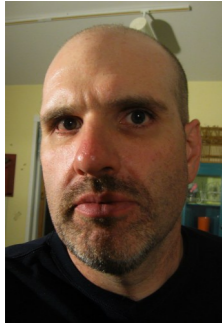


## Meet the Artist

Meet the artist who created the beautiful imagery for the sequencing activity pictures.



Erik Wilson is a painter, a potter, and art teacher who lives just outside the Adirondacks in Peru, NY. He holds a Bachelor of Fine Arts from The School of Visual Arts in New York City and a Masters in the Science of Teaching from Plattsburgh State.

Erik currently supports his art addiction through teaching art at Peru Central High School. He finds the energy and ideas of his student's

fuel his own drive to create more interesting artwork. Teaching also helps him to more thoroughly understand his own work.

Most of his paintings are inspired by the geometry of nature, theoretical physics and the Adirondack Region. His ceramic works tend to be functional tableware that is carved with Celtic-like symbols and imagery.

His work has been shown in many group and juried shows over the years; including shows at The North Country Cultural Center for the Arts, The Firehouse Gallery in Burlington, and in Saint-Jean-sur-Richelieu, Quebec.

You can contact Erik at [erkwilsonstudios@gmail.com](mailto:erkwilsonstudios@gmail.com).

## Vocabulary

**Hive**—the shelter (house) where a colony (group) of bees live

**Hive Bodies**—the boxes where bees live, store honey and raise young bees; also called a deep or shallow

**Honeycomb**—a shelter of six-sided wax cells built by honeybees in their nest to contain young bees and stores of honey

**Smoker**—a tool that gives off smoke that is used to calm bees

**Extractor**—a drum containing a rotating wire basket that is turned by hand or motor, the honeycombs are placed in the basket and as it turns the honey flung out of the combs into a tank

**Queen Bee**—the largest female bee who is the center of the hive; usually the only one to lay eggs

**Drone Bee**—male bee that usually does not collect pollen; job is to mate with the queen

**Worker Bee**—female bee specialized to collect food and maintain the hive

**House Bee**—bees that move around the hive drying the nectar as the worker bees deliver it, they clean the honey

**Nectar**—a sweet liquid given off by plants and especially by the flowers and used by bees in making honey

**Pollination**—when bees travel from plant to plant collecting pollen and leaving some at each plant to fertilize the flowers

**Pollen**—small spores from a plant that appear as a dust; necessary for plant reproduction; contains the DNA of plants; used by bees for food

**Pollen Baskets**—an area on the back legs of bees where they store pollen during pollination, also called honey sacs

**Forage**—to search for food or supplies

**Evaporate**—when the water on the surface heats up and

## About New York Agriculture in the Classroom



Mission: To foster an awareness, understanding, and appreciation of how we produce food, fiber, natural resources by engaging educators and students with agriculture and food systems.

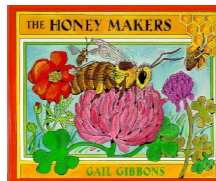
Department of Horticulture  
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## Additional Information and Resources

### Books:

**The Honey Makers** by Gail Gibbons  
In this factual and beautifully illustrated book, Gibbons educates and explains the organization of a hive, life cycle, and beekeeping practices.



**The Bee Tree** by Patricia Polacco

A young girl and her grandfather spend an afternoon following a pollen-laden bee to its far off hive, picking up curious neighbors and passers-by as they journey through the town and woods.

### Websites:

Great Pollinator Project

Resources including curricula on pollinators and pollinator conservation suitable for K-12 students:  
[greatpollinatorproject.org/education](http://greatpollinatorproject.org/education)

How Do Bees Make Honey?

A great resource for students on how bees make honey with short videos and pictures: <http://www.benefits-of-honey.com/how-do-bees-make-honey.html>

