



I SPEAK FOR THE BEES

STUDENT WORKBOOK

Student Name:



Get ready to dive into the world of honey bees! You will learn about the history of honey bees, their significant contributions to the world, and their unique relationship with humans. This project will be completed in four parts listed below.

- 1. Part 1: Literature Circle for Piotr Socha's *Bees: A Honeyed History***
A text by Wojciech Grajkowski with translation by Anges Monod-Gayraud.
- 2. Part 2: Film Circle for *Dance of the Honey Bee***
A short film about honey bees by Peter Nelson.
- 3. Part 3: Virtual Field Trip - Spring Hive Inspection with *The Bee Cause + Queen and Comb***
An exploration of best practices in beekeeping as a Virtual Field Trip.
- 4. Part 4: *I Speak for The Bees!* Presentation**
The final project -- YOU get to speak for the bees!

Reference Tool: The Literature Circle Roles

- 1. Summarizer:** Your job is to prepare a brief summary of today's reading. Your group discussion will start with your 1-2 minute statement that covers the key points. You will start the lesson each week with your summary.
- 2. Connector:** Your job is to find one connection between the book and the world outside. This means you can connect the reading to:
 - Your own life
 - Happenings at school or in the community
 - Similar events at other times and places
 - Stories in the news
 - Other people or problems
 - Other books or stories
 - Something you've seen or experienced with bees
- 3. Question Asker:** Your job is to write down one question for your group to talk about. It could be a question:
 - You had while you were reading

- About a historical event or person
- About the honey bee, a predator, or honey production and uses
- About a word
- You'd want to ask the author

4. Fascinating Fact Finder: Your job is to pick one fact from the book that you want to read aloud and talk about in your group. This could be:

- Something you were surprised to learn about
- Something you want to know more about
- Something that seems impossible

5. Artful Artist: Your job is to illustrate one thing from the book that you liked:

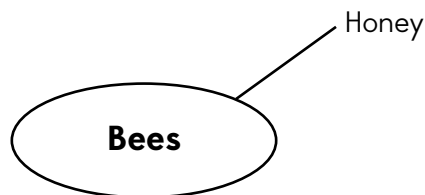
- An insect, animal, person, flower, job, activity related to bees
- Something you didn't know about bees, beekeeping, history, honey, etc.
- A surprising fact
- Something you want to know more about

Draw on a piece of printer paper or poster board. When your group meets, don't tell them about the art, let them talk about it first, then tell them about it.

Preparing for the Text Activity

Welcome to the **Bees: A Honeyed History** Literature Circle. This larger-than-life non-fiction book is one part science, one part historical timeline, and all parts fascinating! You will learn about the important role that honey bees have played in the earth's evolving ecosystem and ancient cultures. You will explore how bees came to be, the Greek Gods' obsession with honey, the Giant Honey Bees of Asia, the Honeyguide Birds journey with the Hadza people of Africa, and so much more!

Let's start with what you already know about bees using a Word Map. Draw as many lines and add as many words or phrases that tell the group what you know. The group will discuss this information at the next Literature Circle meeting.



How the Bee Came to Be

Pages 4-5

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

pollinate _____

nectar _____

pollen _____

The Buzz: Complete the following tasks.

What evidence do scientists have to prove that honey bees were alive when dinosaurs were alive?

How did honey bees evolve from eating insects to eating nectar and pollen?

Read [Mutualism Facts for Kids](https://kids.kiddle.co/Mutualism) (<https://kids.kiddle.co/Mutualism>) from Kiddle and explain in your own words how bees and flowers have a mutualistic relationship.

Beyond the Book: Watch this video and answer the question below. [Which Came First: Flowers or Bees?](https://www.youtube.com/watch?v=iyvXZcWUbIO) (<https://www.youtube.com/watch?v=iyvXZcWUbIO>)

Which do you think came first - flowers or bees? What is your evidence?

Write a sentence or two about something you wonder about after reading this portion of the book or watching the video. Each section of this Student Workbook will allow you to create a short **I Wonder Journal**.

<p>I wonder.... _____</p> <hr/> <hr/>
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Anatomy of the Honey Bee

Pages 6-7

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

ultraviolet _____

mandible _____

venom _____

The Buzz: Complete the following tasks.

How do bees carry the pollen back to the hive? Give details in your answer.

Label the following parts on the honey bee, draw a line to each part: head, thorax, abdomen, wings, stinger, eyes, mouthparts, antennae, pollen baskets



Read the section called Description from [Bee Facts for Kids](https://kids.kiddle.co/Bee) (<https://kids.kiddle.co/Bee>) from Kiddle. Record the details of two facts you learned and share with the group.

Beyond the Book: Watch this video and answer the question below. [How Bees Can See the Invisible](https://www.youtube.com/watch?v=N1TUDFCOwjY&t=82s) (<https://www.youtube.com/watch?v=N1TUDFCOwjY&t=82s>)

Describe how a bee sees the color of a flower.

<p>I wonder.... _____</p> <hr/> <hr/>
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Busy Bees

Pages 8-9

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

larva _____

forage _____

The Buzz: Complete the following tasks.

Create a comic strip to show the lifecycle of the honey bee. Use pictures and words to describe what is happening at each stage.

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Beyond the Book: Watch this video and answer the question below. [Amazing Time-Lapse: Bees Hatch Before Your Eyes](https://www.youtube.com/watch?v=f6mJ7e5YmnE) (<https://www.youtube.com/watch?v=f6mJ7e5YmnE>)

What did you see the baby bees doing right before they came out of their cells? Why do you think they were doing that?

I wonder.... _____

Queen of the Hive

Pages 10-11

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

pheromone _____

drone _____

The Buzz: Complete the following tasks.

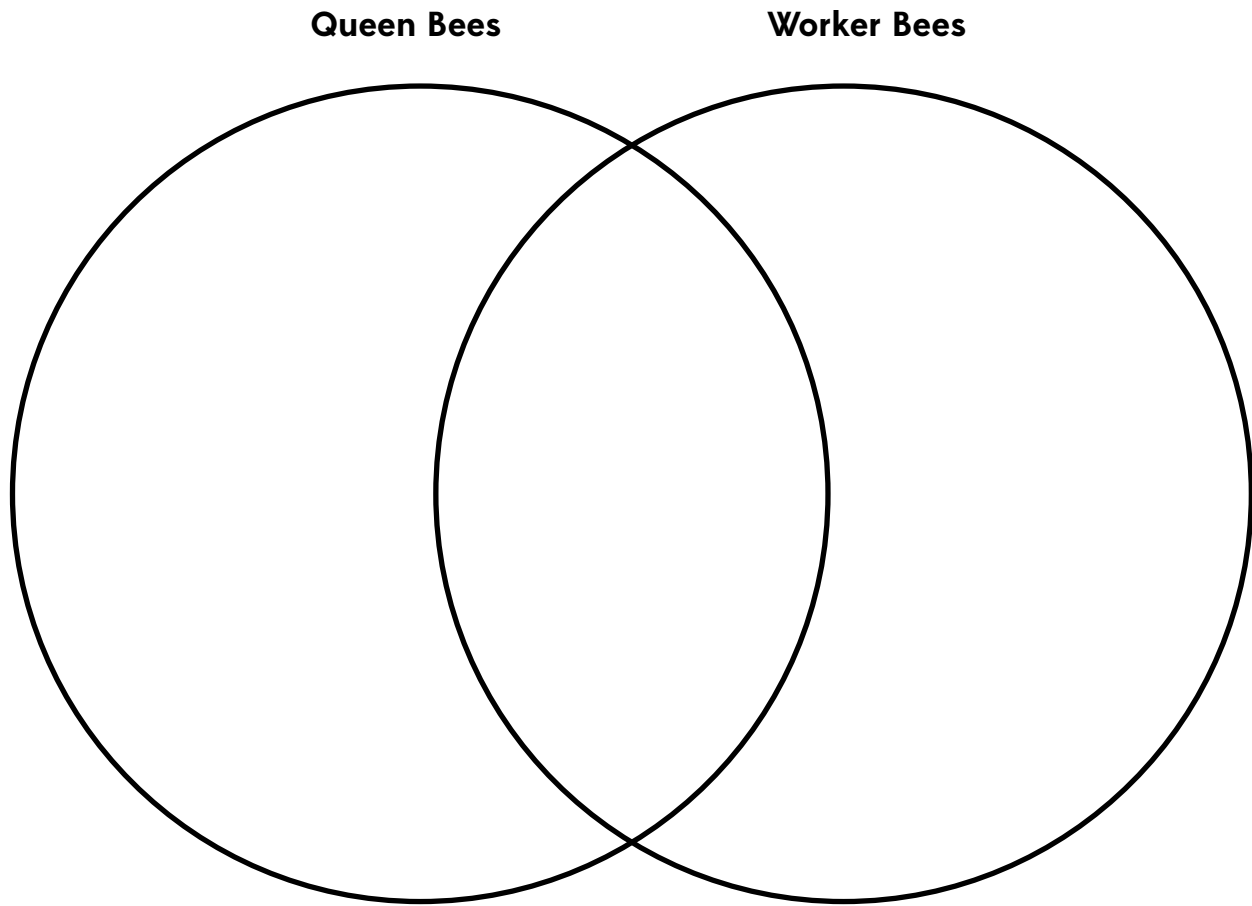
What stops the other female bees in the hive from laying their own eggs?

What special qualities does an egg need to hatch a drone bee?

What does the queen do when she is ready to retire?

Beyond the Book: Watch this video and answer the question below. [How A Queen Becomes A Queen](https://www.youtube.com/watch?v=m_SIH3Uwslc&t=68s) (https://www.youtube.com/watch?v=m_SIH3Uwslc&t=68s)

Compare queen bees to worker bees using this Venn Diagram. How are they different and how are they alike?



<p>I wonder.... _____</p> <p>_____</p> <p>_____</p>
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The Waggle Dance & The Swarm

Pages 12-13

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

scout _____

swarm _____

The Buzz: Complete the following tasks.

Why do honey bees do the waggle dance and the round dance?

If a forager honey bee came into the hive and did a six-second waggle in her dance, how far away is the source of food? Explain how you got your answer.

Why would a hive choose to swarm?

Beyond the Book: Watch this video and answer the question below. Round and Waggle Dance
(<https://www.youtube.com/watch?v=PRGc7skekMQ>)

Choose a partner in your class. Work together to create a waggle dance that communicates that nectar and pollen are available in a tree 300 yards away from the hive and perfectly in line with the sun at noon. You should use a yardstick/meter stick and sidewalk chalk or masking tape to measure and mark the distance you would need to travel. Remember to indicate where the sun is and at what degree you would use for the “figure 8” portion of your waggle dance. And don’t forget to WAGGLE!

<p>I wonder.... _____</p> <p>_____</p> <p>_____</p>
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Biomimicry

Pages 14-15

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

biomimicry _____

aerodynamic _____

biomimetics _____

The Buzz: Complete the following tasks.

Why are hexagons a perfect shape for bees to use to make their honeycomb? What is your evidence?

Go on a hexagon search! Walk around your environment and write down a list of places where you see hexagons. Check offices, restrooms, shelves, tables, walls, outlets, fabrics, and patterns!

Beyond the Book: Watch this video and answer the question below. [Why Nature Loves Hexagons](https://www.youtube.com/watch?v=Pypd_yKGYpA)
(https://www.youtube.com/watch?v=Pypd_yKGYpA)

Why are hexagons the best shape to tile a plane without having any wasted space? (You can repeat their experiment with a straw, a bubble solution, and a flat surface like a piece of plexiglass.)

I wonder.... _____

Pollination: A Win-Win Situation

Pages 16-17

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

self-pollination _____

stamen _____

stigma _____

The Buzz: Complete the following tasks.

What are plants' two main goals?

How do flowers attract insects to come and take their pollen to other plants?

Why do you think that wind pollination is not as effective as insect pollination? Discuss your opinion with a friend before the next group meeting.

Beyond the Book: Watch one of these videos and answer the question below.

Pollination: Trading Food for Fertilization (<https://www.youtube.com/watch?v=LiczM-w3V-U>)

Flowers and Their Pollinators: A Perfect Match (<https://www.youtube.com/watch?v=pnBoM4idf1k>)

Why does it matter that plants attract a specific kind of pollinator to their flower? What is your evidence?

I wonder.... _____

Fruits and Vegetables That Need Bees To Grow

Pages 18-19

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

pasture _____

The Buzz: Complete the following tasks.

What are the effects of self-pollinating plants like sunflowers, coffee plants, peppers, and strawberries?

How do pollinating insects help farmers with milk and meat productions? Cotton production?

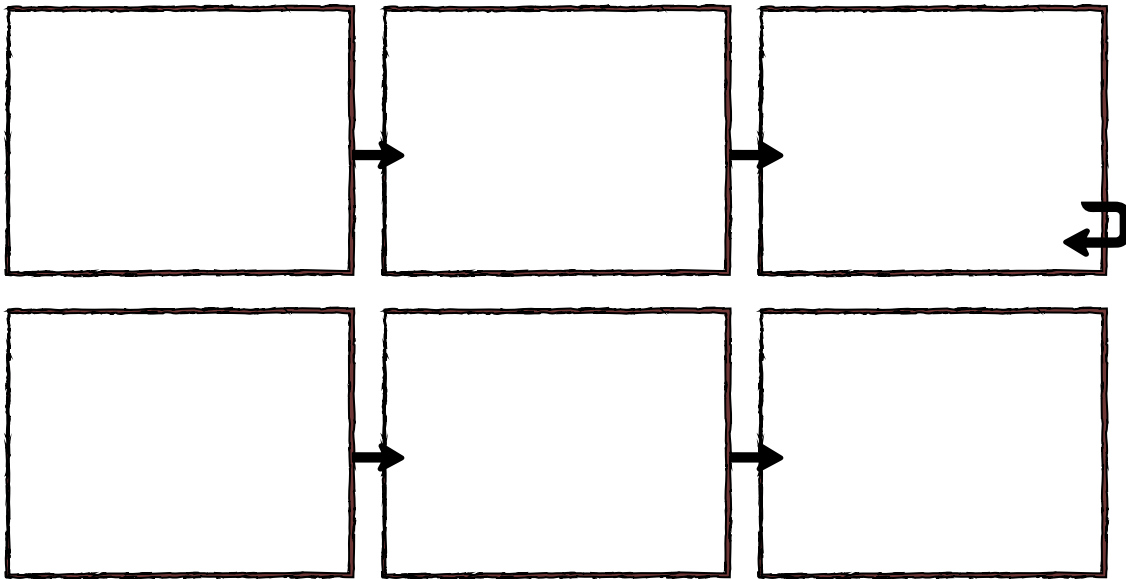
Beyond the Book: Watch one of the videos and answer the question below.

Strawberry Time Lapse (https://www.youtube.com/watch?v=CDy2_OhfUoA&t=12s)

Pumpkin Growth Time Lapse (<https://www.youtube.com/watch?v=ytMpE6fubSQ>)

Sunflower Growing From Seed to Flower (<https://www.youtube.com/watch?v=XovuKDoUCdQ>)

Create your own flow chart of how one of these plants grows. You can draw pictures or write words to describe what is happening at each stage. Can you include a portion of the chart that includes pollination?



I wonder.... _____

Pollinating Pals

Pages 20-21

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

proboscis _____

The Buzz: Complete the following tasks.

Read this short blog about Flower Constancy (<http://blogs.ifas.ufl.edu/entnemdept/2018/04/03/bug-word-day-flower-constancy/>) from the University of Florida. How does a pollinator benefit from visiting the same type of flower over and over again?

How does a plant benefit from a pollinator visiting the same type of flower over and over again?

How does the Rafflesia flower trick the fly into pollination?

Beyond the Book: Watch this video and answer the question below. [The Beauty of Pollination - Moving Art](https://www.youtube.com/watch?v=MQiszdkOwuU) (<https://www.youtube.com/watch?v=MQiszdkOwuU>)

Does this video inspire you to learn more about pollinators? Which pollinators are you most interested in learning more about? Use [Kiddle](https://www.kiddle.co/) (<https://www.kiddle.co/>) to research one pollinator and share some facts with the group.

I wonder.... _____

When Humans Met Bees

Pages 22-23

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

nomadic _____

The Buzz: Complete the following tasks.

Read the short description and view the image of the Efe people of the Congo (<https://www.britannica.com/topic/Efe>). You will need to click Read More on the page to open the article. What can you assume the Efe people learned from the honey bees?

Why do you think sugar would have made a good addition to the primitive human's diet? Think about what you read about their lifestyle and the fact that they did not live in one place for a long period of time.

Go to Kiddle: Tanzania Facts for Kids (<https://kids.kiddle.co/Tanzania>) and find Tanzania on the map.

Beyond the Book: Watch this video and answer the question below. [The Hadza: Last of the First - Honeyguide Bird](https://www.youtube.com/watch?v=6ETvF9z8pcO) (<https://www.youtube.com/watch?v=6ETvF9z8pcO>)

This video dives into the mutualistic relationship between humans, the honeyguide bird, and the honey bees. The Hadza people live in Tanzania, one of the poorest countries in the world per capita income. Notice the men who are hunting the honey: What are they wearing? What are they not wearing? Notice how they start the fire. Why do you think that gathering honey and honeycomb to eat is so important to this group of people? Give evidence to support your thoughts.

<p>I wonder.... _____</p> <hr/> <hr/>
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Ancient Egypt & The Greek Gods

Pages 24-27

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

sacred _____

embalm _____

elixir _____

ambrosia _____

The Buzz: Complete the following tasks.

Why would two priests be feeding an alligator cake and honey?

Why did the Ancient Egyptians not burn beeswax candles?

What are modern Greeks known for today that they may have learned from Ancient Greeks?

Beyond the Book: Watch this video and answer the question below. Tears of Ra: The myths and folklore of Bees (https://www.youtube.com/watch?v=MPXNgpp_DLo)

Why were the bees such an important part of these myths and folklores? What did the people believe bees did that was so special and unique?

I wonder.... _____

Alexander the Great, The Empress Poppaea, Slavic Cultures, St. Ambrose, & Napoleon and Josephine

Pages 28-33

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

revelry _____

bestow _____

coronation _____

sumptuous _____

The Buzz: Complete the following task.

After reading through the pages assigned for this portion of the workbook, choose one of the historical figures to research. Record some interesting facts about that person that you would like to share with the group for the next meeting. While the dates they were born and died are interesting, consider finding out unknown or surprising pieces of information to share! Here are a few kid-friendly websites to get you started.

- [Alexander the Great: Facts for Kids](https://kids.kiddle.co/Alexander_the_Great) (https://kids.kiddle.co/Alexander_the_Great)
- [Ambrose: Facts for Kids](https://kids.kiddle.co/Ambrose) (<https://kids.kiddle.co/Ambrose>)
- [Napoleon: Facts for Kids](https://kids.kiddle.co/Napoleon) (<https://kids.kiddle.co/Napoleon>)
- [Josephine de Beauharnais: Facts for Kids](https://kids.kiddle.co/Jos%C3%A9phine_de_Beauharnais) (https://kids.kiddle.co/Jos%C3%A9phine_de_Beauharnais)

Tree Beekeeping & Laws of the Forest

Pages 36-39

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

plank _____

stirrups _____

The Buzz: Complete the following tasks.

How did the heavy planks used in tree beekeeping keep the bears away?

What did the Law of the Forest mean in medieval Poland?

Read this article about Sun Bear (<https://kids.nationalgeographic.com/animals/mammals/facts/sun-bear>) and watch the video about how the people of Borneo are working to protect the Sun Bear. What are some adaptations that the Sun Bear has that help him get his favorite food?

