

MeTEOR Performance Task

Fourth Grade

English Language Arts
To Bee or Not to Bee



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MeTEOR
CONNECTING THE DOTS

Performance Task Item: To Bee or Not To Bee-The Plight of the Bumble Bee

Part A:

Read the following overview of the honeybee and answer questions 1 - 4.

Honeybees live in colonies with one queen running the whole hive. Worker honeybees are all females and are the only bees most people ever see flying around outside of the hive. They forage for food, build the honeycombs, and protect the hive. Many species still occur in the wild, but honeybees are disappearing from hives due to colony collapse disorder. Scientists are not sure what is causing this collapse.

Honeybees are important pollinators for flowers, fruits, and vegetables. They live on stored honey and pollen all winter and cluster into a ball to conserve warmth. All honeybees are social and cooperative insects. Members of the hive are divided into three types. Workers forage for food (pollen and nectar from flowers), build and protect the hive, clean, and circulate air by beating their wings. The queen's job is simple—she lays the eggs that will spawn the hive's next generation of bees. There is usually only a single queen in a hive. If the queen dies, workers will create a new queen by feeding one of the worker females a special food called "royal jelly." This elixir enables the worker to develop into a fertile queen.

Queens regulate the hive's activities by producing chemicals that guide the behavior of the other bees. Male bees are called drones—the third class of honeybee. Several hundred drones live in each hive during the spring and summer, but they are expelled for the winter months when the hive goes into a lean survival mode.

NOTE: You may want to go to the following link to find the overview provided above and to read other interesting facts:

<http://kids.nationalgeographic.com/animals/honeybee/#honeybee-pink-flower.jpg>

1. Why are honeybees important to the ecosystem and our world according to the overview from the website?

2. What are the three types of hive members and what is each of their roles in the hive?

3. After reading this overview, add something to the KWL chart that you want to know about bees.

4. Divide into groups, each group will research one area about bees: After you research your area, you will create an informational poster about it. Remember, you will be using this poster to teach other students about your area.

Some research areas to consider:

Bee Communication and Pollination

Hive Members and How they Work Together

Bee Habitats- What's the hive? What must bees have to survive in their habitat?

Special Facts about Bees (these would be those things that do not fall in the other three categories)

Read “The Bee Blight” and answer questions 5 – 9.

5. What are some of the reasons listed in the article that may have caused more and more bees to die?

PART B:

Read “Abuzz Over Bees” and answer questions 10 – 12.

10. What is this article mostly about?

11. What is your personal opinion of urban beekeeping? Give at least three reasons that back up your opinion. A graphic organizer and rubric are provided to guide you.

12. What similarities and differences can be found in the articles “*Abuzz Over Bees*” and “*The Bee Blight*”? Fill out the Venn Diagram provided.

Part C:

Read “Bees Around the World Are in Trouble” and answer questions 13 and 14.

13. According to the article, what are some actions that General Mills has been doing to help the bee population? Evaluate their actions and get with a partner to discuss if you feel they will be effective to help the honey bee.

14. Cheerios removed the honey bee from its box to make people aware of the disappearance of honey bees. What can you infer from your prior knowledge and information you’ve learned that might be a benefit to General Mills for taking this action? What could be some problems for the company?

15. The articles have shown us how important bees are to rural (farming) areas. Below are several topics to debate. Your teacher will choose the topics and there will be a “pro” group and a “con” group. You will follow the roles and rules of a debate. The debate topics could be:

- “Should pesticides be banned completely in the United States?”
- “Should beekeeping be allowed in urban areas?”
- “Should businesses (like farmers or General Mills) be responsible for helping the bee population even if it has a negative effect on their business?”

Research your topic finding at least three key points for your side (pro- yes or con-no). You will also need to think of the points the other side could make so you can have a rebuttal to what they say.

Choose representatives from your group to create one of each of the three key points for your team’s argument and the other group members will be in charge of the rebuttal for the other side. There is a form to help you organize your ideas.

Please also review the debate rules before the event.

16. Why would flower seeds be important to help bees? Research why flowers are important to bees and then choose the seeds that would be the perfect combination that bees would love. Pretend that you are in charge of a designing a seed packet for a company (similar to what General Mills did). What kind of companies would you want to sponsor your seed packet project? Remember who your audience would be. How would you get the seeds out to the public? How would you stress the importance of the project? You may work in groups or partners during the research phase but each individual will design their own seed packet. You will also independently create a commercial to advertise your seed packet project. The rubric provided gives more details. You will need to include:

- a. Something drawing awareness to the bees
- b. A Catchy Title
- c. What flowers would be in your mix?
- d. Make it appealing and creative so people will want to plant the seeds.

