



# Learning to Protect the Hive Cloverbud Lesson



## OVERVIEW

Learning about the society of bees demonstrates that even the very smallest creatures have to follow rules and work together. Bees are very hard workers and do their job to make sure that the hive is strong. A bee smells, tastes, and feels with its two antennae.

## OBJECTIVES

Participants will locate colony “bee family members” by scent.

LESSON AT A GLANCE	
<b>Lesson Material Preparation</b>	Collect materials for lesson. Include a discussion on hives and how a bee finds its way back to a hive. It uses its antennae to “smell” for brothers and sisters. They all have the same scent. Use the small poster of a beehive to begin the lesson (photo on last page of lesson).
<b>Supplies &amp; Equipment</b>	Activity Supplies: <ul style="list-style-type: none"> <li>• Poster of bee hive</li> <li>• Food flavorings (scents): lemon, coconut, vanilla, peppermint, almond</li> <li>• Q-tips or cotton swabs</li> </ul>
<b>Background Information</b>	<p>In the animal kingdom animals have instincts that they use to keep themselves safe. Honeybees keep intruders out using scent. Guard bees detect a foreign scent and will sting it to death. All bees in a colony have the same scent. Bees "smell" many things. Guard bees sit or hover near the hive entrance and "smell" other bees trying to enter the hive. If the bees don't have the correct odor of that particular hive, they are expelled. The new virgin queens produce a special odor called a sex <a href="#">pheromone</a> to attract drones during the mating <a href="#">flight</a> . Bees also use odors to help locate their hive or their new home after swarming. To humans, this pheromone smells lemony.</p> <p>When a bee stings, she releases an odor called an alarm pheromone to alert others to the danger. This alarm pheromone smells like bananas and attracts other bees to come to the defense of the hive. This pheromone stays on clothing, so if you are stung you should wash your clothing before wearing it again.</p> <p>The queen bee has her own pheromones in addition to the smell she produces when ready to mate. The queen also maintains behavioral control of the colony by a pheromone known as the "queen substance." As long as it is being passed around, the message in the colony is that "we have a queen and all is well." When a beekeeper wants to requeen a colony by introducing a queen from another source, he or she must place the queen in a cage within the colony for up to five days in order for the worker bees to get used to her odor.</p>

TEACHER NOTES
Review the entire contents of the lesson and prepare accordingly.

OUTLINE	SCRIPT & INSTRUCTIONS
<p><b>Introduction</b> Icebreaker related to topic (What I know about the topic)</p>	<p>We live in a society or community. Bees do too. Their community is called a colony.</p> <p>The colony is in danger! What do bees have in their colony that they want to protect? Honey.....that's right.</p> <p>Bees are so tiny. Can you think of a way that they might protect their colony? (they sting)</p>
<p><b>Classroom Discussion</b> (What I want to know about the topic)</p>	<p>Bees are very important to gardeners. They pollinate flowers so that plants can make fruits and vegetables. Without bees, farmers and gardeners would have a hard time pollinating all of their crops.</p> <p>Bees smell, taste, and feel with their antennae. The antennae help them find their colony members. Each colony family has a certain smell. If a stranger bee comes along and has a different smell, the guard bees will not allow them to enter and they will attack and kill the stranger. The guard bee's job is to make sure that the hive is safe. The Queen and her eggs must be protected to ensure that the hive will survive.</p> <p>It's important that we protect bees. They are responsible for the pollination of food that animals and people eat. If we harm their home or kill them because we are afraid of them they cannot pollinate. Bees that are out in our backyards and flying around are work bees. Most of the time they do not sting because they are out searching for nectar. If we chase them, swat at them, or smack them with objects, we are stopping their work.</p> <p>Bees do talk with each other the way that we talk. But we use our mouths and words. Bees have to find other ways to talk. They use their bodies to move in certain ways. They also use their antenna to taste, feel, and smell. They can tell if another bee belongs in their colony by smelling with their antenna.</p>
<p><b>Activity</b> (What I learn about the topic)</p>	<p>Today we are going to pretend to be honeybees. However, we are all from different colonies and hives. We will have to use our antenna (cotton swabs) to locate our family members. The family members are going to have the same smell (scent). Stranger bees will have another smell.</p> <p>(Teacher will dip each set of cotton swabs in the food flavorings. Distribute the scents around the room. For younger children a teacher may only have two food flavorings for them to sort through. At the end of the activity the children will be in groups by their flavoring).</p> <p>Directions:</p> <ul style="list-style-type: none"> <li>• Please close your eyes and hold out your fingers.</li> <li>• You will each receive an antenna (cotton swab) in your hand.</li> <li>• At the tip of your antenna you will have a scent.</li> <li>• Your family members all have the same scent. You will use your antenna as a clue to find other family members.</li> <li>• You will go around the classroom and smell the antennas of the other bees. When you find a bee with the same scent, stick together. You are family.</li> <li>• Form a colony together.</li> </ul> <p>Could you look at an antenna with your eyes to tell if a bee was from your colony? Was it easy or difficult to find your colony members? Would a person be able to find their family by smelling?</p>

<p><b>Wrap Up</b> (What does this remind me of?)</p>	<p>As humans, do we have ways that we protect our homes? What if we were blindfolded? We would not have our eyes to help us even see the cotton swab. Bees cannot “see” like we do, they only have their antenna.</p> <p>It is important that we learn about bees and the work that they do on the earth. We need to protect bees to make sure that they have safe homes, water, and flowers to collect nectar.</p>
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<p><b>RESOURCES</b> <a href="http://www.scholastic.com">www.scholastic.com</a> <a href="http://www.universityofarizonaextension.com">www.universityofarizonaextension.com</a></p>	<p><b>EXPLORING (DIG DEEPER)</b> Explore other animals in the animal kingdom to learn how they communicate, protect their young, sense their world.</p> <p>What would you do if you were stung by a bee?</p>
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# The Beehive

