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Beekeeping provides valuable learning across many subjects.

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Jan Joss was a faithful servant and the principal architect of curriculum at BJU Press.

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Beekeeping: A Sweet Educational Opportunity

Learn surprising ways beekeeping can help your children grow in their academic studies while providing a unique and fun way to learn.

Beekeeping is packed with educational opportunities especially well suited for home schoolers. However, a few questions immediately come to mind: How is beekeeping educational? How much effort, money, and time does this take? Is it dangerous? Will our neighbors mind? How much honey will we get? Can we sell the honey? Let's consider the benefits of beekeeping in the home school.

It's a pretty straightforward process to build a beehive—really just a wooden box with several removable frames inside that hold beeswax—and establish a

colony. You can order hives from a supply company, or you can find hive plans and instructions in numerous beekeeping books and on the Internet. You should follow the standard hive dimensions, partly so that your equipment is compatible with other equipment and partly because the standard dimensions consider the importance of “bee space.”

You'll also need a smoker, a veil (better yet, buy or improvise a bee suit), gloves, wax foundation, a hive tool, and, of course, bees. Toward the end of the first season you will need to purchase some medications (for the bees, not yourself) and, if

Beekeeping across the Home School Curriculum

Biology/Life Science

- Capture and compare workers and drones.
- Use a microscope to examine the stinger, pollen baskets, and other body parts.
- Open the hive and examine the developmental stages.
- Start an observation hive (after you have a little experience).
- Try to identify the plants the bees are collecting nectar/pollen from.
- Report on the steps that turn nectar into honey.
- Research what keeps honeybee populations in check.

Math

- Estimate the number of bees in a colony and then further estimate the number of drones and number of workers performing each duty.
- Project the colony's population growth, given a queen's typical egg-laying capacity.
- Calculate the number or percentage of your bees infested with varroa mites based on published sampling techniques.
- Examine the geometric pattern of honeycomb.
- Determine average honeycomb cell dimensions and calculate the volume of honey for one hexagonal cell and from a whole frame.

History

- As part of a study on colonial America, research how bees were kept and honey was harvested in colonial times. (It's different from today.)

Art

- Make craft items from beeswax.

Wood Shop/Industrial Arts

- Construct your own hives.

Health and Consumer Science

- Prepare baked goods utilizing honey.
- Research health-benefit claims about raw honey, pollen, and propolis.

Business

- Start a sideline business selling honey.
- Keep a business ledger of expenses and income.
- Prepare a (fictional) business loan application for your honey business.

Bible

- Do topical studies of insects and honey in the Bible.

English

- Assign various writing assignments using bees or honey as the topic.

you wish, more equipment to expand your operation.

If you purchase everything from a bee supply company, plan on spending \$200 initially. I acquired new, used, and homemade equipment, ordered package bees, and purchased some nonessential items, all for approximately \$150. For each additional hive after your first, expect to spend up to \$100.

Bees for your hive are delivered through the mail. (Expect questions from post office employees when you collect your buzzing package!) Detailed instructions for getting the bees into their new home are available in books and on the Internet. In short, put the queen in the hive (she initially stays in her own small cage). Then release the three pounds of bees (yes, you buy them by the pound) into the hive and replace the lid.

Packaged bees are less expensive, but you probably will not harvest any honey from them the first year. Alternatively you can purchase a mini colony called a nuc. Nucs are more expensive but probably will give you a good honey harvest the first year.



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Plan on setting up your new colony when the apple trees are in blossom in your area. You need to place your order for bees in January (they sell out in February). The bees are mailed in springtime at the appropriate time for your area. Other important annual events are adding

Prior to starting your first colony, have your children do some background research on keeping bees. Keep a journal or other record of their findings for reference.

supers to the colony (supers are smaller boxes with frames where the bees store honeycomb), harvesting the honey, preparing the colony for winter, and applying medications to control diseases and pests.

Safety is a concern, especially if someone in your family is allergic to bee stings. You will get stung, but not often, and honeybee stings are not as painful as other stings. I keep a bee sting kit with my equipment just in case. (By the way, the mean-tempered Africanized bees have not reached my area. If they are in your area, be especially cautious.)