ARTICLES/STUDENT MATERIALS**“The Bee Blight”**

TOP: Bees in their hive. Photo by Sean Gallup. BOTTOM: Graphics by U.S. Department of Agriculture.

Issue Overview: Bee blight

Over the last 10 years, bees have been dying more quickly. That makes it more expensive to grow the crops that need them for pollination. Disease and poor nutrition are partly responsible. But those causes are difficult to fix. Another possible cause is chemicals. Scientists are still debating how dangerous certain chemicals are to bees. But that has not stopped bee lovers from blaming them. Some countries have even made it against the law to use certain pesticides.

The Situation

Beekeepers in the U.S. have noticed a big problem. Since the winters of 2006-2007, more bees have been dying every year.

Environmental groups blame bee deaths on neonicotinoids. These are chemicals known as pesticides. They are often applied to seeds to fight off insects while plants grow. Companies that make these chemicals say they are being unfairly targeted.

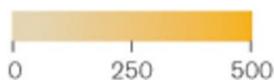
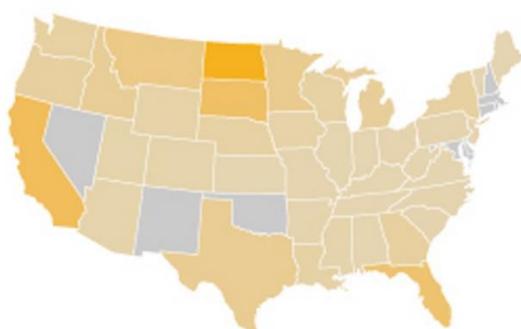
Studies have found conflicting results. In 2013, the European Union passed a law to stop the use of three neonicotinoids. In Canada, the government has passed laws to limit the use of them. Meanwhile, the U.S. government says farmers should not use some of the pesticides in certain places. They may be harmful in fields where bees have been brought in to pollinate a crop. The government has called for more studies on the effects of pesticides.

The Background

A beehive is a symbol of community in Shakespeare's plays. In the Book of Mormon, honeybees represent hard work. The Quran Muslim holy book praises bees for making honey. Farmers raising crops have long relied on bees to help fertilize plants. Without them, it would be difficult to grow enough food for everyone.

Where the Bees Are and Where They're Needed

2014 honey-producing bee colonies



2014 value of crops that depend on honeybee pollination for at least 70% of their worth



Modern growers depend on honeybees. In the U.S., beekeepers travel the country. They follow the growing seasons. Honeybee pollination adds billions of dollars in value to U.S. crops each year.

Beekeepers began seeing their huge losses in 2006. Scientists think a number of causes are responsible. Diseases and poor nutrition are harming the bees. Weed killers are reducing the areas where they can live. Another danger is a farming practice called mono-cropping. This is when a farmer grows only one plant over a large area year after year. Mono-cropping may make it hard for bees to eat enough different plants.

The Argument

The argument about the bees is part of a larger battle over the future of farming. Supporters of modern farming are not worried about the dying bees. They believe this is simply an added

cost of making food. They note that the bee losses have not affected harvests or food prices. This group is against pesticide restrictions. They think a law against pesticides will make it harder for farmers to grow enough crops. They also say it might not help the bees. Instead, farmers might go back to using older, more dangerous chemicals. This would be even worse for the bees.

Environmentalists are very troubled by all the bee deaths. They see them as a sign of big problems with how food is grown. They believe that modern farming needs to change. This group supports reduced pesticide use. They also support new ways of managing land. For example, they think some land should be set aside to grow weeds. This way the bees will have more to feed on. This group thinks changes are necessary to make bee colonies healthy again. Many people in this group support farming without using pesticides.

“Abuzz Over Bees”

There's a buzz among bee lovers around the world.

More and more cities worldwide are allowing the practice of urban beekeeping. Los Angeles may soon do the same. LA beekeepers want city council members to consider changing a law. The change would allow beekeeping in the city's residential areas. The council has requested a study of the issue. The study will help leaders determine whether to allow the practice.

Meanwhile, Los Angeles is abuzz with debate.

Supporters of urban beekeeping argue that the practice would provide honeybees with much-needed protection. Honeybees around the world are suffering from colony collapse disorder (CCD). In a colony suffering from CCD, all of the adult honeybees suddenly die. Experts have not been able to find an exact cause.

