



I SPEAK FOR THE BEES

A curriculum guide for educators provided by
THE BEE CAUSE PROJECT

Including the *I Speak for The Bees!*
Student Workbook

Funding provided by The National Geographic Society

TABLE OF CONTENTS

SECTIONS	Page No.
Introduction	3
Background Information About Bees	5
Part 1: Literature Circle for Piotr Socha’s Bees: A Honeyed History	6
<ul style="list-style-type: none"> • Materials and Resources • Summary and Details • What Is A Literature Circle? • Grouping for a Literature Circle • Roles for a Literature Circle • Implementing a Literature Circle • Wrapping Up 	6 6 6 7 7 8 9
I Speak for The Bees! Student Workbook Details	10
Video + Article Links for Educator	10
Part 2: Film Circle for Dance of the Honey Bee	13
<ul style="list-style-type: none"> • Materials and Resources • Summary and Details • What is a Film Circle? • Grouping for a Film Circle • The Role for a Film Circle • Implementing a Film Circle • Educator’s Talking Points for Dance of the Honey Bee • Wrapping Up 	13 13 13 13 14 14 15 15
Part 3: Virtual Field Trip - Spring Hive Inspection	16
<ul style="list-style-type: none"> • Materials and Resources • Summary and Details • What is a Virtual Field Trip? • Grouping for a Virtual Field Trip • Implementing a Virtual Field Trip • What are Best Practices? • Wrapping Up 	16 16 16 16 16 16 17
Implementing the Honey Tasting Experience <i>(optional)</i>	18
Final Project: I Speak for the Bees! Presentation	20
Final Project Scoring Rubric	21
Next Generation Science Standards & Common Core English Language Arts Standards	22



INTRODUCTION

The **I Speak for The Bees! Project** is a four-part, educational deep-dive into the world of honey bees including a final student-driven presentation. By completing the full scope of this project, students will understand the history of the honey bee, modern beekeeping best practices, the interaction between bees and the plant world, threats to the survival of bees and other pollinators, and mutualistic relationships. Students will research, cultivate their opinions, answer probing questions, and present their knowledge to the community through the media platform of their choice.

The first component is a **Literature Circle** focused on the book, **Bees: A Honeyed History**. This book is the perfect choice for chunking information into age-appropriate, bite-size research topics. Students will work in a group of their peers to complete specific jobs, discover new terminology, answer questions from the text, and explore age-appropriate blogs, professional articles, and video links. The students will also engage in low-stakes writing using **I Wonder** journaling.

The second component is a **Film Circle** for the short film, **Dance of the Honey Bee**. This provides another layer of research, this time from the point of view of the scientist and the environmentalist. Students will work on specific research topics to gather more information. The students will take on the role of **Film Critic** and discuss facts versus opinions in a group of their peers.

The third component is a **Virtual Field Trip Hive Inspection**. The students will learn about the best practices of beekeepers and natural threats to the hive. There are activities for students to complete within this component, as well as an optional **Honey Tasting Experience**.

The **I Speak for The Bees! Presentation** is the final component, the culminating event. Students will choose from the Final Presentation Formats to share their learning experiences with an audience of their peers, the school community, and/or their families. For the presentation requirements, the student must answer one or more of the Final Presentation Prompting Questions in whichever format the student chooses. The student will include researched facts and opinions that she has completed using the I Speak for The Bees! Student Workbook, the student companion for this project. The educator will use the Final Project Scoring Rubric to score the student's final project.

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

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 can be done about it?
- What are ways that your audience can save the honey bees?
- How do **“I Speak for the Bees?”**

It is recommended that the educator teach the components in the order presented above for continuity and appropriate progression. The students should know the history of the honey bee through exploration of the book before exposure to the in-depth issues bees face environmentally.

This project is designed as a small group lesson. It is at the discretion of the educator to choose either to a.) create multiple small groups for the class who are all working on the same book and workbook at the same time, b.) rotate the lesson through the class as a small group lesson with five students while other students work on other assignments or c.) use this lesson as a whole-class assignment and give multiple children the five roles and other responsibilities.



