Conducting a Beehive Inspection

Age group: Middle-high school.

Timeframe: 1 hour

Nutshell: Students participate in a routine beehive inspection, practicing basic beekeeping techniques such as using the hive tool and smoker, identifying eggs and larvae, and manipulating frames. Students also gain comfort around the hive.

Supplies:
- Flags or line marking off areas where students should stand while observing or working with hive.
- Bee suits
- Smoker with lighter and fuel
- Hive tools (2-3)
- Bee brushes (2-3)
- Container for collecting burr comb/wax
- Extra box and frames
- Beekeeping Record Sheet

Set-up:
- Set out bee suits and gather fuel for smoker.
- Make sure you have all beekeeping tools you will need – you don’t want to have to make extra trips back to the shed once you open the hive.

Activity Description
- Remind students of the basic beehive behavior rules. (See Safety Around the Hive lesson.)
- Before approaching the hive, give students an overview of why we do hive inspections: to make sure bees are healthy and thriving. If they are having trouble, we try to figure out why, and help them.
- Briefly explain what we will be looking for (cover additional details when you are next to the hive. You can also cover these skills separately, over multiple activity sessions):
  - Make sure the queen is alive and healthy. The easiest way to do this is to look for eggs – this shows us she has been here in the last 3 days. Eggs should be in the center of the cell, and cells should be laid in a consistent pattern – “spotty” laying is a sign of a sickly queen.
  - Make sure bees are bringing in pollen and nectar: Look for pollen and nectar/honey stores – compare to last observation.
  - Check for signs of disease: Are there funny smells or colors? Is the brood laid in a strange pattern? Do you see other insects? Are there a lot of dead bees laying around? Do you see larvae that are dead/shriveled or
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- bees with crippled wings? See Marla’s Spivak’s *Honeybee Pests and Diseases* for more information about diagnosing disease.
  - **Remove excess burr comb, collect for later use**: This is often found on the inner cover or on top of frames. Too much burr comb can mean bees need more space. A little is ok. Kids like to collect it.
  - **Make sure bees have enough space**: The queen tends to move “up” in the hive to find new places to lay her eggs. Once we find the main **brood chamber**, we should make sure there are empty cells above it for the queen to move into. If they think they are out of space, bees could **swarm** – especially in spring and early summer. From May-July, we often try to “trick” the queen by reversing Box 1 (mostly empty) with Box 3 (full of brood.) See Marla Spivak’s *Beekeeping in Northern Climates* for more information about the reversing technique. Sometimes, if all boxes are full, we may need to add a new, empty box.

### Tips and Tricks for Hands-on Hive Activities:
- **Most students get tired and hot after about 30 mintues.** Try not to have them at the hive longer than that – make sure everyone leaves with a positive experience! If this means they need to leave early, ok!
- **As the lead beekeeper, your job is to show students the proper technique, but also to facilitate the group experience.** Make sure students get equal opportunities to use the smoker, etc. The experience is often very individualized based on student comfort level.
- **Beekeeping is a prime opportunity for teachable moments.** We often do not cover most of the information other than safety info until we are at the hive. You can also bring in information about bees from other lessons as you make observations, or as student questions arise.
- **Some students will get more out of very carefully watching one bee than they will out of learning how to work with the whole hive.** This is ok!

Proper set up for homemade bee suit (see Safety at the Hive for more details):