Rob McFarland is the leader of a group called HoneyLove.org. McFarland says that Los Angeles is the perfect place to care for honeybees and possibly fight CCD.

"LA has [the perfect] climate and a ton for bees to [feed] on," McFarland said.

Supporters also argue that urban beekeeping is a great opportunity for businesses. Tyson Kaiser is an LA beekeeper. Kaiser sells honey from his backyard bee boxes. The honey sells for up to \$110 a gallon (3.7 liters). Kaiser also removes unwanted wild hives from around the city. He places them with "hive hosts." These hosts let Kaiser keep bees at their homes. In exchange, they receive half the honey their hives produce.

But not everyone agrees that keeping bees in residential areas is a good idea.

Some people argue that urban beekeeping is dangerous. They say it can attract killer bees. Killer bees have been known to attack people. They can chase a person up to a half mile (about .8 kilometer). Experts say that killer bees are already thriving in walls and trees around LA. They add that the wild bees relocated by companies like Kaiser's have at least some killer bee genes.

Eric Mussen is a bee expert. "To just haul [wild bees] out of the fences and stick them in the backyard—that's not a good idea," Mussen said.

Those who work with wild bees say that the concerns are overblown. They admit that wild bees in LA do have some killer bee genes. But they say that the danger has been reduced by years of mating with local bees.

Ruth Askren works to relocate wild hives all over the city. "If we really had serious [problems with killer] bees," Askren said, "people would be chased down the street every day."

Los Angeles city council members are following the debate. They are waiting for results of the study. Then, they will decide whether or not to change the law.

“Bees Around the World are in Trouble”



Boxes of Cheerios pictured in a grocery store. Photo: Mike Mozart/Flickr

Bees are disappearing in the wild. It is happening all over the world. The Cheerios bee is also gone from his spot on cereal boxes. He is a honeybee named Buzz.

General Mills makes Cheerios. The company took the bee's picture off of its boxes. It wanted to make people think about helping bees. Many bees are dying. They are having trouble because their homes are being taken over. Some are getting sick. Others are hurt by bug spray.

The Cheerios Company also wants to sell more cereal. Getting people to talk about bees can help with that. The company has been sending out packs of flower seeds. It is to get people to plant flowers for bees. The company says it has given out many seeds.

Working Together For the Bees

Numbers of bees have been falling for 20 years. The government and conservationists have stepped in to help. Conservationists are people who protect plants and animals.

It can be hard to know what big companies should do to help the insects. General Mills makes Cheerios and other things. Much of cereal comes from plants in fields. General Mills needs insects for the plants to grow. So helping the bees is also good for the company.

Pollinators can be insects or animals. They move among flowers and carry pollen. Spreading the pollen allows the plants to make seeds. Then new plants grow from the seeds.

Most flowers need animals or insects to move pollen, says Elaine Evans. She studies bees. "Most of these pollinators are bees," she says.

How the Honeybee Helps All Bees

There are many kinds of bees in the United States. While some are doing OK, others are disappearing.

The ads for Cheerios use honeybees. It is for the "Honey Nut Cheerios" kind of cereal. Honeybees are raised by beekeepers. They are doing better than wild bees. General Mills is using the honeybee to help wild bees.

The company said honeybees might be better off than other insects. Still, General Mills wants to do what it can for all bees, it said. Helping bees is good for growing food, the company said.

Honeybees are not quite fine, Evans says.

There are enough honeybees, but they have been getting sick more, she says. Beekeepers are losing bees, she says. We will have to wait and see how people and companies can help all bees. Some people say the government should do more to help bees, too.



K W L (Modified)

What is the concept?

What I know about:

- 1.
- 2.
- 3.
- 4.

What I WANT to know or
WONDER about or
think I WILL learn:

- ?
- ?
- ?
- ?

How I might FIND OUT about . . .

- ⇒
- ⇒

What have I learned?