Honeybee Lessons for Grades K-3

<http://ag.arizona.edu/pubs/insects/ahb/gradek.html>

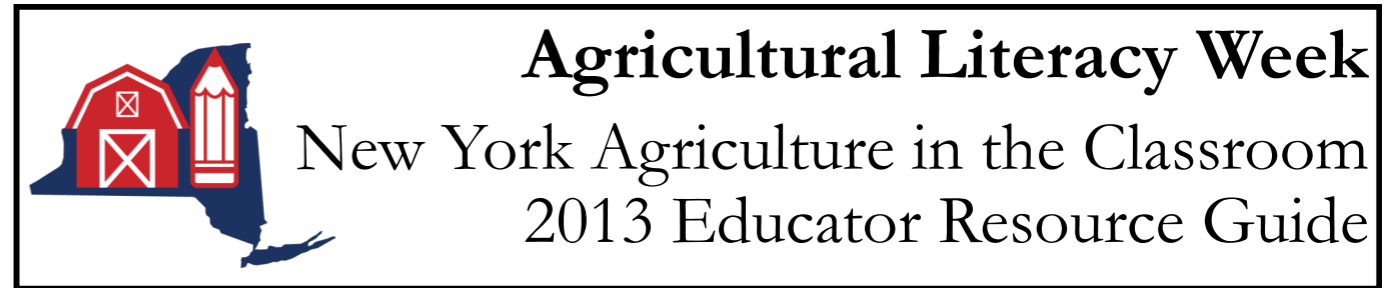
Honeybee Facts and Trivia

<http://www.ycbk.org/Honeybee%20Facts%20and%20Trivia.htm>

### Videos:

Honey Extraction and Bottling

<http://www.youtube.com/watch?v=5XO1FEZhesk>



Dear Educator,

Thank you for welcoming literacy volunteers into your classroom! One of the best ways to celebrate National Agriculture Week is to participate in Agricultural Literacy Week, joining thousands of teachers and tens of thousands of students in exploring the beauty and bounty of New York's food and fiber systems.

This year has been dubbed the year of the bee. Bees may be tiny in size, but they are mighty in their influence on agriculture. One out of every three mouthfuls of food and drink that we consume depends upon pollinators, and 75% of our crops require pollination. Bees are essential to our food system, and this is a great opportunity to teach our students about the necessity of the honeybee.

One out of every five students in your classroom will enter into an agriculture related field, as 20% of the American workforce is engaged in a form of agriculture. New York Agriculture in the Classroom strives to create the next generation of agriculturally literate students and informed consumers, and we do that through assisting teachers in implementing agricultural concepts into their curriculum.

We would like to thank our teachers who find the time and opportunities for our volunteers to come into their classrooms, the over 700 volunteers who read to over 37,000 students, and the County Coordinators who make the event possible. We would also like to offer a special thank you to Farm Credit's Northeast AgEnhancement grant for their generous support of materials and honey sticks for our students.

Sincerely,

Katie Bigness

Coordinator, New York Agriculture in the Classroom



## Spring 2013 Agriculture in the Classroom Opportunities

- Earn up to 6 hours of professional development credit by participating in a *Food, Land and People* educator training at various locations across the state. The *Food, Land and People* curriculum is aligned to NYS and the Common Core Learning Standards, there are 55 lessons developed and tested by thousands of educators.
- Involve your class in the *I Love NY Agriculture Art and Writing Contest*. Entries are due April 12, 2013. Entry forms are available on the website: [agclassroom.org/ny](http://agclassroom.org/ny)
- For the latest information on NYAITC programs and resources, join the e-newsletter mailing list or join us on the following social media outlets:



[Facebook.com/NYAITC](https://www.facebook.com/NYAITC)



[@NewYorkAITC](https://twitter.com/NewYorkAITC)

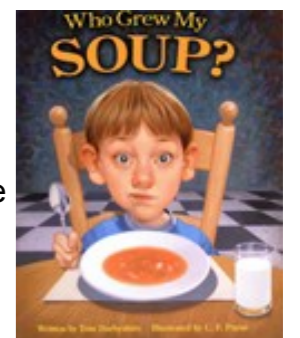


[Pinterest.com/NYAITC](https://www.pinterest.com/NYAITC)

## Mark Your Calendar



Next year's Agricultural Literacy Week will be held March 17-21, 2014. We are proud to present our 2014 book, *Who Grew My Soup?* by Tom Darbyshire and illustrated by C.F. Payne.





# Activity Plan for Volunteer Readers

## Honey Production and Pollination Sequencing Activity

### Helpful Hints:

- Read the book and the activity plan several times before you work with your classes.
- You may want to use sticky notes on the pages of the book where you have specific talking points, or where you would like to ask the students questions.



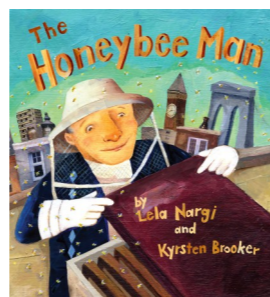
### Introduction (5 minutes):

1. Gather students together in the reading area of the classroom.
2. Introduce yourself and explain your relationship to agriculture and why agriculture is important to you.
3. Ask the students to brainstorm what they think of when they think about bees. Engage the teacher to record their answers on the whiteboard or on a large sheet of paper. Also ask the students what they think of when they think about honey.
4. Explain the plan for your time together; you will be learning about bees, how they produce honey, and why they are important to you and I.

