



## GRADE 5 LITERACY IN SCIENCE: ECOSYSTEMS

### UNIT OVERVIEW

This unit is in alignment with the New York City Science Scope and Sequence, Unit 4 – Exploring Ecosystems—and is the final unit for Grade 5. It can be implemented in the latter part of the year (May/June). The final Performance Task is comprised of three parts: two reading tasks and an informative essay task, explaining how humans have had a negative effect on different ecosystems.

### TASK DETAILS

**Task Name:** Ecosystems

**Grade:** 5

**Subject:** Science

**Depth of Knowledge:** 3

**Task Description:** Students will study the impact humans have had on ecosystems. Students will then read two informational texts and a graph and write an informative/explanatory essay describing the negative effect humans have had on different ecosystems.

### Standards Assessed:

**W.5.2** Write informative/explanatory texts to examine and convey ideas and information clearly.

- a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Provide a concluding statement or section related to the information or explanation presented.

**RI.5.2** Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.

**RI.5.9** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

### Materials Needed:

“Born To Be Wild”

[http://www.ifaw.org/sites/default/files/education-publications/us\\_aaw10\\_guide\\_grades3-4.pdf](http://www.ifaw.org/sites/default/files/education-publications/us_aaw10_guide_grades3-4.pdf)

“Manatee – What is the Problem?”

[http://www.theinsite.org/earth/earth\\_es\\_manatee.html](http://www.theinsite.org/earth/earth_es_manatee.html)

“2011 Manatee Mortality – Circle Graph”

[http://www.savethemanatee.org/mortality\\_rescue\\_2011.pdf](http://www.savethemanatee.org/mortality_rescue_2011.pdf)



## TABLE OF CONTENTS

The task and instructional supports in the following pages are designed to help educators understand and implement Common Core–aligned tasks that are embedded in a unit of instruction. We have learned through our pilot work that focusing instruction on units anchored in rigorous Common Core–aligned assessments drives significant shifts in curriculum and pedagogy. Callout boxes and Universal Design for Learning (UDL) support are included to provide multiple entry points for diverse learners.

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Acknowledgements: This unit was developed by Common Core Fellow, Lucille Randazzo and a teacher team, Antoinette Theoharis-Flores, P.S. 121 Nelson A. Rockefeller; Diane SchianodiCola, P.S. 121 Nelson A. Rockefeller; Inbal Haiby, P.S. 121 Nelson A. Rockefeller; Maria DiSpirito P.S. 121 Nelson A. Rockefeller.



# GRADE 5 LITERACY IN SCIENCE: ECOSYSTEMS

## PERFORMANCE TASK

The following task assesses students' ability to independently read grade level texts and summarize those texts, identifying two or more main ideas. It also assesses students' ability to write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

The task is aligned with the New York City Science Scope and Sequence, Unit 4 Ecosystems. It can be administered over a four day period, with tasks for days one and two, lasting 45 minutes, and a task for day three lasting approximately one hour.

## **Student Directions –**

We have been studying ecosystems in science. Over the next few days you will have the chance to gather information about different ways humans can have a negative impact on different types of ecosystems by reading articles and a graph. You will then write an essay that incorporates information from these sources to inform readers about the topic.

The first text (day 1) you will read “Born to Be Wild” and learn about tigers. As you read, think about ways in which the ecosystems of tigers have been impacted by people. You will use this information when you write your essay. You will then summarize the text, identifying two or more main ideas and providing key details that support the main ideas.

In the second text (day 2) you will read “Manatee – What is the Problem?” and learn about manatees. You will also read a graph that identifies different ways that manatees die. As you read, think about ways in which the ecosystems of manatees have been impacted by people. You will use this information when you write your essay. You will then summarize the text, identifying two or more main ideas and providing key details that support the main ideas.

On the third day, you’ll have time to write your essay. As you write, remember everything you know about writing informative essays. Your essays should include the evidence you found in the articles and the graph. You’ll want to quote the text and reference important facts and details that will explain the topic to readers. As you’re reading the texts, use what you know about taking notes to get all the detailed information and specific references you want to use in your essay.

### **Task 1 –**

You’re going to read an article about tigers. Remember, the big question to keep in mind is this: What information is important? You may underline or jot in the margins as you read. When you finish reading, write a summary. Remember to mention more than one main idea and to explain how key details in the article support those main ideas. Remember to sometimes quote directly from the article to capture the most powerful parts exactly as they were written.

### **Task 2 –**

You’re going to read an article about manatees. You will also read a graph. Remember, the big question to keep in mind is this: What information is important? You may underline or jot in the margins as you read. When you finish reading, write a summary. Remember to mention more than one main idea and to explain how key details in the

article support those main ideas. Remember to sometimes quote directly from the article to capture the most powerful parts exactly as they were written.

### Task 3 –

You have read “Born to be Wild,” “Manatee – What is the Problem?” and the graph “2011 Manatee Mortality.” You have written summaries for both texts which include the main ideas and key supporting details. Integrate information from both texts and the graph to write a well organized, informative essay explaining how human activity has negatively affected organisms within ecosystems.

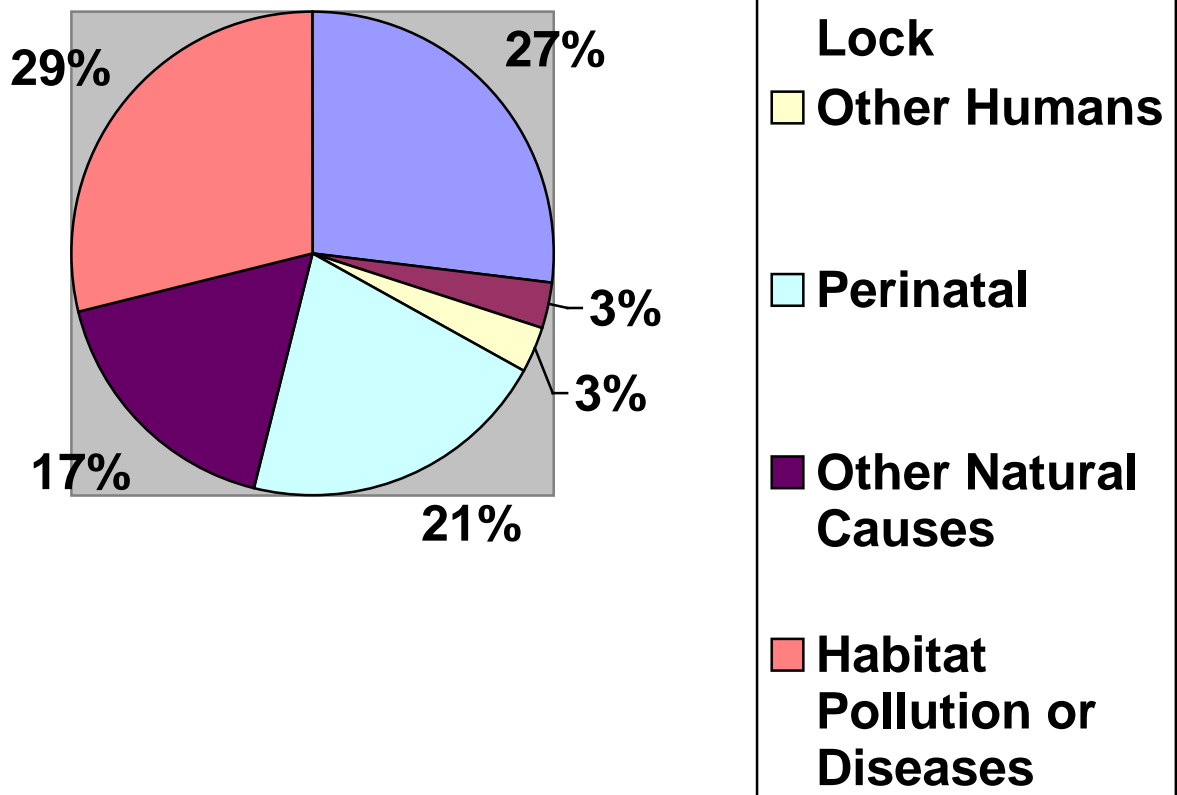
In your essay, be sure to:

- Introduce the topic clearly.
- Develop the topic with facts, details, quotations, or other information related to the topic.
- Use transition words and phrases to link ideas about the topic.
- Include content specific vocabulary when writing details to support the topic.
- Include a closing statement related to the topic.





## 2011 Manatee Mortality



Source: [http://www.savethemanatee.org/mortality\\_rescue\\_2011.pdf](http://www.savethemanatee.org/mortality_rescue_2011.pdf)



## Final Performance Task – Part 3

Name \_\_\_\_\_

Date \_\_\_\_\_

### **How has human activity negatively affected organisms?**

How has human activity negatively affected organisms?

You have read “Born to be Wild,” “Manatee – What is the Problem?” and the graph “2011 Manatee Mortality.” You have written summaries for both texts which include the main ideas and key supporting details. Integrate information from both texts and the graph to write a well organized, informative essay explaining how human activity has negatively affected organisms within ecosystems.

In your essay, be sure to:

- Introduce the topic clearly.
- Develop the topic with facts, details, quotations, or other information related to the topic.
- Use transition words and phrases to link ideas about the topic.
- Include content specific vocabulary when writing details to support the topic.
- Include a closing statement related to the topic.







# GRADE 5 LITERACY IN SCIENCE: ECOSYSTEMS RUBRIC

The following rubrics should be used to assess student work.

The reading rubric is aligned to standard RI.5.2 and should be used to assess Tasks 1 and 2, based on the articles “Born to Be Wild” and “Manatee – What is the Problem?”

The Writing Rubric should be used to assess Task 3 and is aligned to writing standard W.5.2, student informational essays, written in response to the question, “How has human activity negatively affected ecosystems?” The writing rubric also includes an assessment tool for standard RI.5.9. It is included in the writing rubric because this standard rates a student’s ability to integrate information from multiple sources and will be evident in the essay responses.

## Final Tasks 1 and 2 – Reading Rubric

	Level 1	Level 2	Level 3	Level 4
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            Should be assessed in the reading response summaries..</p>	<p>When asked to recap the main ideas in a text, the reader may refer to and talk about a very minor point or detail.</p>	<p>When asked to recap the main ideas in a text, the reader may state just one main idea from the text or may cite peripheral ideas rather than main ideas.</p>	<p>When asked to recap the main ideas in a text, the reader states two or more main ideas from the text.</p>	<p>When asked to recap the main ideas in a text, the reader crystallizes one or more overarching ideas that the text communicates, probably referring to ideas that are not explicitly stated.</p>
<p><b>Support</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            Should be assessed in the reading response summaries.</p>	<p>The reader may restate information from the text without explaining its connection to a main idea or ideas.</p>	<p>The reader explains how one or two key details support main ideas in the text.</p>	<p>The reader explains how the main ideas of the text are supported by key details.</p>	<p>The reader explains subtle as well as obvious connections between the main ideas and some related key details. The reader may also indicate the relative value of these details as support.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            Should be assessed in the reading response summaries.</p>	<p>The reader may recount parts of the text, but fails to synthesize them into a summary.</p>	<p>The reader summarizes the text but leaves out key elements or includes inaccuracies in the summary.</p>	<p>The reader summarizes the text. Summary includes multiple relevant details.</p>	<p>The reader provides an accurate summary of the whole text, embellishing this with some well-chosen details.</p>

## Final Task 3 – Writing Rubric

	Level 1	Level 2	Level 3	Level 4
<b>Focus-Standard 5.2.a</b> Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.	The writer does not introduce the topic (negative impact of humans on ecosystems).  Includes irrelevant ideas, reasons, facts, and/or details that are in no particular order.	The writer does not clearly state the topic (negative impact of humans on ecosystems).  May include irrelevant ideas, reasons, facts, and/or details that are in somewhat cohesive paragraphs.	The writer clearly states the topic (negative impact of humans on ecosystems).  Ideas, facts, and details are grouped into cohesive paragraphs.	The writer states the topic (negative impact of humans on ecosystems) with a compelling introduction.  Ideas, facts, and details are grouped into cohesive paragraphs that are strategically ordered to strengthen the essay.
<b>Standard 5.2.b</b> Develop the topic with facts, definitions, concrete details, quotations, or other examples related to the topic.	Includes facts that do not support the main topic.  Most of the facts used are incorrect.	Includes facts and details (from text) that mostly support the topic.  Makes inaccurate connections.	Includes facts and details (from text) that all support the topic and gestures towards citation by naming some sources.	Includes facts and details (from text) linking each piece of evidence to the topic as well as citing specific sources.
<b>Standard 5.2.c</b> Link ideas within and across categories of information using words, phrases, and clauses.	Does not use transitional words to link ideas and reasons.	Uses some transitional phrases yet may use the same phrase in every instance. May use some lower level phrases.	Uses a variety of transitional phrases to link ideas and reasons to supporting facts and details.	Uses sophisticated transitional phrases to link ideas and reasons to supporting facts and details.
<b>Standard 5.2.d</b> Use precise language and domain specific vocabulary to inform about or explain the topic.	Does not use appropriate language to inform about the topic.	Attempts to use precise language and domain specific vocabulary to inform about the topic.	Uses precise language and domain specific vocabulary to inform about the topic.	Uses a variety of domain specific vocabulary to inform about the topic.
<b>Standard 5.2.e</b> Provide a concluding statement or section related to the information or explanation presented.	Ends the essay without a sense of closure.	Provides a concluding statement that is not clearly related to the topic.	Provides a concluding statement related to the topic.	Provides a compelling concluding statement that builds on the topic and engages the audiences.
<b>Integrating R.I. Standard 5.9:</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. Should be assessed in the final task essay.	Reader fails to integrate information from several texts; (Manatee/Tiger/Graph) only uses one source.	The reader minimally integrates information from several sources (Manatee/Tiger/Graph) and/or may integrate information with inaccuracies.	The reader integrates explicit information from several sources (Manatee/Tiger/Graph) to write about the topic knowledgeably.	The reader is able to integrate information from several sources (Manatee/Tiger/Graph) and integrates both implicit and explicit information to write about the topic knowledgeably.



# GRADE 5 LITERACY IN SCIENCE: ECOSYSTEMS

## ANNOTATED STUDENT WORK

This section contains annotated student work at a range of score points and suggested next steps for students. The student work shows examples of understandings and misunderstandings of the task.

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Reading Task 1**

Tigers are one of Earth’s most amazing animals. Each tiger has a different pattern of stripes that help the tiger hide in its habitat, the forests and grasslands. These big, striped cats have been a symbol of beauty, charm, luck and power. Different types of tigers once lived in habitats across Asia. Now wild tigers only live in certain smaller areas.

In the article “Born to be Wild” it says tigers are important to the ecosystems. Tigers are the important meat eaters, or carnivores. Tigers love to eat deer and wild pigs. Tigers do this and it keeps the deer and wild pig populations equalized. Tigers hunt the animals and it keeps the deer and pig population from growing too large.

In the article it also said tigers are endangered animals. They are endangered because only 3000 tigers remain in the wild. Hunters are illegally poaching, poisoning, trapping, and shooting tigers. In addition, as habitat fragmentation increases, tigers have a harder time surviving. People are killing tigers causing them to become endangered.

**Comment [L1]:** Summary of the main idea – tiger population and habitat are decreasing (RI.5.2 Summarizing)

**Comment [L2]:** Main Idea (RI.5.2 Main Idea)

**Comment [L3]:** Key detail (RI.5.2 Key Detail)

**Comment [L4]:** