



The Book Planter



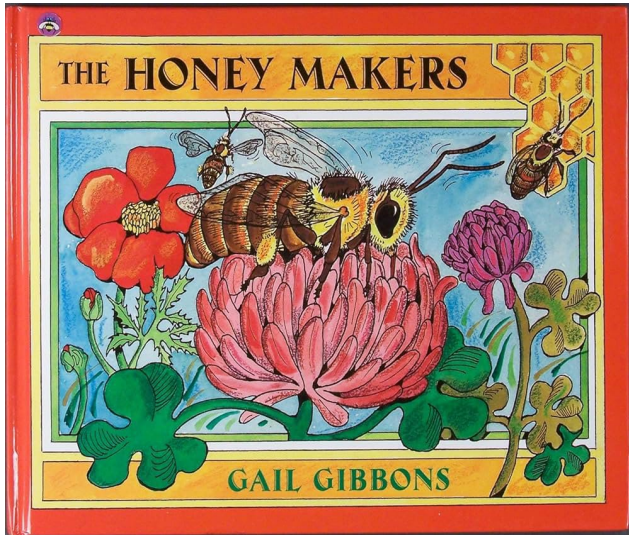
Ag in the Classroom

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The Honey Makers

Written & Illustrated by: Gail Gibbons



Ever wondered how a jar of honey is made? Thousands of bees visit more than one million flowers to gather the nectar that goes into a one-pound jar of honey. Every page in this picture book reveals how these remarkable insects work together to create this amazing food. With detailed illustrations and diagrams, Gail Gibbons offers a classroom-ready nonfiction picture book that makes complex scientific concepts understandable and entertaining for young readers.

Vocabulary

Beebread: a combination of pollen and honey.

Beemilk: a milky syrup that is full of nutrition made from glands inside worker bees.

Brood cells: the cells where the queen lays her eggs.

Colony: a group of bees

Drone bees: the only male bees in the hive, responsible for mating with the queen.

Foraging: when worker bees leave the hive to collect nectar from flowers.

Honeycomb: a structure of wax cells inside a beehive.

Pollination: the process of moving pollen from flower to flower—from the stamen to the stigma of the same kind of plant.

Proboscis: the long mouth part on worker bees that allow them to collect nectar from flowers.

Queen bee: the largest honeybee in the hive, responsible for laying eggs.

Royal jelly: what the queen bee eats, more nutritious than beemilk

Worker bees: female bees who carry out the work of the colony.

Fun Facts: ¹

- Honeybees have been on earth for about 80 million years.
- The honeybee's scientific name is *Apis mellifera*, which means "honey bearer."
- Honeybees are responsible for pollinating many NC crops, including strawberries, watermelons, blueberries and cucumbers.

Before Reading

1. Who do you think the honey makers might be?
2. Do you like honey?

While Reading

1. Ask students to listen for vocabulary of the day. When students hear any of the vocabulary during the reading, ask them to clap twice.

After Reading

1. What is the main idea of this book? How do you know?
2. How do you think the author of this book feels about honeybees? Do you think she thinks they are important or not? What is your evidence?
3. Let's look at this picture of the honeybee with the parts of the body labeled. Do you know what this text feature is called in a book (*diagram*)? Why did the author add this part in the book? (*The author wants the reader to know the body parts of the honeybee and where to locate them on the bee.*)
 - a. Can we find another example of a diagram in the book?
4. Why do you think the bear is coming close to the beehive? What does it want? What will the bees do if the bear does not leave? (*The bear is coming to the hive to steal and eat the honey that the bees make. Bears, skunks, and raccoons are well-known predators of the honeybee. If the bear does not leave, the bees will sting it to protect their hive.*)
5. How do bees get the moisture or water out of the nectar? (*By passing it from tongue to tongue, the bees take the moisture out. The house bees also fan their wings to evaporate the moisture from the honey.*)
6. Why do bees dance? (*Bees dance to communicate to the other foraging bees where the food source or flowers are located in relation to the hive.*)
7. What are some of the containers that humans have used for bee hives? (*Logs, clay pots, upside-down baskets, and hanging movable-frame beehives*)
8. Let's look at the different jobs that worker bees have throughout their lives. The author says, "first she is a house bee, cleaning and polishing the cells." "After ten days of being a nurse bee she becomes a wax-making bee." "About a week later the wax-making bee becomes a guard bee." Why does the author use words like first, after, about a week later? What is she trying to tell the reader? (*These are transition words that tell the reader that there is a relationship between the steps in this procedure. That means that she is telling us things happen in an order on purpose and the steps happen basically the same way for every worker bee.*)

Writing/Journal Prompts

- The author tells us that honeybees have a crop or honey stomach for storing the nectar that they bring back to the hive. It is separate from her stomach that digests her food—it is more like a storage container. If you had a crop, what would you store in it to take with you? Explain your answer.

- Choose one of the months from A Beekeeper’s Yearbook at the end of the book. Pretend you are a bee in the hive during that month and write about how you would feel. What would you be doing? Use descriptive words like tired, excited, nervous, busy, dangerous, etc. What might you be looking forward to doing next month? What is happening with the other bees?

Activity 1: What’s My Job?¹

1. This assessment tool will help teachers determine if the students understand the different jobs the worker bee has throughout her life. The book should be used as a resource for the students to be successful with this follow-up. The teacher should continue to use transition/sequence words: first, next, then, etc. to push the concept of sequence in the text.
2. The [video, How Do Honeybees Get Their Jobs](#), provides more information about how the hormones tell the bee’s genetic makeup what job to do next and when to do it. This video also addresses how the queen bee determines the sex of the egg that she lays depending on what the hive needs most.
3. Give each student copies of the Bee Jobs Cards, and What’s My Job worksheet. Students should cut out the pictures of the Bee Jobs, and paste onto the What’s My Job worksheet. Then have students draw in the actions or background for each square to show what each bee is doing. Have students label their pictures where appropriate.

Activity 2: Making Beeswax Candles¹

This is a great activity for students to make something to share with someone else, possible for the holidays, Mother’s Day, Father’s Day, or simply to give someone they care for. Remind the students they should never have a lit candle without an adult present.

Materials:

- [Make Your Own Beeswax Candle Kit](#) – makes 20 candles

Instructions:

1. 1. Cover the work area with butcher block paper or paper bags for easy cleanup. The sheets of wax can stick to surfaces as the students are working with them.
2. Cut each sheet of the beeswax from the kit in half so that you have two sheets that are 8 inches by 8 and 1/8 inches. Each student will get one of the halves for rolling their candle. (the recommended kit has 10 sheets, when cut in half will provide 20 sheets for a total of 20 candles)
3. Cut the cotton wicks 9 inches long for each candle.
4. Demonstrate for the students that you will need to lay the wick at the right edge of the piece of beeswax so that the bottom of the wick meets the bottom of the sheet. The top



will have an inch of wick that is longer and will hang out. This will be the part that is lit when completed.

5. Press the wick into the wax with your fingertips before beginning to roll.
6. Demonstrate for the students how to roll the beeswax, keeping it tight and even as you roll the wax around the wick. You can press gently on the roll as you work but be careful not to press too hard.
7. If the wax is hard to roll at first, a low amount of heat from a hairdryer will help warm the wax-up. Careful not to melt it!

Sources

1. https://www.thebeecause.org/wp-content/uploads/2021/01/bee_cause_book_club_the_honey_makers.pdf

K-5 Subject Areas: English Language Arts, Social Studies and Science

English Language Arts (Reading and Writing)

- RI.K.1 With prompting and support, ask and answer questions about key details in a text.
- RI.K.2 With prompting and support, identify the main topic and retell key details of a text.
- RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
- RI.1.1 Ask and answer questions about key details in a text.
- RI.1.2 Identify the main topic and retell key details of a text.
- RI.1.3 Describe the connection between two individuals, events, ideas, or pieces of information in a text.
- RI.1.4 Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- RI.1.5 Know and use various text features to locate key facts or information in a text.
- RI.1.6 Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
- RI.1.7 Use the illustrations and details in a text to describe its key ideas.
- RI.2.4 Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- RI.2.5 Know and use various text features to locate key facts or information in a text efficiently.
- RL.2.7 Explain how specific images contribute to and clarify a text.
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
- RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- RI.3.5 Use text features and search tools to locate information relevant to a given topic efficiently.
- RI.3.7 Use information gained from illustrations and the words in a text to demonstrate understanding of the text.
- RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI.4.5 Describe the overall structure of events, ideas, concepts, or information in a text or part of a text.
- RI.4.7 Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears.
- W.4.5 Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

Social Studies

- K.G.2 Understand the interaction between humans and the environment.

Science

- LS.K.1 Understand the characteristics of living organisms and nonliving things.
- LS.K.2 Understand characteristics of organisms that make them alike and different.
- LS.1.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.

- LS.2.1 Understand animal life cycles.
- LS.2.2 Understand that organisms differ from or are similar to their parents and other offspring based on the characteristics of the organism.
- LS.4.1 Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.
- LS.5.3 Understand some characteristics of an organism are inherited and other characteristics are acquired.

WORKER BEE JOBS



House Bee



Guard Bee



Forager Bee



Nurse Bee



Wax Bee

WHAT'S MY JOB? Name: _____

Directions: Read each of the bee's jobs. Cut out your worker bee jobs (job title and bee). Glue the bees and job titles in the correct **What's My Job?** box. Draw your bee doing her job.

I clean and polish the cells.

I feed the larva beemilk and beebread. I seal the cell with wax for the pupa.

I make wax from my body to make new or fix old cells.

I work outside of the hive and I protect it.

I zip from flower to flower to get the nectar for making honey.