Beyond the Book: Watch this video and answer the question below. [Cute Nine Month Old Bear Cub Meets Bees For the First Time](https://www.youtube.com/watch?v=TybvFIMP5VM&t=1s) (<https://www.youtube.com/watch?v=TybvFIMP5VM&t=1s>)

What is the mother bear's method to getting the honey and how does her technique help? Why do the bears rub their backs on the trees?

I wonder.... _____

The Beehive & A Beekeeper's Equipment

Pages 40-43

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

ventilation _____

extractor _____

sieve _____

The Buzz: Complete the following tasks.

How would placing a wax foundation within a traditional beehive help the bees? How would it help the beekeeper if she was planning to harvest and sell the honey?

Why would a beekeeper add more supers to the beehive?

Beyond the Book: Watch this video and answer the question below. [Beehive Components: Sager Family Farm](https://www.youtube.com/watch?v=JMaikG5TtEY) (<https://www.youtube.com/watch?v=JMaikG5TtEY>)

You will also want to access this document from the video. It is also available in the description below the video. [Langstroth Hive Components](https://drive.google.com/file/d/1kWO7Abbb4MXb5_36df_kSMhv-iR5Y7PN/view) (https://drive.google.com/file/d/1kWO7Abbb4MXb5_36df_kSMhv-iR5Y7PN/view)

Are you ready to build your own paper Langstroth Hive? Have your teacher print one [Triangular Prism](https://www.fun-stuff-to-do.com/support-files/triangular-prism-shape.pdf) (<https://www.fun-stuff-to-do.com/support-files/triangular-prism-shape.pdf>) and at least three [Rectangular Prisms](https://www.fun-stuff-to-do.com/support-files/rectangular-prism-shape.pdf) (<https://www.fun-stuff-to-do.com/support-files/rectangular-prism-shape.pdf>) These printouts are called nets and will help you create the geometric shapes you will need for your hive!

Build your own Langstroth hive by attaching the three Rectangular Prisms with tape or glue. These will be your hive bodies. Add the Triangular Prism on the top as the cover.

Color or design your hive in any way you would like using markers or colored pencils! With your teacher's permission, search for *painted beehive designs*. There are tons of ways that beekeepers create wild and interesting beehives.

<p>I wonder.... _____</p> <p>_____</p> <p>_____</p>
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Beekeepers at Work & Types of Beehives

Pages 44-47

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

airy _____

skep _____

The Buzz: Complete the following tasks.

Beekeepers have many jobs! You will look more closely at these jobs and the work of the bees in the Virtual Hive Inspection Field Trip. What do you think is the most important job of a beekeeper?

Bees need certain things to survive but can live in lots of different types of spaces. Watch this video and explain how the space does support bees even with fencing and rubble everywhere.
A Beekeepers Life (<https://www.youtube.com/watch?v=FejwYVA4ICw>)

Beyond the Book: Watch this video and answer the question below.

- [Traditional Straw Bee Skeps](https://www.youtube.com/watch?v=BrUm2CqAtOo) (https://www.youtube.com/watch?v=BrUm2CqAtOo)
- [What is a Top Bar Hive](https://www.youtube.com/watch?v=CfOL4ILCLck) (https://www.youtube.com/watch?v=CfOL4ILCLck)
- [What is a Langstroth Hive](https://www.youtube.com/watch?v=Gd5ZKAjTpPg&t=2s) (https://www.youtube.com/watch?v=Gd5ZKAjTpPg&t=2s)
- [What is a Warre Hive](https://www.youtube.com/watch?v=zt8NRF8qViM) (https://www.youtube.com/watch?v=zt8NRF8qViM)

Choose at least two of the videos above that will teach you more about these types of beehives. Choose a partner to Turn and Talk to about what you learned. Take notes on the lines below about what you want to share with your partner.

<p>I wonder.... _____</p> <hr/> <hr/>
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Unusual Beehives

Pages 48-49

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

prosperity _____

hermit _____

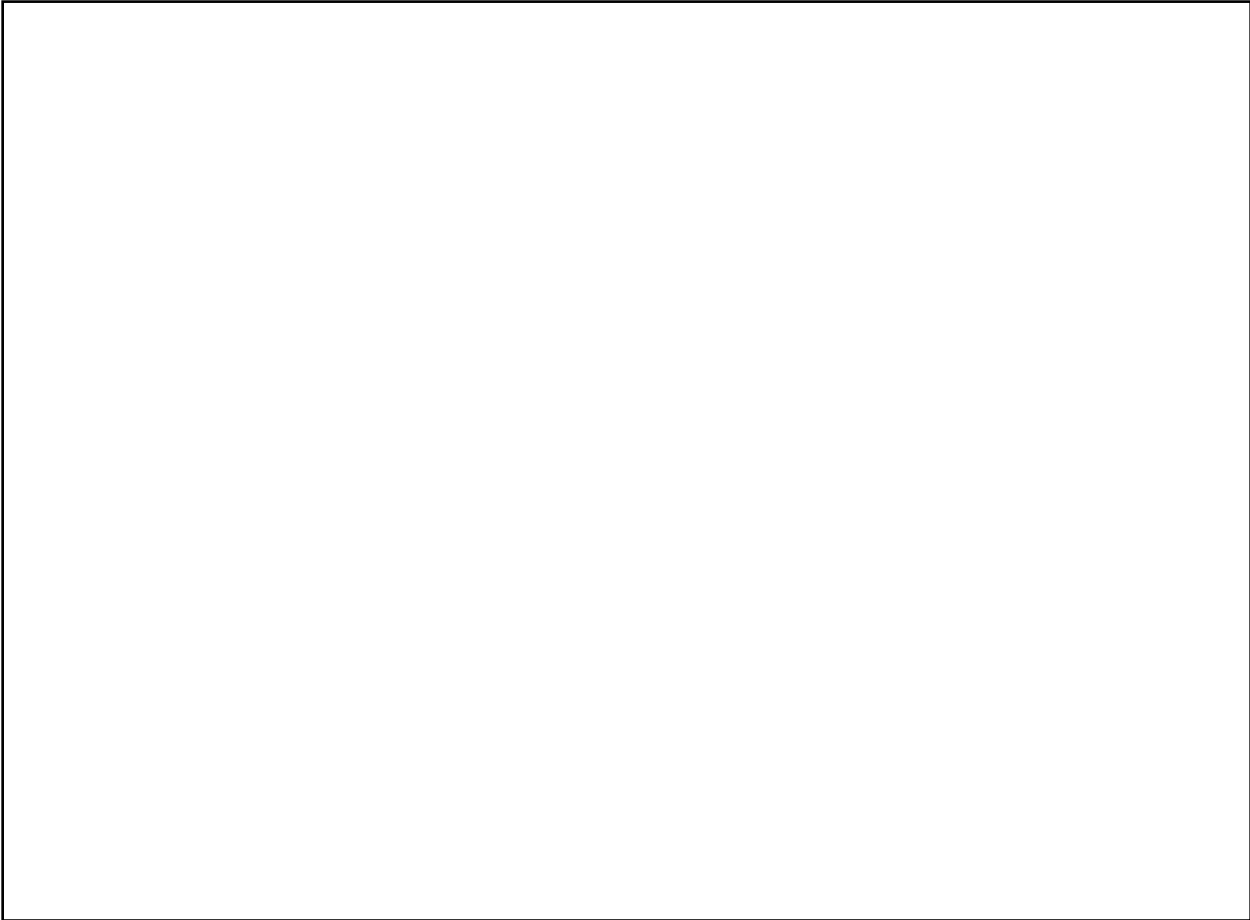
The Buzz: Time to get creative! Watch the following video and check out the images of unusual beehives at this Polish Museum.

