

## How do Bees Communicate?

What do honey bees need to survive [this activity focuses on pollen, nectar, and shelter]?

What are some factors that can affect the honey bee population?

How do honey bees communicate?

PLT Activities: Adapted from “Every Tree for Itself”

<b>Engage</b>	Show students the live beehive. What do you see? This is where honeybees live, it is their shelter and where they store food, lay eggs and raise their young.
<b>Explore</b>	What are the other things that a honeybee needs to survive? Use photos to prompt ideas for example; pollen covered bee or nectar flowers. Do you think bees share with other bees where the nectar and pollen can be found? How do you think that they communicate?
<b>Explain</b>	Assist students in designing a “bee dance” for locating the 3 needs, one special move for each need (pollen, nectar, shelter). Explain that the students are going to play a “Bee Talk Game”, they will divide into 2 or more teams*. Each person on a team will retrieve resources for the team to survive. The game lasts until all the resources are gone. Resources are the 3 things a bee needs to survive, pollen, nectar, and shelter. The first person may go collect from any resource that they want by going to an area and picking up a resource chip. They return to their team and use the bee dance motion to send the next person to a specific resource and repeat until all the resources are used up. A team member can only go to the site that their team member sent them, if there aren’t any resources left they return to the team and send the next team member to another resource site. This continues until no resources are left. Count each team’s resources, Example: Team “A” has 10 members, if they collectively collect 10 shelter, 10, nectar, and 10 pollen everyone on the team survives, but if they have 10 of one resource, 12 of another and 8 of another 2 team members would die.
<b>Extend</b>	Play the game again and compare results. For older students or small groups play a round with a disease chip inserted to one of the resources, the team that gets that resource chip dies. This might be from pollution or bee diseases.
<b>Evaluate</b>	Ask students to name three important things honey bees need to survive, demonstrate how honey bees communicate and name one factor that affects the bee population

\*Modification: One way to divide students into teams is to introduce the concept of communicating by pheromones. Tell students that, without talking, they will be using their sense of smell to locate their hive mates. Choose a variety of distinctly smelling oils or flavorings from the baking section of the grocery store (one per team—we often use mint, cherry, orange, and almond). Decide how many students you want on each team and set aside enough cotton swabs for each team. Using only one scent per team, saturate one end of the cotton swab with the oil. Once you have all of the cotton swabs saturated with the designated scent, mix them up and distribute them to students. Without talking, students must move around the room and try to link up with others who have a matching scent. Once all the students have found their groups, review the dances for pollen, nectar, and shelter and begin the activity.