



When a honeybee scout finds food, she uses two known tools to understand where it is. One is her **solar compass**, which lets her remember where things are in relation to the **sun**. The bee's ability to see polarized light lets her determine where the sun is, regardless of whether it is obscured by clouds. The other tool is her **internal clock**, which lets her keep track of how far she has flown. Her internal clock also lets her determine of how much the sun moves during her journey. In other words, when she returns to the hive, she can tell her sisters exactly where the food is in relation to the current position of the sun, not the position of the sun when she found the food.

As a bee matures, she also learns about how the sun's path across the sky changes during different seasons of the year and at different latitudes if her hive is moved. She can incorporate these changes into her measurements.

When she returns to the hive, the scout bee **recruits** her sisters to carry the food back to the nest. They, like the scout, are the oldest bees in the hive. The scout distributes samples of the food, which will help her sisters find the food when they reach their destination. Then, she performs a dance on the vertical surface of the combs in the hive. The area on which she performs the dance is commonly known as the **dance floor**, and the worker bees who observe the dance are **followers**.

If the food is nearby, the bee performs a **round dance** by traveling in loops in alternating directions. The round dance doesn't convey much information about exactly where the food is. However, it's generally close enough that the worker bees can smell it fairly quickly.

When the food is far away, the scout performs a **waggle dance**. During the waggle dance, the scout runs in a straight line while wagging her abdomen, and then returns to the starting point by running in a curve to the left or right of the line. The straight line indicates the direction of the food in relation to the sun. If the bee runs straight up the hive wall, then the foragers can find the food by flying toward the sun. If she runs straight down the wall, then the foragers can find the food by flying away from the sun. As the dance progresses, the dancing bee adjusts the angle of the waggle run to match the movement of the sun.