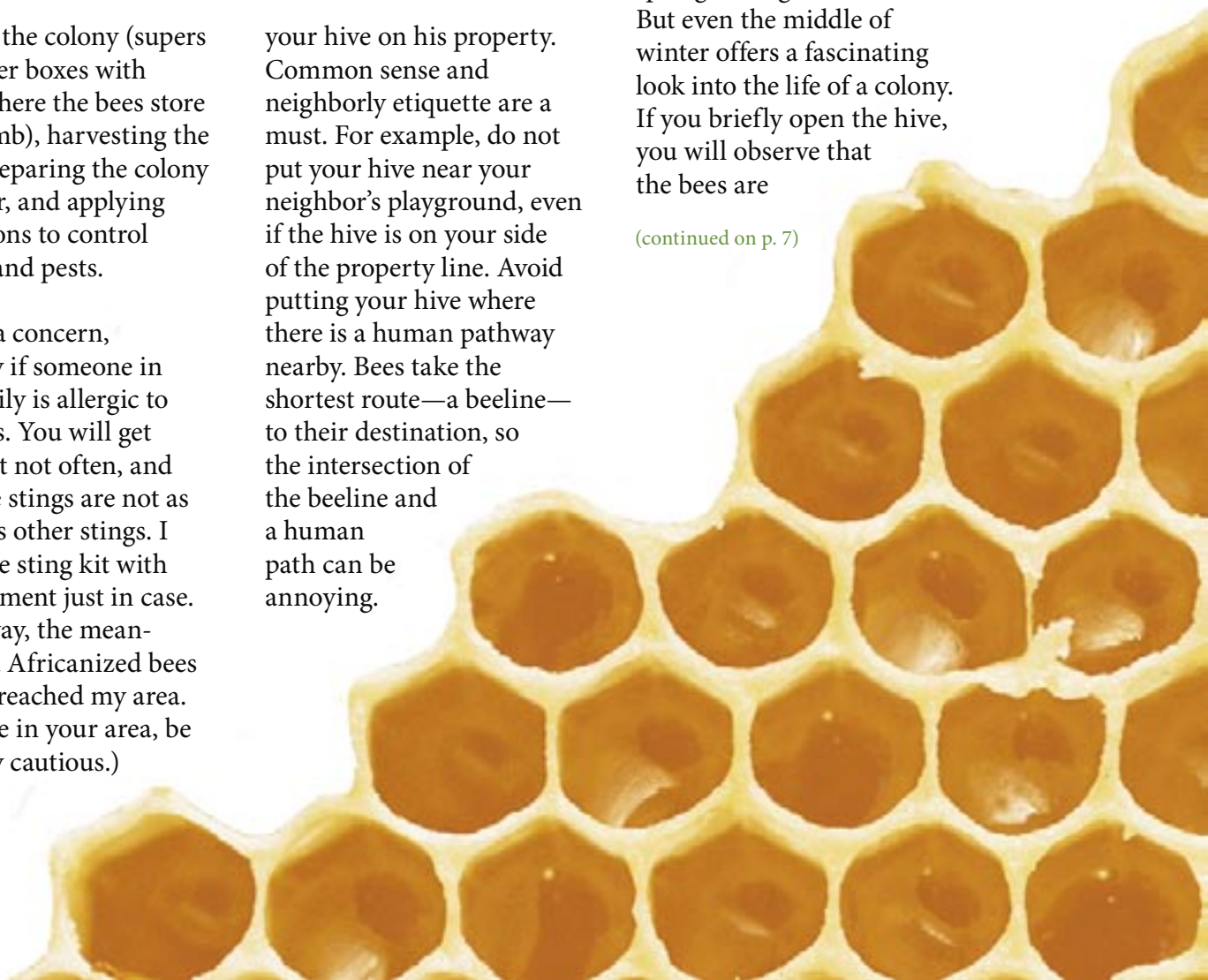
Depending on where you live, you might need to consult your neighbors before getting honeybees. Living in a residential area is not necessarily prohibitive, although you should check local regulations. You might cooperate with a rural family or farmer and keep

your hive on his property. Common sense and neighborly etiquette are a must. For example, do not put your hive near your neighbor's playground, even if the hive is on your side of the property line. Avoid putting your hive where there is a human pathway nearby. Bees take the shortest route—a beeline—to their destination, so the intersection of the beeline and a human path can be annoying.

Locate your hive so that the bees' water source is closer than your neighbor's swimming pool. Also, the area a few feet in front of a beehive is defended air space; seasoned beekeepers approach the hive from the side or rear.

Prior to starting your first colony, have your children do some background research on keeping bees. Keep a journal or other record of their findings for reference. Depending on your climate, you can do hands-on activities from spring through October. But even the middle of winter offers a fascinating look into the life of a colony. If you briefly open the hive, you will observe that the bees are

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In Memoriam:

Janice Alderfer Joss

On September 30, 2004, after a brief illness, BJU Press author Mrs. Janice Alderfer Joss passed into the presence of her Lord and Savior, Jesus Christ. Jan's life was an example to many, for God was her strength. Her goal in life was to proclaim God's power to the next generation. She passionately pursued this goal by teaching and helping to develop the language arts program for BJU Press.



At the memorial service for Mrs. Joss, Dr. Philip Smith, Chief Academic Officer of Bob Jones University, gave the following tribute. We present it in her memory and as a testimony to our readers, thousands of whom have been touched by her ministry.