BACKGROUND INFORMATION ABOUT BEES

Bees are responsible for pollinating 70% of the top 100 food crops worldwide, accounting for 90% of the world's nutrition. According to the White House, pollinators contribute more than 24 billion dollars to the United States economy, of which honey bees account for more than 15 billion dollars through their vital role in keeping fruits, nuts, and vegetables in our diets. Harvested honey alone contributed \$317.1 million to the economy.

These hardworking insects are also busy pollinating a wide variety of other plants, providing food for other animals, and in the case of honey bees, producing wax, honey, and propolis. According to the USDA, a honey bee colony is worth 100 times more to the community than to the beekeeper—meaning the value they deliver extends well beyond their actual price.

We need bees! Bees are perfectly adapted to pollinate, help plants grow, breed, and produce food. But bees are in trouble. There is a decline in bee populations across the world caused by a combination of stressors - from loss of habitat and food sources to exposure to pesticides and the effects of climate breakdown. More than ever, we need to recognize the importance of bees and work to ensure their protection.

These videos and articles will help the educator prepare to discuss pollinators and why they are so critically important to our environment and our future. Any of the following videos can be shared with students at the educator's discretion.

All videos and references are used for educational purposes only. The Bee Cause Project does not endorse any brands, labels, organizations, or businesses included in videos or references.

- [Meet The Bee Cause Project](#)
- [TED: The First 21 Days of a Bee's Life](#)
- [What Are Pollinators?](#)
- [The Critical Importance of Pollinators](#)
- [Benefits of Planting Flowers for Bees](#)
- [About Pollinators](#)

Literature Circle for Piotr Socha's *Bees: A Honeyed History*

Text by Wojciech Grajkowski, Translation byANGES Monod-Gayraud



MATERIALS & RESOURCES

- Each student should have a copy of ***Bees: A Honeyed History***
- Each student should have a printed copy of ***I Speak for The Bees!*** Student Workbook
- Access to the internet via computer or iPad
- One (1) large piece of chart paper
- Writing tools
- Printer paper or poster board for the Artful Artist Role

Summary and Details

This larger-than-life non-fiction book is one part science, one part historical timeline, and all parts fascinating! Students will learn the important role that honey bees have played in the earth's evolving ecosystem and ancient cultures. They will explore how bees evolved from wasps, the Greek God's obsession with honey, the Giant Honey Bees of Asia, the Honeyguide Birds journey with the Hadza people of Africa, and much more. Young learners will be instantly captured by the images on each page and they will revel in the history of the honey bee.

- **Grade Level:** 3rd - 5th grade
- **Genre:** Non-Fiction
- **Print Length:** 80 pages
- **Language:** English

What is a Literature Circle?

A literature circle is a small group of students who work together to take on individual roles or jobs to promote discussion about an assigned text. The educator assigns the roles and the students rotate through the roles to allow each student ownership during meetings. The roles allow the students to engage with the text and provide talking points for discussion. Literature Circles build community, foster critical thinking skills, and lay groundwork for strong oral and listening behaviors.

Combining science and literature can help students make more meaningful connections with both. When an educator utilizes The Bee Cause pollinator-friendly lessons, students are excited to work with living, stimulating, interactive subject matter -- bees! By adding rich texts with facts and vocabulary, educators make cross-curricular connections resulting in more student engagement and fostering a love of reading.

The educator should scaffold this Literature Circle with a strong framework. This begins with a schedule created for reading and work expectations at the start of the lesson. (See the **example below.**) Because the goal is to allow the students to direct the conversations rather than putting the responsibility on the educator, the educator should approach the lesson as the guide rather than the leader. The Literature Circle Roles and the **I Speak for The Bees!** Student Workbook will guide the students through the learning process. The educator is there to monitor and adjust when necessary and assists in keeping the students accountable.

Reading + Meeting Schedule:	Work Expectations:
Monday - Read pages 4-7	Monday - complete your Literature Circle Job as well as the corresponding pages in your Student Workbook
Tuesday - Meet in Literature Circle Group @ 8:15 am	Tuesday - any incomplete work should be finished before moving on to Wednesday's reading
Wednesday - Read pages 8-11	Wednesday - complete your new Literature Circle job as well as the corresponding pages in your Student Workbook

Grouping for a Literature Circle

It is important to group students by reading level as well as ability to work together. Consider the strong thinkers and talkers when selecting groups; students should be held accountable for their roles during each meeting. The educator should model how to have productive conversations about the text, including how to listen, how to give and take thinking time, and how to ask questions.

There are five roles for this Literature Circle, however, the educator can omit any job to adjust for fewer students. If more than five students are working together, the educator can assign more than one student to a job at her discretion.

The Roles for a Literature Circle

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

Artful Artist: Your job is to draw **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 it, let them discuss it and talk about it first. Then you can tell them about it.

Implementing a Literature Circle

The first assignment, **Preparing for the Text Activity**, is a Word Map on page two of the Student Workbook. The students will record information that they already know about bees. The students should complete this assignment independently **before** beginning to read the book and should bring the completed Word Map to the next Literature Circle meeting.

The next meeting will begin by exploring what the students already know with a **KWL Chart**. The educators should use a large piece of chart paper with columns for what the students **Know**, what the students **Wonder**, and after the book, what the students **Learned**. This visual chart should be available to the students throughout the duration of the full project so they can add to the **Wonder** and **Learned** columns as a group and as individuals. This is an ongoing opportunity for the students to have ownership of their learning process. (See the **example below**.)

During the next meeting, discuss the Literature Circle Roles which are outlined in each Student Workbook. The educator may assign the first role to the students or allow them to choose their first role. The students will rotate roles after each meeting to ensure that all students are involved in each level of learning.

I Know...	I Wonder...	I Learned...

Wrapping Up

Host a final meeting for the students to discuss and share their Daily Buzz newspapers and any final discussion opportunities.

At this point, the students should start exploring the **Final Presentation Formats** and consider what they may choose as their final project. They should also begin to explore the **Final Presentation Prompting Questions**. This is a good time to discuss how the students would answer one or more of the questions. Common Sense Education provides an amazing list of [Best Presentations and Slideshows](#) for students.

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?”**

I Speak for The Bees! Student Workbook Details

Each student should have her own copy of the **I Speak for The Bees!** Student Workbook. The workbook allows the student to record her Literature Circle Job at the top of the page as this will be the starting place for each meeting. Artful Artist is the only exception as the student will use printer paper or poster board to complete her job each week. The students will use the workbook for the entire project.

The **I Speak for The Bees!** Student Workbook corresponds to pages or sections in **Bees: A Honeyed History**. The following items are featured in the workbook to guide and prompt the students:

- **Word Wizard:** The students will be prompted to explore new words in this section using a dictionary or dictionary app.
- **The Buzz:** This section will provide a deep dive into the text, encouraging students to research specific topics, make comparisons, draw conclusions, and provide evidence to support their own learning process.
- **Beyond the Book:** This portion will illuminate the learner's absorbent mind with videos, articles, and further explorations of the concepts in the text. The students will record their findings in their workbooks before the next meeting.
- **I wonder...** is a place for students to journal about things they want to know more about based on the reading. This informal, low-stakes writing style allows students to reflect in written language on the reading and their own thinking rather than focusing on formal writing styles. The student inquiries can be used beyond the book as future independent research topics.

Video + Article Links for Educator

The educator should familiarize herself with the links, blogs, and videos listed below for each section of the book as the students will be utilizing this information to respond in the **I Speak for The Bees!** Student Workbook.

Topic:	Web Links:
How the Bee Came to Be	Mutualism Facts for Kids from Kiddle Which Came First: Flowers or Bees?
Anatomy of the Honey Bee	Bee Facts for Kids How Bees Can See the Invisible
Busy Bees	Amazing Time-Lapse: Bees Hatch Before Your Eyes
Queen of the Hive	How A Queen Becomes A Queen