-
-
-

POSTER RUBRIC

CATEGORY	5	4	3	2	1	Points Earned
Creativity/Originality	The poster shows a very original presentation of the materials which captures the viewer's attention and shows that the student went over and beyond the requirements, which were all met and exceeded. A great deal of time was spent on creativity.	The poster shows a lot of originality; good variety and blending of materials. The poster is very interesting to the viewer. The student spent a lot of time on the work and most of the requirements were met. A lot of time was spent on creativity.	The poster has some originality and variety of materials. Some but not all of the requirements were fulfilled. It shows some creativity and that a moderate amount of time was taken to create the poster. Viewers have some interest.	The poster has little originality or variety of materials. Few of the requirements are met. It shows little creativity and that a minimum amount of time was taken to create the poster. Viewers have little interest.	The poster has no originality. Insufficient use of materials. None of the requirements were met. It shows no creativity and that almost no time was taken to create the poster. Viewers have no interest.	
Quality of Poster Presentation	The poster is effective in relating all of the topics and requirements. Physical appearance of project shows attention to details in terms of lettering, organization, typing proofreading, neatness, picture & art labels, etc.	The poster is interesting and adequately addresses the requirements and topics. Good physical appearance. Minor flaws in details.	The poster is somewhat interesting and vaguely addresses the requirements and topics. Appearance is not very appealing. Moderate errors in details.	The poster is not interesting and barely addresses the requirements and topic. Some vital elements are missing. Physical appearance is not appealing. Major errors in details.	The poster is not interesting and badly done and does not meet the requirements or topic. Vital elements are incomplete or not appropriate. Unappealing with extreme errors in details.	

Grading Rubric for a Power Point Project

	5	4	3	2	1
Content	Content is accurate and information is presented in a logical order.	Content is accurate but some information is not presented in a logical order, but is still generally easy to follow.	Content is accurate but information is not presented in a logical order, making it difficult to follow.	Content is questionable and information is not presented in a logical order, making it difficult to follow.	Content is inaccurate and information is not presented in a logical order, making it difficult to follow.
Slide Creation	Presentation flows well and logically. Presentation reflects extensive use of tools in a creative way. Correct number of slides.	Presentation flows well. Tools used correctly. Correct number of slides. Overall presentation is interesting.	Presentation flows well. Some tools used to show acceptable understanding. Correct number of slides.	Presentation is unorganized. Tools are not used in a relevant manner. Lacking in number of slides.	Presentation has no flow. No tools used. Insufficient number of slides.
Slide Transitions	Transitions are smooth and interesting. Transitions enhance the presentation.	Smooth transitions are used on most slides.	Smooth transitions are used on some slides.	Very few transitions are used and/or they distract from the presentation.	No transitions used.
Pictures, Clip Art & Background	Images are appropriate. Layout of images is pleasing to the eye.	Images are appropriate. Layout is cluttered.	Most images are appropriate.	Images are inappropriate.	No images.
Mechanics	No spelling errors. No grammar errors. Text is in authors' own words.	Few spelling errors. Few grammar errors. Text is in authors' own words.	Some spelling errors. Some grammar errors. Text is in authors' own words.	Some spelling errors. Some grammar errors. Most of text is in authors' own words.	Many spelling errors and/or text is copied.
Technology Connection	Comprehensive use of technology is apparent.	General understanding of technology.	Acceptable understanding of technology.	Little understanding of technology.	No understanding of technology.

Opinion Writing Graphic Organizer

Topic: Urban Beekeeping

Opinion

Reason 1

Reason 2

Reason 3

Evidence 1

Evidence 2

Evidence 3

Opinion Restated in Different Words

Opinion Writing Rubric

Scoring Elements	Not Yet		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Focus/Opinion	<ul style="list-style-type: none"> • Responds to some or no parts of the prompt • Demonstrates little to no understanding of topic/text 		<ul style="list-style-type: none"> • Responds to most parts of the prompt • States an opinion that demonstrates limited understanding of topic/text 		<ul style="list-style-type: none"> • Responds to all parts of the prompt • States an opinion that demonstrates an understanding of topic/text 		<ul style="list-style-type: none"> • Responds skillfully to all parts of the prompt • States an opinion that demonstrates an insightful understanding of topic/text
Organization	<ul style="list-style-type: none"> • Organizes with no evidence of paragraph structure • Uses no linking words 		<ul style="list-style-type: none"> • Organizes ideas and information in an incomplete paragraph structure (e.g., missing conclusion) • Uses some linking words to connect reasons to opinion but simplistically or ineffectively 		<ul style="list-style-type: none"> • Organizes ideas and information using a clear topic sentence, details, explanation, and concluding sentence • Uses linking words and phrases to connect reasons to opinion 		<ul style="list-style-type: none"> • Organizes ideas and information into logical, coherent paragraphs that are clear to the reader • Uses linking words and phrases skillfully to connect reasons to opinion
Support/Evidence	<ul style="list-style-type: none"> • Does not support opinion with reasons • Provides no or inaccurate explanation of how reasons support opinion 		<ul style="list-style-type: none"> • Supports opinion with minimal or irrelevant reasons • Provides some explanation of how reasons support opinion 		<ul style="list-style-type: none"> • Supports opinion with relevant reasons • Provides clear explanation of how reasons support opinion 		<ul style="list-style-type: none"> • Supports opinion skillfully with substantial and relevant facts, details, and/or reasons • Provides explanations/analysis of how evidence supports opinion