Jan Joss served with us at Bob Jones University for the past thirty years. At Jan's death, I lost a classmate. Fifty years ago, Jan and I graduated together from Bob Jones University—she in elementary education and I in secondary education. After Jan graduated, she went to Pontiac, Michigan, to teach at one of the very first Christian schools in the country: Midwestern Baptist Schools, founded by Dr. Tom Malone. There she met Charles Joss, another teacher at the school. She and Charles married, reared three daughters, and taught for twenty

because she was needed. There she became the chief architect of the Elementary Reading series for the Press. She had a tremendous impact on the Handwriting series and on other parts of the language arts curriculum as well.

Jan was probably one of the best troubleshooters the Press ever had. We could send her anywhere, and if the school were adopting our curriculum, she could dispel any fears they had and make them glad they'd adopted our product.

Probably Jan's greatest joy was when we started BJU HomeSat, the video program for home schooling families.

years in Christian and public schools. They got their advanced degrees and returned in 1975 to teach in the School of Education at Bob Jones University.

The year before they came to the University, the Josses traveled the United States with their family and home schooled their daughters. Later, when Jan began traveling to home school conferences with the Press, she became endeared to the home school community. Having had that experience of home schooling her own children, she could relate to home educators well.

The Josses' return to BJU coincided with the beginning of BJU Press, but for the first few years Jan faithfully taught a number of courses in the Department of Elementary Education. However, we in the administration had to prevail upon Jan to leave the classroom and go to BJU Press

Probably Jan's greatest joy was when we started BJU HomeSat, the video program for home schooling families, in 1997. Her oldest daughter, Evanna [Walker], was asked to teach the Reading program on video. And at that time, Jan's youngest daughter, Deni [Hansen], was home schooling her children and using HomeSat. So Deni's children got to be taught by their aunt the material that had been designed by their grandmother. At the same time, Jan's middle daughter, Lenora [Billings], was using her mother's material in the classroom as she taught at Faith Baptist Christian School in Davison, Michigan.

What a tremendous contribution Jan Joss has made. I hope that her life can be a challenge to us today. By being faithful, she made an impact on thousands. She has left a legacy, an example for us to follow. 🙏



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You can
depend on us.

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clustered, quite warm (in the 90-degree range in the cluster center), and raising new bees—not hibernating.

Consult your resources for directions on harvesting honey—an exciting event! How much you get depends on several factors, but in 2003 the national average was seventy pounds per colony. In addition to the honey, you can collect beeswax, pollen, and propolis, all potentially marketable products.

Be sure to check the laws concerning the sale of honey. For the small-time honey producer there are some labeling requirements, some laws regulating the use of medications on bees, and of course business license/tax laws. If you supply honey to a retail store or sell more than 10,000 units (a unit is a container of honey regardless of size), then you may be required to provide nutritional labeling on your honey containers. Also, if you sell honey to or through a retail store, then your honey processing structure (your house) is subject to food preparation laws and inspections. Check the National Honey Board website (see sidebar) for more information.

In deference to my fellow beekeepers, I admit that this summary is very simplified. Beekeeping does take some effort and commitment, and not everything about it is intuitive. But once you get started, you can eagerly look forward to your first taste of your own homegrown honey . . . it truly is better than store-bought! 🍯

David Anderson, Ph.D., served as a science author for BJUP in the 1990s. He currently works in the IT industry and resides in Pennsylvania with his family (and approximately 200,000 bees).

Honeybee Resources

1. A good beginner's beekeeping book—Many good books are available through beekeeping supply company catalogs.

2. Membership in a local beekeepers organization—“Local” is the key word here, since these people will provide advice specific to your location. To find a local group, search the Internet or contact your state apiarist, county agricultural extension office, or 4H office for information.

3. A local beekeeper willing to show you the basics or to mentor you is an invaluable resource.

4. Beekeeping product supply catalogs—There are several companies. Some of the better known are

Dadant 888-922-1293

Mann Lake 800-880-7694

Betterbee, Inc. 800-632-3379

Brushy Mountain 800-233-7929

Draper Bee 800-233-4273

Walter T. Kelley's Bee Supply 800-233-2899

4. Internet resources—There are many, but my favorites are

MAAREC: <http://maarec.cas.psu.edu>

The National Honey Board: <http://nhb.org>

Honey.com: <http://honey.com>

5. A subscription to a beekeeping periodical—These offer helpful articles for beginners and experts alike, and the advertisements are another source of materials and information.

Bee Culture 800-289-7668

American Bee Journal 217-847-3324

6. Source of package bees or nucs—You find companies advertising bees for sale in the bee supply catalogs, periodicals, on the Internet, and through local organizations. Some companies insist that you pick up the bees at their location; others will mail them. I have ordered bees from the companies below with no problems.

York Bee 912-427-7311

R. Weaver Apiaries 936-825-2333

226878



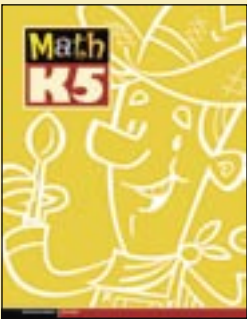
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(187005, \$47.00)