Topic:	Web Links:
The Waggle Dance & The Swarm	Round and Waggle Dance
Biomimicry	Why Nature Loves Hexagons
Pollination: A Win-Win Situation	<p>**Pollination: Trading Food for Fertilization or Flowers and Their Pollinators: A Perfect Match</p> <p>**This video does describe pollination as “plant sex” and may not be in keeping with your school’s policy on appropriate discussions. The second video is provided as an alternative option. Please direct your students to the video you would prefer they watch.</p>
Fruits and Vegetables That Need Bees To Grow	Strawberry Time Lapse Pumpkin Growth Time Lapse Sunflower Growing From Seed to Flower
Pollinating Pals	Flower Constancy Blog
When Humans Met Bees	Efe people Kiddle: Tanzania Facts for Kids The Hadza: Last of the First - Honeyguide Bird
Ancient Egypt & The Greek Gods	Tears of Ra: The myths and folklore of Bees
Alexander the Great, The Empress Poppaea, Slavic Cultures, St. Ambrose, & Napoleon & Josephine	Alexander the Great: Facts for Kids Ambrose: Facts for Kids Napoleon: Facts for Kids Josephine de Beauharnais: Facts for Kids
Tree Beekeeping & The Laws of the Forest	Sun Bear Cute Nine Month Old Bear Cub Meets Bees For the First Time
The Beehive & A Beekeeper’s Equipment	Beehive Components: Sager Family Farm Langstroth Hive Components Triangular Prism Rectangular Prisms

Topic:	Web Links:
Beekeepers at Work & Types of Beehives	A Beekeepers Life Traditional Straw Bee Skeps Beekeeping in Guinea What is a Top Bar Hive What is a Langstroth Hive What is a Warre Hive
Unusual Beehives	28 Muzeum1 Beekeeping Museum in Stroze
Beekeeping in Ethiopia & Beekeeping in Cameroon	Honey - The Liquid Gold
The Giant Honey Bees of Asia	Neighbors Got Wild Bees - Giant Honey Bees Nepal Mountain Dwellers Steal Honey from Giant Honey Bees
Bees Best Buds & Cross Country Bees	Blossom Buddies: The Epic Pollination of California's Almonds
How Bees Make Honey & Sweet Treats	How Do Bees Make Honey? How Do Bees Make Honey: Beekeeping with Maddie #13 Book Creator
The Honey Bee's Biggest Enemies	Honeyguide facts for kids Honeybadger facts Death's head hawkmoth facts for kids Crab spider facts for kids Bee-eaters facts for kids How Honeyguide Birds Talk to People
Bee Stings	Guinness World Records
Bees in Danger & Bees in the Big City	We Need Bees A World Without Bees Choose the best mason bee home or make one DIY to make a solitary bee house How to Make a Homemade Mason Bee House

Film Circle for *Dance of the Honey Bee*

A short film about honey bees by Peter Nelson.

Original score by John Powell, and narrated by Bill McKibben.



MATERIALS & RESOURCES

- **I Speak for The Bees!** Student Workbook -- each student should have a printed copy
- Access to the internet via computer or iPad
- Access to the [Dance of the Honey Bee](#) video
- One (1) large piece of chart paper
- Writing tools

Summary and Details

Honey bees are our accomplices in understanding the world around us and they are in distress. The short film, **Dance of the Honey Bee** is an age-appropriate introduction to the current environmental stressors that honey bees face while also highlighting the beauty of these clever insects.

- **Film Length:** 6.08 minutes

What is a Film Circle?

A **Film Circle** is a structured group project where students are assigned a role to perform based on a short film. Each student's goal is to critique the film, **Dance of the Honey Bee**, using their unique perspectives and presenting their opinions to the group. The purpose of this activity is to encourage a student-driven discussion while creating accountability within the group through tasks to be completed at an agreed-upon meeting time. The students will use the accompanying articles as guided research which will aid in their ability to form a well-rounded opinion for their **I Speak for The Bees! Presentation**.

The Film Circle experience encourages students to organize and articulate their opinion about a visual and auditory experience. Students must use factual information to support their opinions making them better equipped to form well-developed arguments for their final presentation.

Grouping for a Film Circle

The same five students may continue to work together for the Film Circle or the educator may choose to mix up the groupings.

