



Highly Commended

Science Writing Year R-2

Arastu Ravichandran

Burnside Primary School



Nature's Secret Languages: How Plants and Animals Communicate

Plants can communicate in two different ways: chemical and electrical signals.

When a caterpillar bites a leaf, it releases glutamate, and the glutamate helps trigger a wave of calcium ions. The calcium ions warn other parts of the plant to defend themselves from the danger.

Volatile organic compounds (VOCs) are a special set of chemicals that warn other parts of the plant and other plants about dangers nearby.

One type of VOC chemical is called methyl jasmonate, which is produced in injured plants. Methyl jasmonate warns other plants and helps them create defense systems. Sometimes the plant thickens its leaves, and guard cells close the pores and make chemicals that taste bad.

Animals usually communicate with their own species, but sometimes they warn other species. Animals communicate using signals like visual, touch-based, and sound-based. For example, peacocks display their colorful feathers to attract females. Dogs use nudging and rubbing to get attention. Whales use songs to keep in touch with other whales. Two scientists even tried to teach a chimpanzee sign language. The chimpanzee's name was Washoe. Whenever Washoe was around, the scientists used sign language so that Washoe got used to it. The scientists claimed that Washoe learned about 350 American Sign Language words.

Word Count: 213 including the title.

Disclaimer: My father assisted me in transcribing my handwritten notes into a digital document using Google Docs. I have attached the original handwritten text that I created after conducting my research.

References:

1. Plants Can “Speak” to Each Other -
<https://kids.frontiersin.org/articles/10.3389/frym.2022.658692>
2. Plants communicate distress using their own kind of nervous system -
<https://www.science.org/content/article/plants-communicate-distress-using-their-own-kind-nervous-system>
3. Washoe, chimpanzee - https://en.wikipedia.org/wiki/Washoe_%28chimpanzee%29
4. Communication in Animals - Communicating Using Visual Signals -
<https://betterplaneteducation.org.uk/factsheets/communication-in-animals-communicating-using-visual-signals>
5. Secret World of Sound with David Attenborough: Netflix Documentary

VOC (volatile organic compounds)

VOCs are a special set of chemicals that warn other parts of the plant and other plants about dangers nearby. One of the most one type of VOC chemical is called methyl jasmonate, which is produced in plants. injured plants. Methyl jasmonate warns other plants and helps them create defence systems. Some times the plant thickens its leaves and guard cells close the pores and make chemicals that taste bad.

Plants can communicate in two different ways chemical and electrical signals.

When a caterpillar bites a leaf it releases glutamate and the glutamate helps trigger a wave of calcium ions. The ions warn other parts of the plant to defend themselves from the danger.

~~Animals. Animals communicate using low growls, chirping and moaning sounds. Some animals like monkeys emit high pitched sounds to warn others of dangers nearby. Dolphins communicate by using high pitched clicks. Subsonic sounds are too low for humans to hear, and ultrasonic sounds can hurt our ears. Scientists have been trying to make a machine that lets us hear subsonic sounds. Finally by recent technology Scientists have finally uncovered it. frequency is measured by Hertz. Humans can hear from 20 Hz to 20,000 Hz. The bigger the skull is the lower frequency it can receive, the smaller the skull is the more frequency it can make and hear.~~

Animals usually communicate with their own species but sometimes they warn other species. Animals communicate using signals like visual, touch-based and sound-based. Like peacocks, peacocks display their colourful feathers to attract females, dogs use nudging and rubbing to get attention, whales use songs to keep in touch with other whales. Two scientists even tried to teach a chimpanzee sign language. The chimpanzee's name was Washoe, whenever Washoe was around the scientists used sign language so that Washoe got used to it. They let Washoe watch wild chimps because chimps naturally use hand gestures to communicate. The scientists claimed that Washoe learned about 350 American sign language (ASL).