



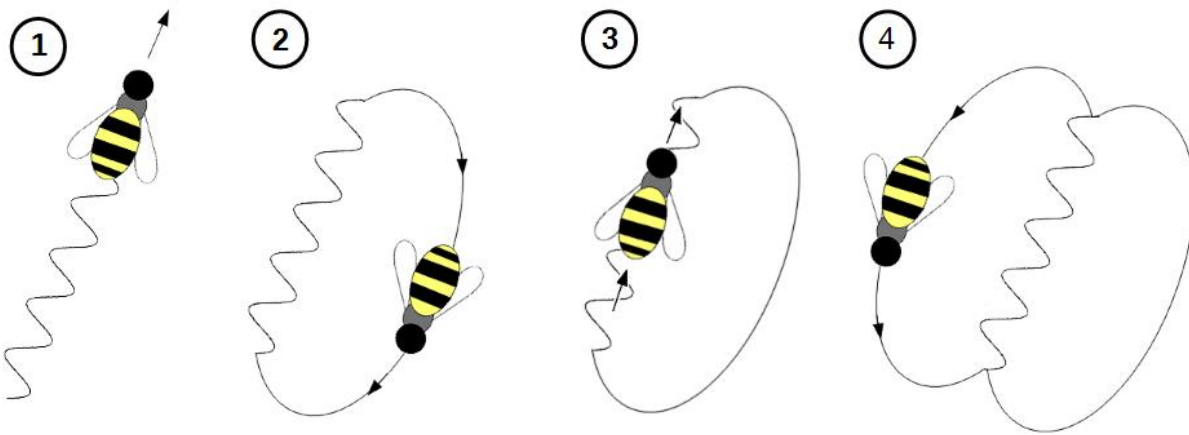
How Do Bees See?

Honeybees and most insects can see a lot of the colors we can see— green, blue, and violet. But, honeybees cannot see reds very well. Instead of reds, they can see ultraviolet light. Ultraviolet light is the light from the sun taht we try to protect our skin from using sunscreen. A super cool thing is that most flowers have ultraviolet patches called nectar guides. These guides help attract bees to land and show the bees where to get nectar.



How Do Communicate?

Honey bees use all of their senses to find the best flowers including: smell, color, shape, location, petal textures, and time of day. But how do you think a bee do tells the others what she has discovered? Can you guess from the picture below?



So how does a honeybee tell the hive when she finds the locations of flowers, water, or new home? Did you guess? She will fly home and dance. That's right! She dances a special type of dance called a "waggle dance". In the waggle dance the scout will shake their abdomen and use the angle of their body in relation to the hive ceiling to tell everyone else which direction to go and how far to fly to find what they are looking for. Then the bees go off and check out this location for themselves.

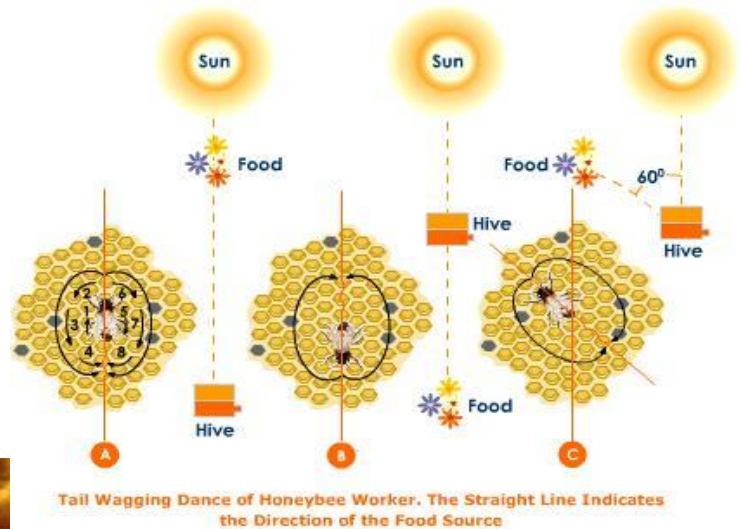
Dr. Karl von Frisch



Karl von Frisch, a zoologist from Austria, is the man who is credited with making this discovery. In fact, in 1973 he won the Nobel Prize in part for deciphering the language of the bees. So how did he do it? Well, he did some experiments. In one of his first experiments, he put a honeybee hive in a field with a single nectar feeder for the bees to collect from. He then would sit and watch the bees inside their hive. After many hours of observation, he noticed the bees doing a wagging behavior inside the hive.

They would waggle by shaking their abdomen fast and then move in sort of a figure 8 pattern. As he watched he traced and measured the bees when they did this. By doing this he noticed that the bees changed the angle that they danced at the same rate as the sun moving through the sky. Pretty

cool. He also discovered the bees were using dance to point the rest of the bees to the sugar feeder relative to the position of the sun. Later on, Dr. Frisch and others learned more the other parts of the bee dance language that show the distance. Even though we now know this, there is still so much to learn about how bees communicate!



Can you tell which bees are doing the waggle dance?