

Madeline Tubbs

Lesson Plan	
Grade Level: 3-5	
Lesson Title/Subject: Honey Bees and their Importance to the Food Supply	
Materials	<ul style="list-style-type: none">- Bee suit- Hive box with frames- Smoker- 10 different pictures of the Queen with workers- 3 baskets- 3 ziplock bags of pom poms- 3 plastic (or real) flowers- Bee stickers to give out at the end (optional)- tiara/crown (optional)- Hive tool- Paper with lines where students can sign the pledge- Clipboards for the Bee Friendly Pledge- 3 baskets- Pens or pencils
<u>Standard(s)</u>	Standard 5.3: Children observe and investigate living things. Standard 5.4: Children observe and investigate the Earth.
Objective(s)	SWBAT (Students Will Be Able To) understand the impact of honeybees on our environment. SWBAT practices bee friendly activities that can help honeybees
Introduction/Hook	Ask students, "Why do we want to be bee friendly?" <ul style="list-style-type: none">- Bees help us grow fruit and vegetables to eat<ul style="list-style-type: none">- (through pollination).- Bees produce honey and beeswax
Discussion/Conversation Elements and sequence	<ol style="list-style-type: none">1. Pollination<ol style="list-style-type: none">a. Bees pollinate many foods we eat every day. One out of every three bites of food we eat have been pollinated by honey bees. Crops include:<ol style="list-style-type: none">i. Apples (show food examples), Cranberries, Melons, Broccoli, Cucumber, Tomatoes, Eggplants2. Who is the queen bee?

- a. She lays the eggs, which then become larvae. During the pupae stage they become capped brood.

3. ACTIVITY I - Spot the queen!

4. The honey bee hive:

- a. Show the students the honey bee hive and point out the parts of the hive (entrance, box, frames, foundation frames, inner cover, outer cover.
- b. Talk about the smoker, hive tool and other pieces of equipment including the bee suit.
 - i. Smoker: calms bees down (through interrupting the transfer of danger pheromone scent from bee to bee.) Talk about how scent is used by humans as a warning signal with the stench of spoiled food.
 - ii. The bee suit allows beekeepers to safely perform inspections of the beehive. Bees cannot sting through the fabric or netting. During inspections, beekeepers look for the amount of honey that the bees have, the brood (baby bees) to make sure the hive is healthy and disease-free, and to say hi to the queen!

5. **What can we do to help the honey bees?** (essential q)

a. **bee kind!**

- i. Don't bother them and leave them to do their work when you see them outside
- ii. Grow bee-friendly plants and flowers in your home gardens
- iii. Resist using harmful pesticides and use bee-friendly pest solutions instead

6. Why are honey bees specifically important?

- a. There are many types of bees, wasps and insects that pollinate.
- b. Wasps and other types of bees (bumble bees, carpenter bees, mason bees) live either alone or with a very small number of family members in nests that they build underground in the dirt, or hanging from a branch in a tree.
- c. Crops are grown on huge farms. Sometimes the farms are so large that is all you can see.

	<ul style="list-style-type: none"> d. Pollinators need variety/diversity in their diet. A wasp or bumble bee wouldn't build a nest in the middle of an apple orchard because that means all they would be able to gather is apple pollen. Apple trees don't bloom all year, so they also would starve during the part of the year when there are no flowers. e. A honey bee hive filled with thousands of honey bees, however, can be easily moved by a beekeeper from one field to the next. f. The honey bee hives can feast on blueberry blossoms from late June until mid-August, then go to grape vineyards for August and September. They can even be trucked from New Jersey to Florida from February to March to pollinate oranges. <p>7. Connect the students to the honey bees</p> <ul style="list-style-type: none"> a. le: students in class may have a role (line leader, door holder) just like all honey bees have roles in a honey bee hive- the queen bee is the mom of all the bees in the hive, nurse bees take care of the baby bees, guard bees keep unwanted pests out of the hive, etc. There are even mortuary bees! <p>8. Activity II (details below) "Queen Bee Says" game</p>
<p>Activities</p>	<ul style="list-style-type: none"> 1. Spot the queen! <ul style="list-style-type: none"> a. We have 10 different pictures of the queen bee 'hiding' among worker bees. Students at their tables will cycle through all the pictures. Essentially, this activity is a variation of the "Where's Waldo" game. 2. Queen Bee Says game <ul style="list-style-type: none"> i. Materials needed: 3 plastic (or real!) flowers, 3 ziplock bags of pom poms, a tiara(optional), 3 baskets or bags b. This game plays along with the basis of the game "Simon Says" c. Select three students to be flower holders. These students will hold a flower, and will serve as the stops for where the "bees" will stop to "pollinate" the flower and grab pollen (pom poms) d. Select 3 students to be the "bees". These students will have 1 basket each that they will fill with "pollen" pom poms as they reach a flower. The

	<p>students must follow the Queen Bee's (teacher's) instructions.</p> <ul style="list-style-type: none">e. "Bees" start at the "beehive" (finish line).f. Queen Bee (with the optional tiara/crown) says "Queen bee says hop three steps!". Each step goes closer to the first flower.<ul style="list-style-type: none">i. Following the general idea of Simon Says, When the "bees" do an action that did not start with "Queen Bee says" they have to start again at the last checkpoint.g. Once they reach a flower they take a handful of pom poms and put them in their basket, but have to be careful to not drop them! After the bees reach the flower farthest from the hive, they then follow the instructions to return to the hive.h. Once all the bees return home to the hive, the 'bee' with the most pom poms (pollen) wins!
Closing	Students will sign the Bee Friendly Pledge (if they want to and agree, of course). While students wait to sign/have signed already, they may look at additional pictures of bees and the hive.