<p>Language</p>	<ul style="list-style-type: none"> • Uses little to no correct sentence structure • Demonstrates limited understanding of grade-level appropriate conventions, and errors interfere with the meaning • Uses no academic or domain specific vocabulary 	<ul style="list-style-type: none"> • Uses some correct but repetitive sentence structures • Demonstrates some grade-level appropriate conventions, but errors may obscure meaning • Uses limited academic and/or domain-specific vocabulary for the audience and purpose 	<ul style="list-style-type: none"> • Uses correct and varied sentence structures • Demonstrates grade-level appropriate conventions; errors are minor and do not obscure meaning • Uses academic and domain specific vocabulary appropriate for the audience and purpose 	<ul style="list-style-type: none"> • Uses purposeful and varied sentence structures • Demonstrates creativity and flexibility when using conventions (grammar, punctuation, capitalization, and spelling) to enhance meaning • Uses precise and sophisticated academic and domain-specific vocabulary appropriate for the audience and purpose
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“To Bee or Not To Bee”

Using the articles you have read for reference and text evidence, fill out the Venn diagram with similarities and differences of the information presented about bumblebees.

“The Bee Blight”

“Abuzz Over Bees”

Similarities

Name

Date

“To Bee or Not To Bee”

General Mills removed the honeybee from their Honey Nut Cheerios box. Do you think this was a smart idea? Fill out this chart to make a list of the benefits (good things) and disadvantages (problems) they might encounter by changing the cereal box.

Benefits

Disadvantages

“THE GREAT DEBATE”

These are the rules and roles of the debate. Be sure that you follow the debate rules and decide before the debate, each group members' role.

Opening Statement Presenter:

Gathers the main arguments into an introductory statement. Does not give specific information; just says "this is true because of A and B and C."

1. _____

Topic Presenters:

Presents the main arguments for the team. Each presenter gives specific details that **prove** A and B and C.

(2 or 3)

1. _____

2. _____

3. _____

Rebuttal Presenters:

Answers the arguments of the other team. These presenters must take notes as the other team is presenting their arguments and respond to every argument, using specific information to **disprove** them.

(1 or 2)

1. _____

2. _____

Closing Statement Presenter:

Presents the closing arguments for the team. Repeats the main idea for this and this and this reasons.

1. _____

Debate Rules

No put downs.

You must raise your hand if it's not your time to speak.

Teams lose 1 point for each interruption.

Teams lose 1 point for whispering while another speaker is talking.

Debate Time Limits

Opening statements for both sides = 3 minutes each

Arguments for both sides = 3 minutes each

Rebuttal conference = 1 minute

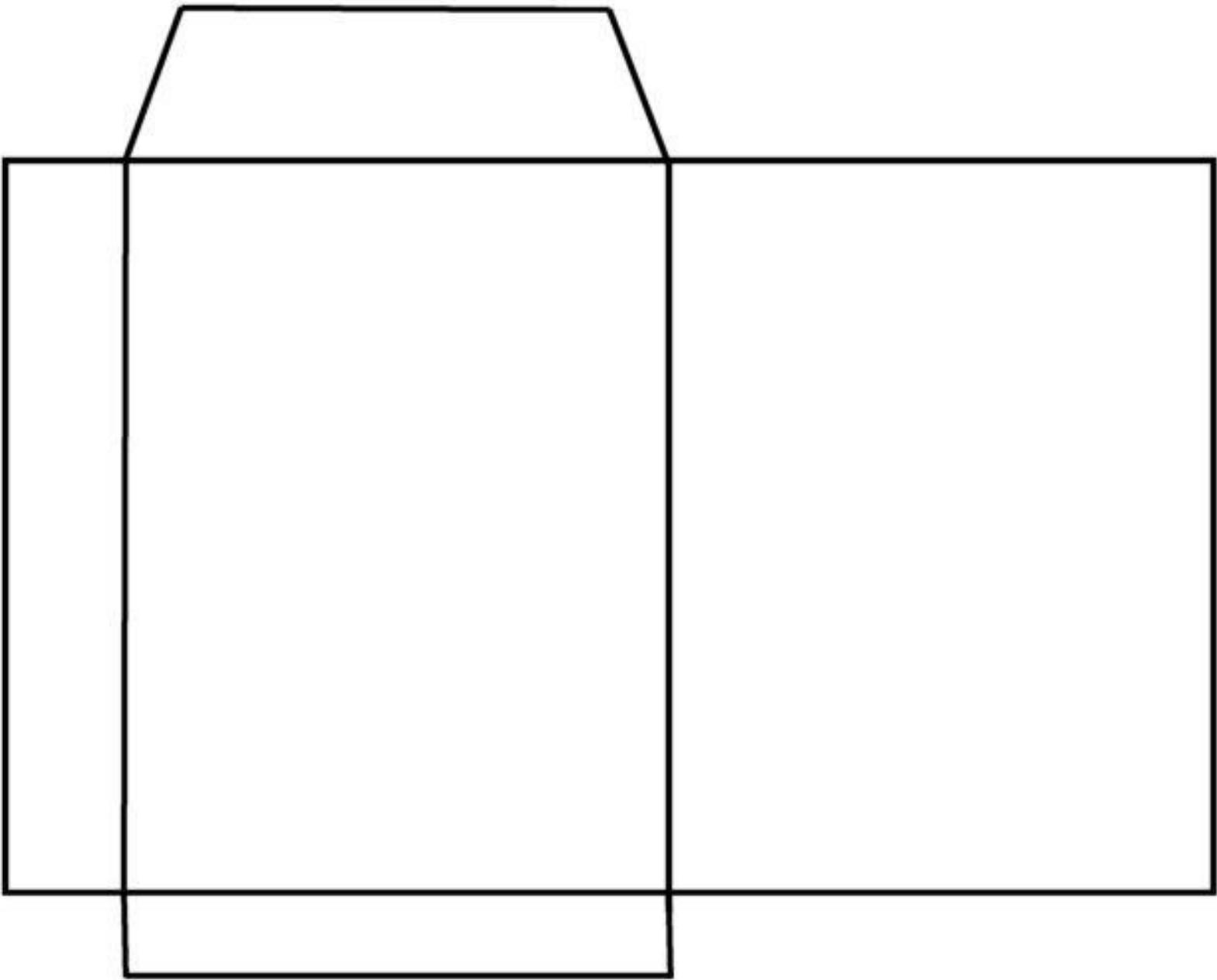
Rebuttals = 2 minutes each

Closing statements for both sides = 3 minutes each

DESIGN YOUR OWN SEED PACKET

Design a seed packet that would increase the awareness of the decline of bees. Be sure the seeds chosen would grow plants that would be good for bees, and make it appealing.

BE CREATIVE AND REMEMBER YOU WILL BE USING THIS TO
CREATE AWARENESS FOR BEES THAT ARE IN DANGER.



6. Create a television commercial for your seed project including all of the information found in the Rubric below:

	4	3	2	1
Oral Presentation	Was able to clearly explain the seed packet project and how it works. Answered all of the following: <ul style="list-style-type: none"> •Who is sponsoring? •What specific seeds are used? •Why is planting seeds important to the ecosystem and bees? 	Was mostly able to explain seed packet project and how it works. Answered all of the following: <ul style="list-style-type: none"> •Who is sponsoring? •What specific seeds are used? •Why is planting seeds important to the ecosystem and bees? 	Was partially able to explain seed packet project and how it works. Answered 2 out of 3 of the following: <ul style="list-style-type: none"> •Who is sponsoring? •What specific seeds are used? •Why is planting seeds important to the ecosystem and bees? 	Was not able to explain seed packet project and how it works. Answered 1 or none of the following: <ul style="list-style-type: none"> •Who is sponsoring? •What specific seeds are used? •Why is planting seeds important to the ecosystem and bees?
Commercial Appeal	Skit is the equivalent of a TV commercial, informative and persuasive. Themes are clearly used and demands consumer action.	Skit is very persuasive. Lacks a clear theme.	Skit is well done but lacks persuasion for using the seed packet.	Skit is not persuasive at all. No themes are taken advantage of.
Product Information	Information about seed packet is plentiful. Information is useful and presented creatively. Included logo and jingle.	A lot of information is given about seed packet. Not creative Enough. Included logo and jingle.	Some information about seed packet is given. Not very unique. Included either the logo or jingle, but not both.	No real information about seed packet is given. Included neither the logo or the jingle.
Seed packet project	Shows great effort, thought and creativity.	Shows much effort, thought and creativity.	Shows some effort, thought and creativity.	Shows little effort, thought or creativity.



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