### Reading Aloud (15 minutes):

Read either *The Beeman* by Laurie Krebs and Valeria Cis or *The Honeybee Man* by Lela Nargi and Kyrsten Brooker to the class. During the reading asking them such questions as:

- Why is the queen called the heart of the hive?
- Why does the honey producer wear a veil and special suit?
- What types of tools does a honey producer use?
- What do the house bees do differently than worker bees?
- Does the type of plant the bees collect nectar from make the honey taste different?
- Why do bees fly slowly back to the hive?



### Hands-on, Sequencing Activity (10 minutes):

The beekeeper in the book is a very important person because they ensure that their bees stay healthy, and warm and fed during the winter. Beekeepers are also necessary to almost all types agriculture as they will drive their beehives to farms, and these little insects will pollinate all of our favorite foods to make sure they grow. If we didn't have pollinators like bees, we wouldn't be able to enjoy apples, oranges, carrots, broccoli or over 100 other crops because they need pollination to produce the fruit or vegetable.

### Objectives:

1. Identify the six major steps that exist in honey production.
2. Work as a group to correctly sequence the honey production process using the provided pictures and descriptions.

### Standard Alignment:

#### Common Core, English Language Arts

- Grade 2, Key Ideas and Details, 1
- Grade 2, Craft and Structure, 4 (*The Beeman*)
- Grade 2, Integration of Knowledge and Ideas, 7
- Grade 2, Comprehension and Collaboration, 2 & 3

#### NYS Learning Standards

- Living Environment: 1.1a, 1.2a
- Science: S1.1, S1.3
- Integrated Learning: 2
- Personal Health and Fitness: 1.2



# Activity Plan & Extensions

### Procedure:

1. Choose 6 students as volunteers to stand at the front of the classroom while the remaining students stay seated.
2. Explain that in a moment you are going to hand each student at the front of the room a picture. The picture will describe something that happens in the production of honey. Hand one picture to each of the six students, as you hand them a picture read the description out loud.
3. Tell the students that these pictures are not in the correct order, and you need their help to arrange the students in order of what happens first to what happens last. Read the descriptions aloud again.
4. Ask the students what they think happens first when honey is produced, and then have the student move to the beginning of the line (or ask one of the sitting students to come up and gently move their peer to the correct spot).
5. Once the students think they have placed their peers in the correct order, start at the beginning and review their placements. If the students have placed a picture in the wrong order, ask them their reasoning for placing it there. Review the ideas from the book to jog their memory.
6. When the students are in the correct order, review the order once more.

**Helpful Hint:** Try to place a gap between the students who have been placed in line and those who are still waiting to be placed.

### Correct Order of Steps in Activity:

- |  |   |
|--|---|
| 1. The bees leave the hive.  | 4. The bees fan their wings to make the honey thick.  |
| 2. Bees buzz from flower to flower and collect pollen and sugary nectar. | 5. A beekeeper uses a knife, a machine, and a storage tank to gather honey from the hives.                        |
| 3. The bees return to the hive and drop the honey into the honeycomb.    | 6. The beekeeper pours the honey into bottles to sell, and people enjoy the honey on all of their favorite foods. |

For extensions on the steps of honey production and pollination: [agclassroom.org/ny/programs/literacy](http://agclassroom.org/ny/programs/literacy)

### Conclusion:

- Present the book to the teacher and students as a donation to the classroom/school library.
- Ask the students one thing that they learned about bees, pollination, honey production or agriculture.

### Learning Extensions:

#### Honey Sticks: A Naturally Sweet Treat

Each classroom will receive honey sticks in the following flavors: Blueberry Blossom, Clover, Star Thistle, Wildflower

- *Learning Opportunity 1:* Provide each student with their own honey stick to try (pinch one end while biting down on the other).
- *Learning Opportunity 2:* Divide the students into smaller groups of 4 or 5. Empty the contents of the flavors of honey on paper plates for the groups. Allow them to dip bread, crackers, or apple slices into the different flavors of honey.

### Questions for Discussion:

1. What did the honey taste/smell/look/feel like?
2. What was your favorite flavor? Why?
3. Does honey taste like any other foods you've ever tried?



### Are you looking for more lessons on pollination and honey production?

NYAITC has a section on their website full of additional lesson plans and activities aligned to NYS and Common Core Learning Standards. Lessons such as Buzzy, Buzzy Bee teach students about pollination with a fun, hands-on activity. Find this lesson and more at:

[www.agclassroom.org/ny/programs/literacy](http://www.agclassroom.org/ny/programs/literacy)

