



Beekeeping 101

I. Contacts

- A. Your Local Beekeepers Association – It is highly recommended that you seek volunteers from your local beekeepers association. Their experience will help you deal with issues that just are not addressed in books. They can be excellent mentors to student. To find your local association, visit: <http://www.ksbabeekkeeping.org/local-beekeeping-organizations/>
- B. Tammy Horn Potter, Kentucky State Apiarist, Kentucky Department of Agriculture, (502) 229-2950 (cell), <http://www.kyagr.com/statevet/honeybees.html> - The State Apiarist Office provides free hive and apiary inspections for Kentucky beekeepers, and offers other services and resources.
- C. Laura Rogers, Small Farm Area Agent, Kentucky State University - Pulaski County Office, laura.rogers@kysu.edu, (606) 344-0712

II. Resources to Prepare a Lesson Plan

- A. Kentucky Beekeepers Association - www.ksbabeekkeeping.org
- B. Bee Culture Magazine – <http://www.beeculture.com/>
- C. Basic Beekeeping Techniques - http://masterbeekeeping.com/images/bee_books/BasicBeekeepingTechniques.pdf
- D. Beginning Beekeeping for KY - <http://www2.ca.uky.edu/agcomm/pubs/ent/ent41/ent41.pdf>
- E. JR. BEEKEEPING UNIT 1 – Grade 5 The Family Tree of the Honey Bee – PRIDE website on Education Grant page
- F. JR. BEEKEEPING UNIT 2 – Grade 6 A Honeybee Colony - PRIDE website on Education Grant page
- G. Kentucky Beekeeping Guide for Beginners - <http://www.nkybeekeepers.com/uploads/KYBeekeepingGuideforBeginnersTWebster07final.pdf>
- H. Free Online Beekeeping Lessons - www.honeybeesonline.com/beekeeping-lessons/
- I. Tennessee Beginning Beekeeping - <https://ag.tennessee.edu/EPP/Extension%20Publications/Beekeeping%20in%20Tennessee.pdf>
- J. Indiana 4H-Division 1 Understanding the Bee - <https://www.extension.purdue.edu/extmedia/4H/4-H-576-W.pdf>
- K. Indiana 4H-Division 2 Working with Bees - <https://extension.entm.purdue.edu/publications/4H-586.pdf>
- L. Missouri Beekeeping Keeping Tips for Beginners - <http://extension.missouri.edu/nodaway/documents/Bee%20Keeping%20Tips%20for%20Beginners%2007600.pdf>
- M. New Jersey 4-H Beekeeping - http://three-peaks.net/PDF/New%20Jersey%204-H%20Beekeeping_Manual_2009.pdf
- N. OSV BEE Beekeeping Guide - http://www.kyagr.com/statevet/documents/OSV_BEE_BeekeepingGuide.pdf
- O. PowerPoint Presentations – Ohio State Beekeepers



Find all following PowerPoints at this website: www.ohiostatebeekeepers.org/wp-content/ppt/

1. OSBA_Beekeeping_slide_set_1_Intro_beginners
2. OSBA_Beekeeping_slide_set_2_Getting_Started
3. OSBA_Beekeeping_slide_set_3_Intro_Bees_World
4. OSBA_Beekeeping_slide_set_4_Starting_Colony
5. OSBA_Beekeeping_slide_set_5_Managing_Bees
6. OSBA_Beekeeping_slide_set_6_Spring_Management
7. OSBA_Beekeeping_slide_set_7_Summer_Management
8. OSBA_Beekeeping_slide_set_8_Fall_Winter_Management
9. OSBA_Diseases_of_Honey_Bees
10. OSBA_Management_of_Nucs

III. Materials Needed and Suggested Vendors

- A. The Hive – It is recommended to begin with 2 hives so at least 1 will be producing if there is a problem with the other. Also, the hives should be located in a fenced area (at least an electric fence) for their protection from bears and vandals.
 1. Deep Boxes
 2. Shallow Boxes
 3. Deep Frames
 4. Deep Plasticels
 5. Shallow Frames
 6. Shallow Foundation
 7. Top/Inner Cover
 8. Bottom Board
 9. 9 Frame Spacer
 10. Paint & Brushes
- B. Protective Gear - Buy the better, thicker suits so kids are more protected from stings. Purchase the jacket/pants/gloves option instead of a coverall.
 1. Adult Jacket
 2. Adult Pants
 3. Adult Gloves
 4. Student Jacket
 5. Student Pants
 6. Student Gloves
 7. Boot Bands
- C. Equipment – No homemade or used equipment is allowed. You must purchase all equipment from a Bee Supply company.
 1. Smoker
 2. Smoker Fuel
 3. Feeder
 4. Queen Clip Catcher
 5. Metal Frame Rest