The Role for a Film Circle

Each student will become a **Film Critic** and is responsible for completing the following as background research:

- Read two short, age-appropriate articles.
- Complete questions in the **I Speak for The Bees!** Student Workbook.
- Watch **Dance of the Honey Bee** -- it may require multiple viewings to gather information.
- Complete a Film Review document in the **I Speak for The Bees!** Student Workbook.
- Share feedback about the film in a group discussion led by the educator.

Implementing a Film Circle

The students should read the following articles to complete this portion of the **I Speak for The Bees!** Student Workbook before watching **Dance of the Honey Bee**. This will provide a guided explanation of the issues that honey bees are facing. The workbook provides prompting questions for the group discussion after the completion of this section.

- [Earth Rangers: What's Threatening Bees?](#)
- [Whole Kids Foundation: 6 Ways to Help Honey Bees](#)

The educator should assign the first two pages (pages 26-27) for the students to complete. The group will then meet to discuss the assignment. It is important that the students have the opportunity to discuss the facts that they learned but also to discuss their opinions.

This [BrainPop video](#) - will provide more information about Facts vs. Opinions. The group should watch this video together and practice making fact and opinion statements. The educator will know when the students are ready to proceed to the next step.

Using the large sheet of chart paper, the educator will create a **Facts Vs. Opinion Chart** with the students based on the reading assignment. This visual chart should be available to the students throughout the duration of the full project so they can add to the columns as a group and as individuals. This is an ongoing opportunity for the students to have ownership of their learning process and adequately craft an educated opinion for their final presentation. (See the **example below.**)

Facts	Opinions
Kim - Honey bees are losing their habitat because there are fewer wildflowers.	Kim - I think it is sad that honey bees do not have food access.
Jamal - Farmers use pesticides to keep other insects from eating their crops.	Jamal - Farmers should stop using pesticides because it kills everything including all insects.

The next step is to inform the students about the job of a film critic and how it relates to them. The educator should review Movie Criticism Facts for Kids with the students before they begin the next assignment.

The students will watch the short film and complete the **Film Review** in the **I Speak for The Bees!** Student Workbook. The educator and the students will revisit the **Fact vs. Opinion Chart** after watching **Dance of the Honey Bee** and continue to add more information. This final discussion may happen over several meetings at the educator's discretion. The students may need to watch the film multiple times to be able to complete the Film Review adequately.

Educator's Talking Points for Dance of the Honey Bee

- Honey bees are similar to farm animals but are still wild creatures.
- Bees report back to the other bees in the hive what the world is like from miles away.
- The bee yard is like a hub of understanding of a whole area.
- The bees “tell” if the area has been farmed well or it is covered in pesticides.
- They also “tell” if the area has strong plant diversity or if it is weak.
- The color of the pollen they bring back in their “pollen baskets” depends on the type of flowers they visit in the wild.
- The bees bring back such small stores per individual bee but make enough honey and beebread to sustain life for the winter.
- Humans can cooperate with bees for mutual benefits.
- The world we live in is changing at an enormous speed and bees are struggling to change as quickly.
- The patterns of our everyday lives are changing; that affects the honey bees, as well.
- Humans can help bees as we would help ourselves.
- Bees and humans cannot live in a world of monoculture
- Bees need a specific type of landscape to thrive.

Wrapping Up

Host a final discussion about the film. Allow students to share their thoughts and film review notes. Encourage further discussion about any of the talking points from the film that inspire the students.

Review the **Final Presentation Formats** and encourage students to choose their final project. Continue to discuss the **Final Presentation Prompting Questions**. This is a good time to discuss how the students would answer one or more of the questions.

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?”**

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

Created by The Bee Cause with expert beekeeper and owner of Queen & Comb, Tom Knaust



MATERIALS & RESOURCES

- **I Speak for The Bees!** Student Workbook -- each student should have a printed copy
- Access to the internet via computer or iPad
- Access to the [Virtual Field Trip - Spring Hive Inspection with The Bee Cause Project + Queen & Comb](#)
- One (1) large piece of chart paper
- Writing tools
- Four (4) honey straws (labeled A, B, C, D)* or Four (4) different types of honey
- Small paper plate
- Flower images for the honey tasting experience - can be printed or shared digitally
- * We used the [Food Doesn't Grow in Supermarkets Activity Kit](#) from [Nature Watch](#), you may use any 4 different varieties of honey.