28 Muzeum1 (<https://www.youtube.com/watch?v=EtEsG4riIHO&list=PL9996A4694CE5F56B&index=2>)

Beekeeping Museum in Stroze (<http://www.polskaniezwykla.pl/web/gallery/photo,274480.html>)

Let these “bee” inspirations to design and draw your own unusual beehive. Explain where the bees enter/exit, where they build their comb, are the frames like a Langstroth hive or more freeform-like a skep?

My Unusual Beehive



I wonder.... _____

Beekeeping in Ethiopia & Beekeeping in Cameroon

Pages 50-51

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

subdue _____

tactic _____

resin _____

The Buzz: Complete the following tasks.

How is beekeeping in Ethiopia similar to beekeeping in Cameroon?

How are they different?

Which method of honey collecting seems like a better approach, the Ethiopian method or the Cameroonian method? Explain your answer.

Beyond the Book: Watch this video and answer the question below. Honey - The Liquid Gold
(<https://www.youtube.com/watch?v=cuHt2ggXD5k>)

Do you think that organic honey production is helpful for Ethiopia? What is your evidence to support your answer?

I wonder.... _____

Giant Honey Bees of Asia

Pages 52-53

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

migrate _____

The Buzz: Complete the following tasks.

What are some of the ways that the giant honey bees of Asia are different from other honey bees that you have researched?

The giant honey bees of Asia frequently find urban places to build their honeycombs as well as the woods and cliffs. Watch this video and describe how the giant honey bee of Asia is different from honey bees in your area. [Neighbors Got Wild Bees - Giant Honey Bees](https://www.youtube.com/watch?v=kMtFkepZWLo) (<https://www.youtube.com/watch?v=kMtFkepZWLo>)

Beyond the Book: Watch this video and answer the question below. [Nepal Mountain Dwellers Steal Honey from Giant Honey Bees](https://www.youtube.com/watch?v=f13rpcIji5E) (<https://www.youtube.com/watch?v=f13rpcIji5E>)

The title of this video indicates that the honey hunters “steal” from the honey bees. In what way do the honey hunters ensure that the bees can rebuild their honey supplies? What would happen to the bees if the honey hunters did not do this?

<p>I wonder.... _____</p> <hr/> <hr/>
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Bees' Best Buds & Cross Country Bees

Pages 54-57

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

honeydew _____

secretions _____

The Buzz: Complete the following tasks.

Use a kid-friendly search engine and research one of the bees' best buds on pages 54-55. Write down several facts about the plant that you can share with the group.

What other substances can be used by honey bees to make honey?

How did they move bees in ancient Egypt?

Beyond the Book: Watch this video and answer the question below. Blossom Buddies: The Epic Pollination of California's Almonds (<https://www.youtube.com/watch?v=VkIOBU64pXg>)

What are some of the other crops that honey bees are responsible for pollinating? What are some of the issues that are causing the honey bees to die at such alarming rates?

I wonder.... _____

How Bees Make Honey & Sweet Treats

Pages 58-61

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

saliva _____

proplis _____

The Buzz: Complete the following tasks.

What other substances do bees produce?

Which is the most valuable bee product and why?

Choose one of the types of honey on pages 60-61 and research the flower or plant that the honey comes from. Write down several facts to share with the group about the type of honey you chose including what the honey tastes like and where it comes from.

Beyond the Book: Watch either or both of these videos and complete the task below.

- [How Do Bees Make Honey?](https://www.youtube.com/watch?v=nZIEjDLJCmg) (https://www.youtube.com/watch?v=nZIEjDLJCmg)
- [How Do Bees Make Honey: Beekeeping with Maddie #13](https://www.youtube.com/watch?v=AECtOFpbgVs) (https://www.youtube.com/watch?v=AECtOFpbgVs)

Make a honey book! Use [Book Creator](https://bookcreator.com/) (https://bookcreator.com/) to design, write, and share your own digital book about how honey is made. Use pages 58-59 to make sure that you cover all of the details of the honey process. You should have at least six steps or pages in your book to explain how honey is made. Include pictures and text in your book!

<p>I wonder.... _____</p> <p>_____</p> <p>_____</p>
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The Honey Bee's Biggest Enemies

Pages 62-63

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

prey _____

devour _____

The Buzz: Complete the following tasks.

What useful approach does the European Green Woodpecker use to eat bees without getting stung?

Which predator surprised you the most when you read that it ate honey bees?

Choose one of the honey bee's predators to research on a kid-friendly website. Here are a few suggestions through Kiddle.co:

- [Honeyguide facts for kids](https://kids.kiddle.co/Honeyguide) (<https://kids.kiddle.co/Honeyguide>)
- [Honey Badger facts](https://www.nationalgeographic.com/animals/mammals/facts/honey-badger) (<https://www.nationalgeographic.com/animals/mammals/facts/honey-badger>)
- [Death's head hawkmoth facts for kids](https://kids.kiddle.co/Death%27s-head_hawkmoth) (https://kids.kiddle.co/Death%27s-head_hawkmoth)
- [Crab spider facts for kids](https://kids.kiddle.co/Crab_spider) (https://kids.kiddle.co/Crab_spider)
- [Bee-eater facts for kids](https://kids.kiddle.co/Bee-eater) (<https://kids.kiddle.co/Bee-eater>)

Beyond the Book: Watch this video and answer the question below. How Honeyguide Birds Talk to People

This may be the most unique mutualistic relationship in the animal kingdom because these birds are not trained to take the honey hunters to find the bees! This indicates that the humans and birds communicate with an expectation between both of sharing the honey and honeycombs. The bird recognizes that he will get something--honey--for his efforts.