6. J Hook Hive tool
 7. Bee Brush
 8. Metal Bound Excluder
 9. Apiguard
 10. Round Frame Holder
 11. Locks/Keys (Only if you are locking them up)
 12. Supplies
 13. Bottles
- D. Bees – Bees must be purchased in 5 frame nucs only.
1. www.dadant.com Call 888-932-3268
 2. www.kelleybees.com
 3. www.honeybeesonline.com/packages-of-bees.com
 4. www.thehoneyandbeeconnection.com
- E. Resources to purchase components
1. www.dadant.com
 2. www.buildabeehive.com
 3. www.kelleybees.com
 4. www.thehoneyandbeeconnection.com/
 5. Jim Coss, The Honey and Bee Connection - <http://thehoneyandbeeconnection.com/>
Office: 606-784-3108; Jim Coss: 606-207-7785;
jcoss@thehoneyandbeeconnection.com
- III. Budget – Range of \$1,400 - \$2,000
- A. Hives and Bees – It is recommended to begin with 2 hives. (\$600-\$800)
- B. Protective Gear – It is recommended to have one outfit per person.
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| 1. Adult Jacket with Hat-Veil, Pants, Gloves | \$120.00 |
| 2. Student Jacket with Hat-Veil, Pants, Gloves | \$115.00 |
| 3. Boot Bands | \$4.15 |
- IV. Suggested Timeline
- A. Fall 2017 – Educate students about bees and beekeeping and visit local hives.
 - B. Winter 2017/18– Construct the hives.
 - C. Spring 2018 – Bees should be added to a new hive in late March / early April.
Summer/Fall/Winter 2018 – Monitor and manage the hives.
 - D. By Spring 2019 – The hives should be producing enough honey to harvest.
- V. Example Project – McCreary County 4-H Bee Club
- A. Grant applicant who provided these details: Greg Whitis, McCreary County Cooperative Extension Agent, gwhitis@uky.edu



About the 4-H Bee Club: The club has six members, ranging in age from 12 to 16 years old. Whitis leads the club and is grateful to volunteers from the Big South Fork Beekeepers who helped construct hives and educate students. Club members tackle all aspects of beekeeping: building hives, adding bees, monitoring the hives monthly (sometimes twice a month), robbing hives, extracting honey and processing honey.

The club established two hives in Spring 2017 at an old school building, which is now used for storage. In July 2017, they first robbed one of their hives. (Whitis said that was early because it usually takes one year for the hives to produce enough honey to rob.) Before the club's bee hives began producing honey, students worked with Whitis' personal bee hives.

- B. Educational benefits: Whitis started the club in Fall 2016 when several local students expressed interest in beekeeping. The club is giving them hands-on experience so they are prepared to start their own hives, if they decide to do so.

"By joining the 4-H Bee Club, students can figure out if they are serious enough to invest in their own hive, which can cost \$500 or \$600," he explained. "For students who go through this program and decide they want to start hives at home, my goal is to help reduce their start-up cost by arranging for local beekeepers to donate their first bees."

"They got a real education when they discovered one hive, the one that had been the strongest, had swarmed and lost its queen," Whitis said. "As soon as we opened the hive, the kids knew something was wrong. We just didn't have numbers that we did before. We had to diagnose the problem. We had to replace the queen and start over with that hive. They had to do math to know how long it would take for that hive to produce honey. They determined it is about six weeks behind the other hive."

"When they begin selling their honey, we will work on marketing skills," he said. "I think some of them will want to design their own labels, too, because they are artistic. We will work on accounting skills when they start using the club's money to buy supplies."

Also, beekeeping skills are timely because Whitis said that Eastern Kentucky is primed to be a big player in pollinators. We still have small fields and wild areas instead of big, monoculture agriculture that is threatening bee populations elsewhere.

- C. Funding:
1. Start-Up – Whitis bought the hives, supplies and protective suits with \$1,000 through the PRIDE Environmental Education Grant program and \$500 through the 4-H Ag Achievers Grant program. Grow Appalachia donated the bees, valued at approximately \$300.
 2. Future – The club's goal is to fund itself through honey sales. Whitis expects the hives to start producing enough honey regularly by next spring.
- D. Tips from Whitis:



1. Learning curve – Remember that you are keeping an insect in a box, and it's unpredictable. The bees don't watch the Youtube videos or read the books about how they are supposed to behave. There is a continual learning process. No matter how long you have been a beekeeper, you learn something new every year. There are changes ... new diseases ... new insects that bother the bees. Partnering with your local, experienced beekeepers will help.
2. Protective gear – Students can be stung even through protective gear. Whitis said his students and their parents understand that up front. All students must wear suits while at the hives. Even if they try to wait a safe distance away, one or two bees could wander away and sting them. He recommends buying a jacket, pants and gloves as a set, instead of buying the coverall style suits. He recommends buying the thicker attire to offer the best protection from stings. One set could cost \$100-110. Getting the right assortment of sizes to match students will be tough.
3. Buying bees – He suggests that you buy bees in a 5-frame NUC instead of a 3-pound package. In the NUC, there is a queen already laying eggs. You will get honey quicker.
4. Location – Finding a location for the hives can be a challenge. Some schools and extension offices will allow hives on site, but some will not. His club's hives are located at an old school building, behind two locked gates. Fencing is important due to bears in this region. He recommends at least an electric fence to keep out bears.

VI. Complementary Projects

- A. Pollinator Garden (Butterfly Garden)