, in the case of hippos.

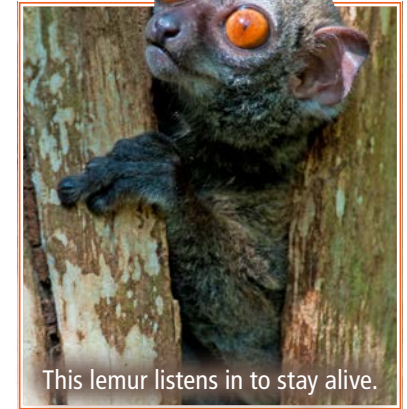
### Electrocommunication

Some freshwater fish produce a weak electrical signal to communicate and navigate. An electric organ, usually located at the base of their tail, creates the signals, which may communicate information about mates, territories, or other topics. These fish also have special cells in their skin that sense incoming signals.

## Communication Between Species

People who raise cats and dogs together know that these animals can communicate and sometimes form strong bonds with each other. No one knows whether different species of wild animals communicate on purpose. However, we do know that some animals pay attention to the communication of other species. Scientists call this activity *eavesdropping*.

One species of lemur stays safe from hawks with the help of the warning calls of another kind of lemur and two kinds of birds. When it hears any of those calls, it carefully scans the sky for danger. Some birds, monkeys, and other animals also eavesdrop on other species’ warning calls. Scientists will likely discover other examples of eavesdropping as they continue to study wild animals.



This lemur listens in to stay alive.

### Trail Tales

Eavesdropping in nonhuman animals isn’t just about sounds. A species of stingless bee eavesdrops on another species’ pheromone trails! It then avoids those trails, which are likely to lead to areas where the food has already been eaten.





Scientists have found that house mice make sounds that express several emotions, including fear, distress, and comfort.

### New Discoveries

Animal communication is a popular field of study, and the discoveries never end. Recent ones include the surprising fact that male mice sing to attract a mate. They make complex strings of sounds that are too high for humans to hear without special equipment. Scientists have compared these sound patterns to birdsong.

Recent research also found the source of a strange quacking sound in the Southern Ocean. Scientists and sea travelers had been hearing the “bio-duck” sounds since the 1960s. In 2014, a research team finally figured out that the sound came from minke whales. Scientists don’t yet know how or why these whales quack, but they will most likely find out as their research continues. Every discovery leads to new questions and a deeper understanding of, and appreciation for, the endlessly fascinating animal kingdom.

### Glossary

<b>bioluminescence</b> (n.)	light created by a biochemical process within a living thing (p. 10)
<b>complex</b> (adj.)	having many different parts; difficult to achieve or understand (p. 5)
<b>dominance</b> (n.)	the state of having control, power, or superiority over others (p. 9)
<b>glands</b> (n.)	organs that make and give off substances that are necessary for body processes (p. 12)
<b>infrasonic</b> (adj.)	having or relating to sound waves that are too low in frequency for humans to hear (p. 6)
<b>navigate</b> (v.)	to find one’s way over a long distance; to steer toward a destination (p. 7)
<b>organ</b> (n.)	a part of an organism that has a specific function, such as the kidneys or lungs (p. 6)
<b>phonic lips</b> (n.)	a group of structures in toothed whales, such as dolphins and porpoises, used to produce clicks and tonal calls (p. 7)
<b>structures</b> (n.)	arrangements or relationships of the parts in bodies that work together for the same purposes (p. 5)
<b>vertebrates</b> (n.)	animals that have backbones (p. 5)
<b>vibrates</b> (v.)	moves back and forth very quickly (p. 6)
<b>vocal</b> (adj.)	relating to the voice or speech (p. 5)