The narrator says that this relationship could “go back to the earliest days of our species.” What do you think that means?

<p>I wonder.... _____</p> <hr/> <hr/>
--

Bee Stings

Pages 64-65

My Literature Circle Job is _____

Word Wizard: Use a dictionary or dictionary website to find and write the definitions for the following words. <https://www.merriam-webster.com>

remedy _____

The Buzz: Complete the following tasks.

Ask an adult: with your teacher's permission, visit other adults in your building or community and ask them what they think is the best remedy for a bee sting. Write down at least two different remedies to discuss with the group.

Watch China's Ruan Liangming with 137 pounds of bees! Heaviest Mantle of Bees - [Guinness World Records](https://www.youtube.com/watch?v=izDNnfUKTBw) (<https://www.youtube.com/watch?v=izDNnfUKTBw>)

In the introduction to the video, they explain that "performers place a queen bee on their bodies, attracting thousands of insects." Why does it need to be the queen bee to attract the other honey bees? **** Hint: not sure? Reread pages 10-11**

Beyond the Book: Watch this video and answer the question below. [How Do Bees Sting?](https://www.youtube.com/watch?v=5fMNHLc_iSc&t=1s)
(https://www.youtube.com/watch?v=5fMNHLc_iSc&t=1s)

Why do female bees NOT want to sting you or anything else?

I wonder.... _____

Bees in Danger & Bees in the Big City

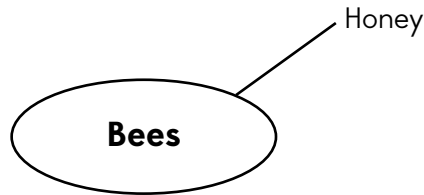
Pages 66-69

My Literature Circle Job is _____

The Buzz: Complete the following tasks.

Describe what happens when a hive has 'colony collapse disorder.'

Read this short article We Need Bees (<https://www.planetbee.org/why-we-need-bees>). Now, let's revisit your original Word Map. Draw as many new lines and add as many new words or phrases that tell the group what you learned. The group will discuss this information at the next Literature Circle meeting.



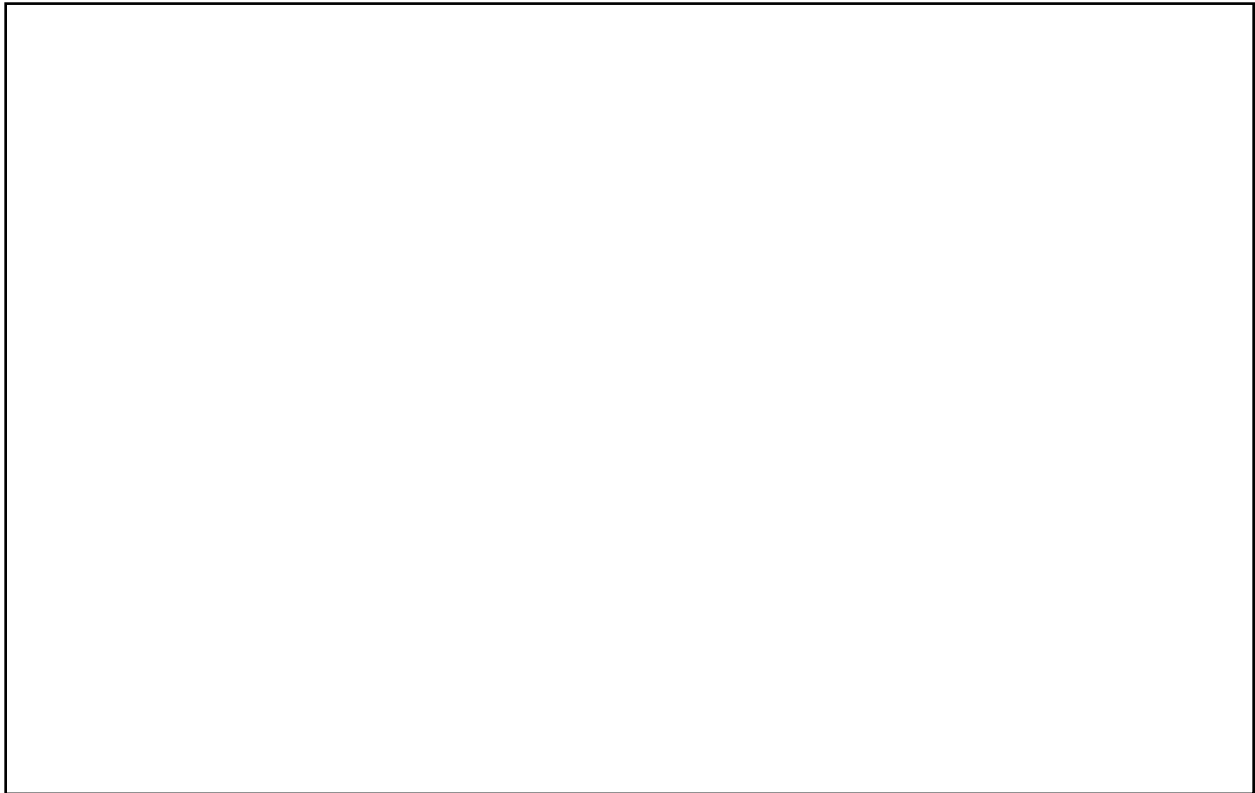
Watch this video. A World Without Bees (<https://www.youtube.com/watch?v=7X1xIIyZw3M&t=46s>). How would it affect us if there were no more bees?

Beyond the Book: Watch this video and answer the question below.

You can design and build your own mason or native bee house! Check out these websites for inspiration and for more information about what mason and native bees like in a structure, then design your own!

- Choose the best mason bee home or make one
(https://davidsuzuki.org/queen-of-green/choose-best-mason-bee-home-make-one/?gclid=CjwKCAjw2bmLBhBREiwAZ6ugo5YBxybDGijoBwondxBnJ-uBum3cEJaDFkgTMVMsDd6VuJzP_sOB3hoC7zUQAvD_BwE)
- DIY to make a solitary bee house
(<https://crownbees.com/blog/diy-how-to-make-a-solitary-bee-house/>)
- How to Make a Homemade Mason Bee House
(<https://beekeepclub.com/how-to-make-a-homemade-mason-bee-house/>)

Design your bee house here!