Summary and Details

This virtual field trip is a spring hive inspection with an expert beekeeper. Tom Knaust shows us how to look for a laying queen, check the food stores, and gauge the overall health of the hive. Students will learn best practices for modern backyard beekeeping. They will complete a **Best Practices Observation Checklist** as they watch the hive inspection looking for evidence of best practices as the beekeeper works. Students may also participate in an optional honey tasting experience.

What is a Virtual Field Trip?

The students watch a video as though they are in the field working alongside the beekeeper for a live honey bee inspection. The students will engage with the content in their classrooms by completing the **Best Practices Observation Checklist** while watching the field trip video.

Grouping for a Virtual Field Trip

The Virtual Field Trip and Honey Tasting Experience could be completed as a whole class activity or in their small groups.

Implementing a Virtual Field Trip

The educator will begin by leading a discussion about Best Practices using the following information as talking points.

What are Best Practices?

Best practices are methods or techniques that are considered 'best' because they produce results that are far better than any other methods or techniques. These methods or techniques have been tested time and time again and each time they prove to be most effective. For example, if your teacher assigns homework, it is best practice for you to complete it and turn it in on time. This will produce a superior outcome because other methods, (e.g. not completing homework or turning it in late) will result in a poor outcome.

Best practices are important for beekeepers to use at all times. Setting up a beehive is expensive and bees are a valuable commodity. A beekeeping starter kit with the hive body, smoker, suit and veil, hive tool, gloves, and queen extruder is approximately \$600 and the package of bees can cost another \$200. A queen bee alone can cost up to \$100!

Cost is only one factor when beekeepers consider **best practices**. While honey bees are docile creatures, they will sting if they are threatened or if their queen is threatened. A trained beekeeper will always move with slow purposeful movements when working with the bees.

Beekeepers also keep bees for the honey and other products that humans can enjoy from the hive. They use **best practices** when gathering honey with regards to how much they can take and not cause harm to bees while harvesting the products.

Reread **A Beekeeper's Equipment** (pages 42-43) and **Beekeepers at Work** (pages 44-45) in **Bees: A Honeyed History** with the students. Discuss items from these sections that would be considered best practices for a beekeeper. Create an ongoing list of Beekeeping Best Practices using a large piece of chart paper as a group.

Introduce the **Best Practices Observation Checklist** to the students in the **I Speak for The Bees!** Student Workbook. The students will check off each item as they watch the video. Encourage the students to record detailed observations on the checklist as they see or do not see evidence of each item. This will provide a better discussion at the end of the video.

Wrapping Up

Host a final discussion of the Virtual Field Trip. Allow students to share their notes from the video. Encourage any final discussion about Best Practices in beekeeping or any other examples that are appropriate to the student's personal lives.

At this point, the students should make a choice of Final Presentation Formats and should be able to address at least one of the Final Presentation Prompting Questions.

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?"**

Implementing the Honey Tasting Experience (OPTIONAL)

The students will need their **I Speak for The Bees!** Student Workbook, the four straws of labeled honey, paper plates, and flower images. For this Honey Tasting Experience, the students have four different varieties of honey and a small paper plate. They will use their senses to fully experience the four varieties of honey.

The educator can use any four varieties of honey that are available in the area. The names of the kinds of honey will not be revealed until the end of the activity so that the students can come up with their own creative names based on color, smell, and taste. The four different varieties that we use are California Orange Blossom Honey, Buckwheat Blossom, Pacific Northwest Blackberry Blossom, and Western Wildflower Honey.

Follow these steps in order with each honey straw one at a time and the student will record their responses in the Student Workbook.

Step 1. Inspect the honey straw. Hold it up to a light. What colors do you see? Write down words that describe what you see on your worksheet for “SIGHT” in the column of the straw you are exploring. Examples: sunshine, caramel, bright, lemon, dark, yellow, black, bubbly, popsicle, creamy, blush, maroon, coral, salmon

Step 2. Watch the honey move. Cut or bite the end of your honey sticks, one at a time. Squeeze a little honey onto a paper plate. What do you notice about the way it moves? Is it fast or slow? That is called the viscosity: higher viscosity means it has a greater resistance to flow, lower viscosity means it moves quickly.

Step 3. Smell the honey. What do you observe with your nose? Write down words that describe the smell. Examples: lavender, woody, fruity, jammy, citrus, floral, dusty, smoky, spicy, berry, earthy, hay

Step 4. Taste the honey. Write down the words that describe the taste. Example: raisin, smoke, marshmallow, pineapple, coffee, sugar, sunrise, earth, nut, candy, bite, pucker

Step 5. Combine your words to create your own name for each honey straw flavor. (Think MadLibs) Examples: Sunshine Lavender Smoke, Citrus Jammy Candy, Spicy Marshmallow Puff. Write your Silly Name on your worksheet.

Step 6. Follow the above steps for each of the straws of honey. Then write the Real Name of the honey on the worksheet after you complete the honey tasting. The flower images of the different types of flowers that the honey comes from should be available to the students. This may be helpful to them to think about each flavor as they taste it.

A = California Orange Blossom

B = Western States Wildflower

C = Buckwheat Blossom

D = Pacific Northwest Blackberry Blossom



ORANGE BLOSSOM



BUCKWHEAT BLOSSOM



WILDFLOWER BLOSSOM



BLACKBERRY BLOSSOM

FINAL PROJECT:

I Speak for the Bees! Presentation

Students should choose one of the following ways to present their information using all of their research and other information from the ***I Speak for The Bees!*** Student Workbook. They should incorporate any pertinent information from the text, film, and virtual field trip in the final presentation.

The students will use the **Final Project Scoring Rubric** as a guide for final expectations for this project. The students have this document in their ***I Speak for The Bees!*** Student Workbook. The educator should review this document with the students for clarity and expectations.

The educator will indicate which media platforms and digital components are available to the students for this project. It is at the discretion of the educator if the students will complete this project in small groups or individually

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

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?”***

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

Next Generation Science Standards

3rd Grade	4th Grade	5th Grade
<u>3-LS1-1</u> <u>3-LS2-1</u> <u>3-LS3-1</u> <u>3-LS3-2</u> <u>3-LS4-2</u> <u>3-LS4-4</u> <u>3-ESS2-1</u>	<u>4-LS1-1</u> <u>4-LS1-2</u> <u>4-ESS3-1</u> <u>4-ESS3-2</u>	<u>5-LS1-1</u> <u>5-ESS3-1</u>

