

# A Time to Dance

## Introduction

In the book *In the Trees, Honey Bees* by Lori Mortensen, students are introduced to the language of bees. For example, when scout bees locate places rich with flowers they return to the hive and perform a waggle dance to tell others where to find them. In this activity, students make up their own bee dance.

## Materials Needed

- ◆ Space for students to move and dance
- ◆ A copy of the book *In the Trees, Honey Bees* by Lori Mortensen

## Key Concepts

- ◆ Bees depend on the flowers in their environment to survive.
- ◆ Bees work together for the mutual benefit of the colony.

For standards correlation please see our website.

## Procedure

1. After reading the book, *In the Trees, Honey Bees*, discuss the ways that the bees communicated.
2. Ask students to make up their own bee dance.
3. Invite students to think about what they'd like to communicate to others through their dance.
4. Give each student a chance to perform.
5. After each dance, have the other students guess what the dancer was trying to communicate.
6. Have the dancer reveal the correct answers.

## Nature Connections

- ◆ In what other ways do bees communicate? Invite students to describe the type of communication and the purpose.
- ◆ Play "Find the Flower." Select two students. One waits outside while the other hides a flower in the room. When the other student returns, the class helps the student find the flower by buzzing louder as the student gets closer.

## Additional Resources

**The National Honey Bee Board**  
<http://www.honey.com/nhb/downloads>

**Tales from the Hive**  
<http://www.pbs.org/wgbh/nova/bees>

**National Geographic Creature Features**  
<http://kids.nationalgeographic.com/kids/animals/creaturefeature/honeybees>





# Home, Sweet Home

## Introduction

In the book *In the Trees, Honey Bees* the illustrator, Cris Arbo, gives the reader a close-up view of the honey bee hive. Without the hive, the colony would not survive. In this activity students will create their own honey bee hive.

## Materials Needed

- ◆ Paper
- ◆ Crayons
- ◆ Scissors
- ◆ Tape

## Key Concepts

- ◆ Organisms' patterns of behavior relate directly to the environment.
- ◆ The environment must supply the needs of organisms.

For standards correlation please see our website.

## Procedure

1. Give each student two pieces of paper, one brown, one yellow.
2. Lay the brown piece of paper on top of the yellow one so they match.
3. Tape the top edges of the paper together to create a hinge.
4. Have students cut a hole in the brown piece of paper like a hole in a tree.
5. On the bottom piece of paper, have students draw the inside of a honey bee home.
6. When students are finished, have each share their drawings.
7. Have students discuss their drawings. How many parts are there? Are some areas missing? Could the bees survive in this home? Why or why not?

## Nature Connections

- ◆ Invite students to look at the tree pictures in *In the Trees, Honey Bees*. What other creatures live in trees? What parts of the tree does it live in and why?
- ◆ Ask students to compare their homes with the honey bee hive. How is it the same? How is it different?

## Additional Resources

### Honey Bee Terminology:

**Colonies** - Honey bees live in large family groups called **colonies**.

**Hives** - Beekeepers wooden boxes for the bee colony

**Comb** - The central structure of the colony is the wax **comb**

**Beeswax** - The comb is made of **beeswax**, a substance secreted from worker bee abdominal glands.

**Swarming** - Honey bees move from site to site by **swarming**, where a portion of the bees leave the colony with the old queen to take up residence in a new location.





# Busy as a Bee

## Introduction

A honey bee colony may have up to 50,000 bees. Each of them has duties to perform for the survival of the colony. Invite students to identify and draw four bee tasks featured in *In the Trees, Honey Bees*. By selecting and depicting these different chores, students will understand important characteristics of honey bees, their life cycle, and how they depend and interact with their environment.

## Materials Needed

- ◆ Paper
- ◆ Pencil, crayons, and markers
- ◆ Other art supplies such as glitter and glue.

## Key Concepts

- ◆ Honey bees are adapted to perform different tasks in the hive as they mature.
- ◆ Honey bee colonies depend on their environment for survival.
- ◆ Honey bees survive because of group cooperation.

For standards correlation please see our website.

## Procedure

1. Pass out paper and art supplies.
2. Have students fold their papers in half, then half again.
3. When the paper is unfolded, there will be four sections, all the same size.
4. Use each section to draw a different bee task.
5. When finished, students can hold up their pictures and others can guess which task they've drawn. How many different types of tasks were shown overall? Which tasks are performed in the hive? Which tasks are performed outside the hive?

## Nature Connections

- ◆ Cut the pictures from this activity into four parts. Invite students to combine their pictures and put them in order from the first chore, feeding the larvae to the last chore, as a field bee gathering nectar and pollen.
- ◆ Go outside. Look and listen for bees. Where are they? What are they doing? Do they have "baskets" of pollen on their legs?

## Additional Resources

There are many different types of bees around the world. Encourage students to find out more information with the list below:

- ◆ Honey Bees
- ◆ Bumble Bees
- ◆ Ground Bees
- ◆ Digger Bees
- ◆ Carpenter Bees
- ◆ Cuckoo Bees
- ◆ Leafcutter Bees
- ◆ Wasps
- ◆ Hornets





# Beeswax Candle

## Introduction

In the book, *In the Trees, Honey Bees* by Lori Mortensen, readers can see how bees make honeycomb out of wax. The bees use the wax honeycomb to raise brood, make honey, and store food. In this activity, students will study honeycomb structure by making candles out of beeswax.

## Materials Needed

- ◆ Beeswax sheets
- ◆ Wicks
- ◆ Scissors

## Key Concepts

- ◆ Organisms have different abilities for different functions.
- ◆ Organisms can cause changes.

For standards correlation please see our website.

## Procedure

1. Purchase beeswax sheets from a bee supply store locally or online. Each sheet is approximately 8" x 16". The beeswax sheets come in a variety of colors. One sheet makes one candle.
2. Buy wicks from craft supply store or bee supply stores that carry them.
3. Lay sheet flat on table. Decide if you want to make a tall, thin candle, or a short, wide candle.
4. Lay wick along one edge of wax, matching end with corner of wax.
5. Cut the other end of wick, leaving about 1" extra from edge of wax.
6. Slowly warming the wax with your fingers, gently but tightly, roll wax around the wick.
7. Continue rolling until the candle is complete.

## Nature Connections

- ◆ Honey bees use wax for many important reasons. People do too. Invite students to list as many things as they can think of that are made of wax. (Ideas include cosmetics, furniture polish, car wax, crayons and artificial flowers.)
- ◆ Invite students to use extra wax to mold other creatures or things found in the book. Invite student to share what they made and why.

## Additional Resources

### How Do Bees Make Honey?

<http://www.health-benefits-of-honey.com/howdobeesmakehoney.html>

### Making Honeycomb

[http://www.for-children.com/w\\_creaures02.html](http://www.for-children.com/w_creaures02.html)

### Honeycomb Structure

<http://www.gpnc.org/honeybee.htm#COMB>





# Draw a Card

## Introduction

In the book, *In the Trees, Honey Bees* by Lori Mortensen, the reader follows members of the colony along as they gather important items from their environment to survive. In this activity, students will play a fast-paced card game based on these items.

## Materials Needed

- ◆ Card stock
- ◆ Colored markers
- ◆ Scissors

## Key Concepts

- ◆ Honey bees depend on their environment for survival.
- ◆ Different forms of life have different needs.

For standards correlation please see our website.

## Procedure

1. Cut card stock into 16 cards, each measuring 2-1/2" x 3-1/2".
2. Divide cards into four piles of four cards.
3. On the first stack, draw a picture of a puddle of water on the top of each card. Write "Water."
4. On the next stack, draw a tree on top of each card. Write "Sap."
5. On the third stack, draw a flower on the top of each card. Write, "Pollen."
6. On the last stack, draw a drop of nectar on the top of each card. Write "Nectar."
7. Make one set of 16 cards for every group of four people.
8. To play: Shuffle the cards. Deal all the cards out face down to four people in a circle around a table.
9. The object is to collect all four cards of the same type. Whoever collects all four cards first, wins.
10. Players pick up their cards. Everyone passes one card to their left at the same time. Pass until there's a winner.

## Nature Connections

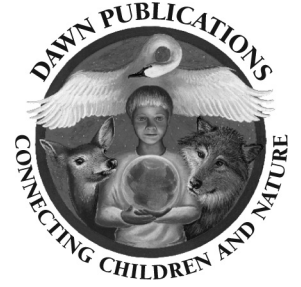
- ◆ After the card game, open *In the Trees, Honey Bees*. Look for illustrations that show the bees gathering or using the items featured on the cards. Other creatures are gathering things as well. Who are they and what are they gathering?
- ◆ Go outside and look around. Ask students to imagine that they are the scout bee. Do you see good places to collect the four important items? What and where are they?

## Additional Resources

Ask students if they can find these food sources for honey bees in your backyard or neighborhood? What other types of flowers or trees do the honey bees like?

- ◆ Flowering Dogwood Tree
- ◆ Dandelions
- ◆ Milkweed
- ◆ Red Clover
- ◆ Honeysuckle
- ◆ Red Maple Tree
- ◆ Poplar Tree





# Flower Power

## Introduction

Honey bees visit millions of flowers to collect nectar and pollen. Invite students to make bookmarks that feature different kinds of flowers featured in the book *In the Trees, Honey Bees*.

## Materials Needed

- ◆ Paper
- ◆ Crayons
- ◆ Markers
- ◆ Scissors

## Key Concepts

- ◆ Plants are the base of an ecosystem.
- ◆ All animals depend on plants.
- ◆ Organisms' patterns of behavior relate directly to the environment.

For standards correlation please see our website.

## Procedure

1. Cut paper into 2" wide strips.
2. Ask students to draw the flowers featured in the book *In the Trees, Honey Bees* on both sides of the paper. One side could be the flower during the day. The other side could be the same flower at night.
3. Invite students to talk about their pictures. What kind of flowers did they select? Did they draw a field flower, or one featured in the garden? (What kind of flower is featured in the garden?)

## Nature Connections

- ◆ Go on a nature walk and study the flowers you see. What kind of flowers are they? Are there bees on the flowers?
- ◆ Ask students to write the alphabet from A to Z. Challenge students to write down a type of flower for each letter. A, for example could be apple blossom, B could be buttercups, etc.

## Additional Resources

### Honey Trivia

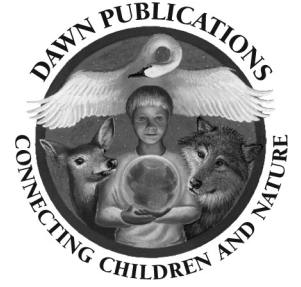
1. How many flowers must honey bees tap to make one pound of honey?
2. How many flowers does a honey bee have to visit to gather a load of pollen?
3. How long have bees been producing honey from flowering plants?
4. How fast does a honey bee fly?
5. When do Honey Bees sleep?

### Answers:

1. Two million
2. 1500 flowers
3. 10-20 million years
4. About 15 miles per hour
5. Honey bees do not sleep. They take mini-naps. They work all day in the field and at night they work in the hives building new combs and repairing old combs.







# Flying High

## Introduction

Thousands of bees come and go from the bee hive each day as depicted in the book, *In the Trees, Honey Bees*. Invite students to make a "bee" mobile that highlights this activity. As they do, students will be reminded how individual behaviors affect the survival of the entire colony.

## Materials Needed

- ◆ Wire hangers
- ◆ String, scissors, hole punch
- ◆ Paper
- ◆ Pencils, markers, crayons

## Key Concepts

- ◆ The adaptation of flight helps bees survive in their environment.
- ◆ The colony's survival depends on the collective efforts of each member of the colony.

For standards correlation please see our website.

## Procedure

1. Pass out paper and drawing supplies.
2. Have students draw five bees.
3. Cut bees out, leaving space for a hole at the top. Punch a hole at the top of each bee.
4. Provide students with five strings of different lengths.
5. Create the mobile by tying one end of the string to the hanger and the other to the bee until all five bees are hanging from the hanger as if they were flying.

## Nature Connections

- ◆ Bees use their wings for other purposes besides flying. After reading *In the Trees, Honey Bees* have students explain each of the different uses and their purposes.
- ◆ Create a maze in the shape of a honeycomb cell. Have the student help a bee get back to its hive.

## Additional Resources

### Young Beekeeper Program

<http://honeybeepreservation.org/activities/youngbeekeeperprogram/>

### Bee aMazed

<http://www.longwoodgardens.org/BeeAmazed.html>

### Haagen-Dazs - Help the Honey Bees

<http://www.helpthehoneybees.com/>

### Bee Buddies Program

<http://honeybeepreservation.org/activities/kidsandbees/>





# Sunrise, Sunset

## Introduction

In the book, *In the Trees, Honey Bees* by Lori Mortensen, readers follow the activities of a honey bee colony from morning until night. Invite students to create a special placemat. One side will show what bees do in the morning. The other side will show what they do at night. Students can use the morning side for breakfast, then use the backside at night for dinner.

## Materials Needed

- ◆ Paper
- ◆ Crayons and Markers
- ◆ Scissors
- ◆ Clear plastic shelf paper
- ◆ Double stick tape

## Key Concepts

- ◆ All organisms have different needs.
- ◆ The environment must supply the needs of organisms.

For standards correlation please see our website.

## Procedure

1. After reading *In the Trees, Honey Bees* have students think about what the bees do in the morning and what they do at night.
2. Ask students to create two pictures. One picture will show what bees do early in the morning. The other picture will show what bees do at night.
3. When the pictures are finished, put pictures back to back. Attach with a little double stick tape in the corners.
4. Measure and cut enough plastic shelf paper to cover the front and back.
5. Peel away paper backing of plastic and lay picture carefully down on plastic sheet making sure there are no wrinkles.
6. Fold remaining plastic sheet over the top of pictures so the pictures are encased in plastic. Lay plastic over carefully so there are no wrinkles.
7. Smooth edges, then cut around pictures leaving 1/4" of plastic around the perimeter.

## Nature Connections

- ◆ Invite students to think about what happens in the day vs. the night. What creatures might a honey bee encounter during the day? What creatures might they encounter at night?
- ◆ Go outside and look around. Ask students to imagine that they are the scout bee. Do you see good places to collect the four important items? What and where are they?

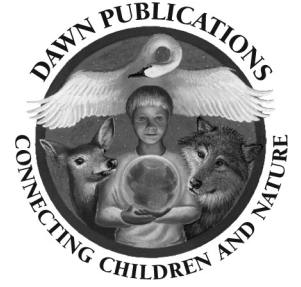
## Additional Resources

**Predators that honey bees encounter during the day and night:**

- ◆ Yellow Jackets
- ◆ Frogs & Toads
- ◆ Largemouth Bass
- ◆ Hummingbirds
- ◆ Spiders
- ◆ Mites







# Sweet Treat

## Introduction

Field bees collect nectar from two million flowers to make one pound of honey. In the back of *In the Trees, Honey Bees* author Lori Mortensen shares important information about how bees make honey and how beekeepers harvest it. Invite students to make this simple yet delicious treat - honey butter.

## Materials Needed

- ◆ Butter
- ◆ Honey
- ◆ Bread
- ◆ Butter knife

## Key Concepts

- ◆ All animals depend on plants.
- ◆ Organisms' patterns of behavior relate directly to the environment.
- ◆ Humans depend on environments.

For standards correlation please see our website.

## Procedure

1. Combine one stick of butter with 1/4 cup of honey in a bowl.
2. Mix well until blended.
3. Spread mixture on bread.
4. Cut slices into halves or quarters.
5. Pass out to students.

## Nature Connections

- ◆ Honey butter is just one type of food that's made with honey. Invite students to think of other kinds of food that may be made with honey.
- ◆ Ask students to write the alphabet from A to Z. Challenge students to write down a type of food that could be made with honey for each letter. A, for example could be Apple Pie, B could be butter, etc.

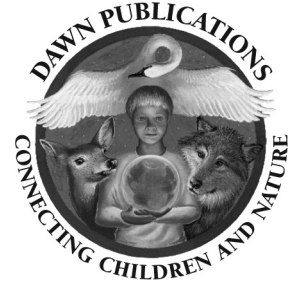
## Additional Resources

### How to make your own Honeycomb:

- 6tbs white sugar
- 2tbs honey
- 2tsp water
- 1tsp baking soda

Combine sugar, honey and water in a saucepan. Stir and bring to a boil until sugar dissolves. Remove pan from heat and add baking soda. When cool, break into pieces and enjoy!





# Bee Tales

## Introduction

Field bees forage for flowers up to three miles away from their hive. Invite students to write a story about a bee's adventure leaving and returning to the hive like the bees featured in the book, *In the Trees, Honey Bees* by Lori Mortensen.

## Materials Needed

- ◆ Paper
- ◆ Pencil, crayons, and markers
- ◆ Fasteners
- ◆ Hole punch

## Key Concepts

- ◆ Bees work together for the mutual benefit of the colony.
- ◆ Bees are dependent on their environment for survival.

For standards correlation please see our website.

## Procedure

1. Hand out two pieces of paper and a pencil to each student.
2. Tell students to think about a bee's journey as it leave the hive in search of flowers. What does it do? What things or creatures might it meet? What kinds of things could happen along the way?
3. Put two papers together and fold in half like a book. The top is the cover. Inside, the student will write the story and draw pictures to accompany the story.
4. Secure the book by punching two holes near the fold and inserting a fastener in each hole. Have students share their stories with each other.

## Nature Connections

- ◆ Have students draw a picture of a creature that might visit a bee hive. Why would it come? What might happen?
- ◆ What other kinds of creatures are shown in the book, *In the Trees, Honey Bees*? How many different creatures are there?
- ◆ Have students pretend that they are bees. Give one student an objective, such as move everyone to a certain spot in the classroom. Can the students complete the activity without using words - only bee sounds and wing movements?

## Additional Resources

### Backyard Beekeepers

<http://www.backyardbeekeepers.com/facts.html>

### California State Beekeeper's Association

<http://www.californiastatebeekeepers.com/>

### York County Beekeepers' Association

<http://www.ycbk.org/>

### American Beekeeping Federation

<http://www.abfnet.org/>