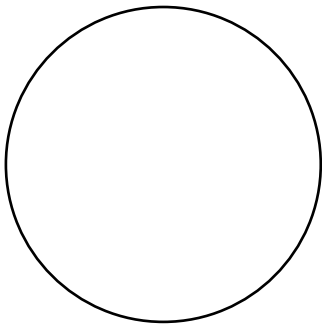


I wonder.... _____

The Daily Buzz

Pages 34-35 and 70-71

Create your own newspaper about any buzzworthy facts or stories you have learned about honey bees. Use The Daily Buzz on pages 34-35 and 70-71 to inspire your article! Create your newspaper on the final page of your workbook!

<h2><u>The Daily Buzz</u></h2>		
Author _____		Date _____
Breaking News _____ _____ _____ _____ _____		
Did you know? _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	Fun Fact _____ _____ _____ 	Superhero Story _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

Part 2: Film Circle for Dance of the Honey Bee

PREPARE: Get ready to view the **Dance of the Honey Bee!** You will explore the following buzzworthy articles to prepare you to learn and enjoy this short film about the amazing honey bee!

READ: This article will help you complete the following tasks. [Earth Rangers: What's Threatening Bees?](https://www.earthrangers.com/my-missions/whats-threatening-bees/) (<https://www.earthrangers.com/my-missions/whats-threatening-bees/>)

WRITE: Record your thoughtful answers below.

What do bees need in their environment to stay healthy?

How do diseases and pests affect bees?

Why are invasive plant species bad for bees?

Why would farmers need to use pesticides?

How does climate change affect bees?

DISCUSS: Be prepared to discuss your answers at the next group meeting.

<p>I wonder.... _____</p> <hr/> <hr/> <hr/>
--

READ: This article will help you complete the following tasks. Whole Kids Foundation: 6 Ways to Help Honey Bees (<https://www.wholekidsfoundation.org/blog/6-simple-ways-your-family-can-protect-honey-bees>)

WRITE: Record your thoughtful answers below.

Why are honey bees important to you?

How do honey bees support other animals?

What does the loss of habitat mean?

What are some ways that you can help honey bees? Brainstorm some other ideas that are not mentioned in this article

DISCUSS: Be prepared to discuss your answers at the next group meeting.

<p>I wonder.... _____</p> <hr/> <hr/>
--

Film Review

Title _____ Name _____ Grade _____

FILM REVIEW

Summary

What did you find most interesting?

Did you like the film? Why or why not?

What do you think is the biggest threat to bees?

I rate this film ___ out of 5



Part 3: Virtual Field Trip - Spring Hive Inspection with The Bee Cause Project + Queen & Comb

It is time to take a virtual field trip to visit a thriving beehive! Watch the video (<https://www.youtube.com/watch?v=atKDVOZ9nds>) and complete the following checklist. Look for evidence of Best Practices and record your detailed observations on the checklist below.

BEST PRACTICES OBSERVATION CHECKLIST

	WHAT TO LOOK FOR...	OBSERVATIONS
<input type="checkbox"/>	Safety Equipment: Veils?	
<input type="checkbox"/>	Safety Equipment: Suits?	
<input type="checkbox"/>	Safety Equipment: Hive Tool?	
<input type="checkbox"/>	Safety Equipment: Smoker?	
<input type="checkbox"/>	Bee Behavior: Temperament? (Calm, Nervous, Aggressive)	
<input type="checkbox"/>	Bee Behavior: Traffic at entrance? (High, Medium, Low)	
<input type="checkbox"/>	Keeper Behavior: Movement?	
<input type="checkbox"/>	Keeper Behavior: "Listens" to hive?	
<input type="checkbox"/>	Keeper Behavior: Responds appropriately to bees?	
<input type="checkbox"/>	Hive: Population of bees? (Heavy, Moderate, Low)	
<input type="checkbox"/>	Hive: See the Queen?	
<input type="checkbox"/>	Hive: See Eggs?	
<input type="checkbox"/>	Hive: See Larva?	
<input type="checkbox"/>	Hive: See Capped Brood?	
<input type="checkbox"/>	Hive: See Juvenile bees?	
<input type="checkbox"/>	Hive: See Drones?	
<input type="checkbox"/>	Hive: See Workers?	
<input type="checkbox"/>	Hive: Laying pattern of eggs? (Uniform and solid, Random)	
<input type="checkbox"/>	Hive: Open nectar in cells?	
<input type="checkbox"/>	Hive: Honey stores?	
<input type="checkbox"/>	Hive: Bees bringing in pollen?	
<input type="checkbox"/>	Hive: Do bees appear crowded?	
<input type="checkbox"/>	Maintenance: Signs of disease?	
<input type="checkbox"/>	Maintenance: Signs of pests?	
<input type="checkbox"/>	Maintenance: Resources within hive are normal level?	
<input type="checkbox"/>	Maintenance: Need to feed bees?	

Honey Tasting Experience

Did you know that the flavor of honey changes based on the season and the region in which it is produced? The flavor of honey is based on the floral variety near the hive. Think about how flowers in your own area look and smell differently. Each flower has its own unique taste for the bee, as well. The percentage of fructose, glucose and the amount or type of acids--amino or organic--can affect the flavor of honey.

For this Honey Tasting Experience, you will have four (4) different varieties of honey to explore. Your teacher will tell you the names of the four (4) types of honey but will not tell you which one is which. The names of the honey will be kept a secret until the end of the activity. You will be able to look at images of the different types of flowers the bees visited to help you!

READ: Reread **How Bees Make Honey** (pages 58-59) and **Sweet Treats** (pages 60-61) in **Bees: A Honeyed History** to review how honey is made and why there are different flavors of honey.

DISCUSS: Meet with your group or the whole class to complete the Honey Tasting Experience. You will fill out the following chart as you observe, smell, and taste each variety of honey.

HONEY TASTING EXPERINECE	
<p style="text-align: center;">HONEY A</p> <p>Sight _____</p> <p>Smell _____</p> <p>Taste _____</p> <p>_____</p> <p>Silly Name _____</p> <p>Real _____</p>	<p style="text-align: center;">HONEY B</p> <p>Sight _____</p> <p>Smell _____</p> <p>Taste _____</p> <p>_____</p> <p>Silly Name _____</p> <p>Real _____</p>
<p style="text-align: center;">HONEY C</p> <p>Sight _____</p> <p>Smell _____</p> <p>Taste _____</p> <p>_____</p> <p>Silly Name _____</p> <p>Real _____</p>	<p style="text-align: center;">HONEY D</p> <p>Sight _____</p> <p>Smell _____</p> <p>Taste _____</p> <p>_____</p> <p>Silly Name _____</p> <p>Real _____</p>

Final Project: *I Speak for the Bees!*

Congrats! You've almost completed the journey! For your final presentation, you will choose one of the following ways to present the information you have learned. Use any of the information from the text, film, and virtual field trip in your final presentation.

CHOOSE: Select one of the following ways that you want to present everything you have learned!

Final Presentation Formats

- Create a digital essay video
- Create a digital poster
- Design an infographic
- Write and host a podcast
- Write a short play to perform live or pre-recorded
- Write and illustrate a comic strip
- Host a classroom webinar
- Create a newspaper including articles and pictures to be distributed
- Create a dance of the honey bee to perform live or pre-recorded

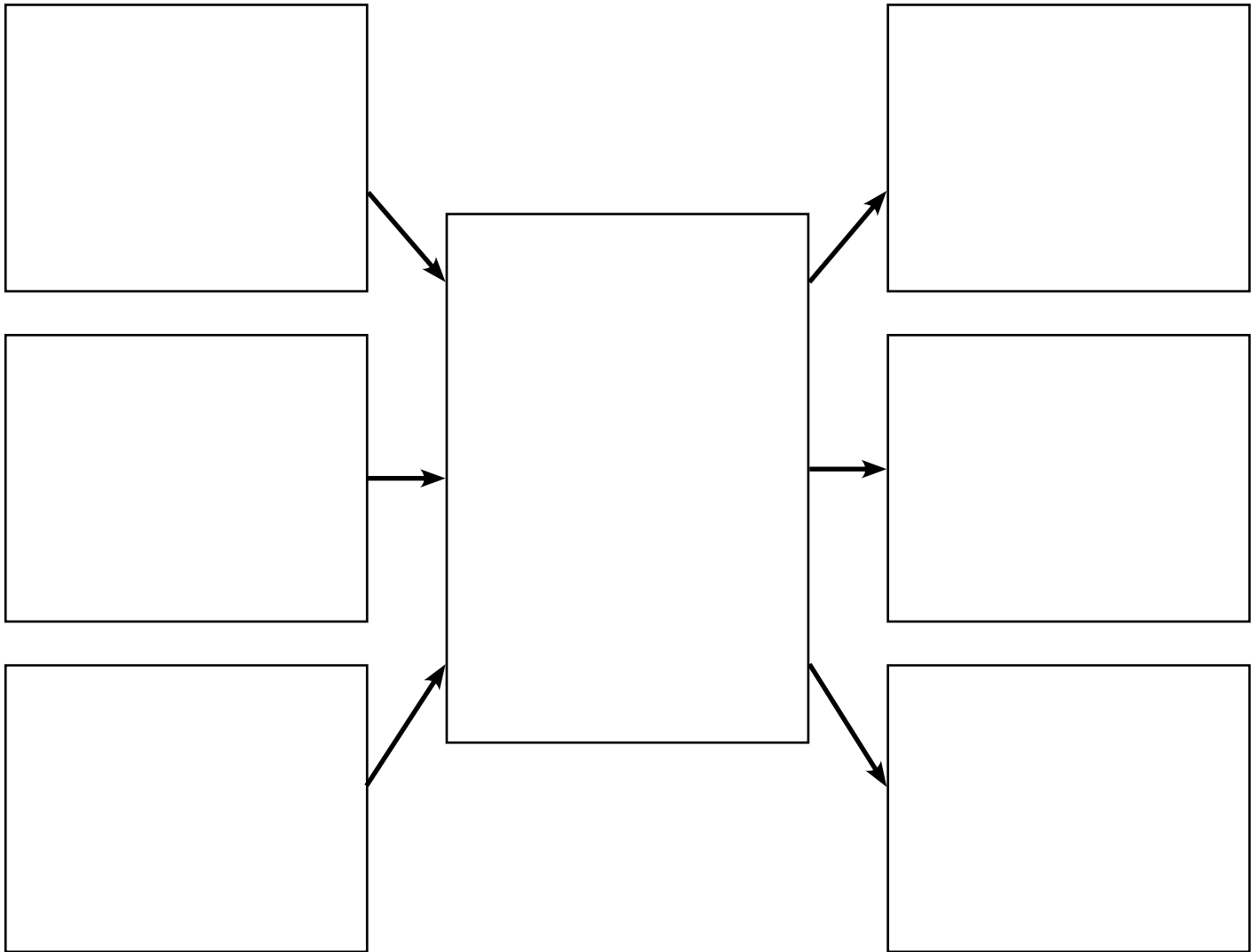
ANSWER: Choose at least one of the following questions to answer in your final project. The question or questions that you chose will help guide your final project.

Final Presentation Prompting Questions

- Why are honey bees important?
- What historical value did honey bees provide mankind or the animal world?
- What part do honey bees play in our food systems?
- How do honey bees support our ecosystem?
- What stressors continue to cause harm to honey bees?
- What are ways that your audience can save the honey bees?
- How do "I Speak for the Bees?"

ORGANIZE: Use the thinking map provided to plan your project. Write the question you plan to answer in the middle square. The other squares are where you can organize how you want to answer the question with facts and opinions from your research. You should also use the Final Project Scoring Rubric to help you plan your project. Your teacher will use the rubric to score your project!

Final Project: I Speak for the Bees!
Thinking Map



FINAL PROJECT SCORING RUBRIC

Category	Exemplary - 4	Accomplished - 3	Developing - 2	Beginning - 1
Content	Covers the topic in-depth and uses details and examples. Focuses on the important facts and has a well-formed opinion.	Covers the topic with some amount of knowledge and uses some details and examples. Focuses on the important facts and has a clear opinion.	Covers the topic with a low amount of knowledge and uses very few details and examples. Facts and opinions are vague but are included.	Covers a minimal amount of content and the focus is unclear. Facts and opinions are also unclear.
Creativity	Shows a large amount of creativity and original thought.	Shows some amount of creativity and original thought.	Shows a minimal amount of creativity and original thought.	Shows little to no amount of creativity or original thought.
Appearance and Neatness	Excellent use of graphics, effects, colors, space, and other tools. Attractive and appealing finished product.	Good use of graphics, effects, colors, space, and other tools. Overall, neat finished product.	Some use of graphics, effects, colors, space, and other tools. Some portion is distracting from a neat finished product.	Minimal use of graphics, effects, colors, space, and other tools. Not a neat finished product.
Mechanics	Correct spelling, grammar, and punctuation.	A few mistakes in spelling, grammar, or punctuation.	Several mistakes in spelling, grammar, or punctuation, little to no editing.	Many mistakes in spelling, grammar, or punctuation, clearly not edited.
Evidence	Includes and integrates appropriate sources in their response to support the content.	Includes an appropriate source but may not be fully integrated with the content.	Includes an appropriate source, not integrated at all with the content.	Does not include a source.

Comments:

Total Score = _____/20



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