ELA Common Core Standards

3rd Grade	4th Grade	5th Grade
<u>CCSS.ELA-LITERACY.RI.3.1</u> <u>CCSS.ELA-LITERACY.RI.3.2</u> <u>CCSS.ELA-LITERACY.RI.3.3</u> <u>CCSS.ELA-LITERACY.RI.3.4</u> <u>CCSS.ELA-LITERACY.RI.3.5</u> <u>CCSS.ELA-LITERACY.RI.3.6</u> <u>CCSS.ELA-LITERACY.RI.3.7</u> <u>CCSS.ELA-LITERACY.W.3.1</u> <u>CCSS.ELA-LITERACY.W.3.1.A</u> <u>CCSS.ELA-LITERACY.W.3.1.B</u> <u>CCSS.ELA-LITERACY.W.3.2</u> <u>CCSS.ELA-LITERACY.W.3.6</u> <u>CCSS.ELA-LITERACY.W.3.7</u> <u>CCSS.ELA-LITERACY.W.3.8</u> <u>CCSS.ELA-LITERACY.SL.3.1</u> <u>CCSS.ELA-LITERACY.SL.3.1.A</u> <u>CCSS.ELA-LITERACY.SL.3.1.B</u> <u>CCSS.ELA-LITERACY.SL.3.1.C</u> <u>CCSS.ELA-LITERACY.SL.3.1.D</u> <u>CCSS.ELA-LITERACY.SL.3.2</u> <u>CCSS.ELA-LITERACY.SL.3.4</u> <u>CCSS.ELA-LITERACY.SL.3.5</u> <u>CCSS.ELA-LITERACY.SL.3.6</u> <u>CCSS.ELA-LITERACY.L.3.4</u> <u>CCSS.ELA-LITERACY.L.3.4.D</u>	<u>CCSS.ELA-LITERACY.RI.4.1</u> <u>CCSS.ELA-LITERACY.RI.4.2</u> <u>CCSS.ELA-LITERACY.RI.4.3</u> <u>CCSS.ELA-LITERACY.RI.4.4</u> <u>CCSS.ELA-LITERACY.RI.4.5</u> <u>CCSS.ELA-LITERACY.RI.4.6</u> <u>CCSS.ELA-LITERACY.RI.4.7</u> <u>CCSS.ELA-LITERACY.RI.4.9</u> <u>CCSS.ELA-LITERACY.W.4.1</u> <u>CCSS.ELA-LITERACY.W.4.1.A</u> <u>CCSS.ELA-LITERACY.W.4.1.B</u> <u>CCSS.ELA-LITERACY.W.4.2</u> <u>CCSS.ELA-LITERACY.W.4.6</u> <u>CCSS.ELA-LITERACY.W.4.7</u> <u>CCSS.ELA-LITERACY.W.4.8</u> <u>CCSS.ELA-LITERACY.W.4.9</u> <u>CCSS.ELA-LITERACY.SL.4.1</u> <u>CCSS.ELA-LITERACY.SL.4.1.A</u> <u>CCSS.ELA-LITERACY.SL.4.1.B</u> <u>CCSS.ELA-LITERACY.SL.4.1.C</u> <u>CCSS.ELA-LITERACY.SL.4.1.D</u> <u>CCSS.ELA-LITERACY.SL.4.2</u> <u>CCSS.ELA-LITERACY.SL.4.3</u> <u>CCSS.ELA-LITERACY.SL.4.4</u> <u>CCSS.ELA-LITERACY.SL.4.5</u> <u>CCSS.ELA-LITERACY.SL.4.6</u> <u>CCSS.ELA-LITERACY.L.4.4</u> <u>CCSS.ELA-LITERACY.L.4.4.A</u>	<u>CCSS.ELA-LITERACY.RI.5.1</u> <u>CCSS.ELA-LITERACY.RI.5.2</u> <u>CCSS.ELA-LITERACY.RI.5.3</u> <u>CCSS.ELA-LITERACY.RI.5.4</u> <u>CCSS.ELA-LITERACY.RI.5.5</u> <u>CCSS.ELA-LITERACY.RI.5.6</u> <u>CCSS.ELA-LITERACY.RI.5.7</u> <u>CCSS.ELA-LITERACY.RI.5.9</u> <u>CCSS.ELA-LITERACY.W.5.1</u> <u>CCSS.ELA-LITERACY.W.5.1.A</u> <u>CCSS.ELA-LITERACY.W.5.1.B</u> <u>CCSS.ELA-LITERACY.W.5.2</u> <u>CCSS.ELA-LITERACY.W.5.6</u> <u>CCSS.ELA-LITERACY.W.5.7</u> <u>CCSS.ELA-LITERACY.W.5.8</u> <u>CCSS.ELA-LITERACY.W.5.9</u> <u>CCSS.ELA-LITERACY.SL.5.1</u> <u>CCSS.ELA-LITERACY.SL.5.1.A</u> <u>CCSS.ELA-LITERACY.SL.5.1.B</u> <u>CCSS.ELA-LITERACY.SL.5.1.C</u> <u>CCSS.ELA-LITERACY.SL.5.1.D</u> <u>CCSS.ELA-LITERACY.SL.5.2</u> <u>CCSS.ELA-LITERACY.SL.5.3</u> <u>CCSS.ELA-LITERACY.SL.5.4</u> <u>CCSS.ELA-LITERACY.SL.5.5</u> <u>CCSS.ELA-LITERACY.SL.5.6</u> <u>CCSS.ELA-LITERACY.L.5.4</u> <u>CCSS.ELA-LITERACY.L.5.4.</u>



WWW.THEBEECAUSE.ORG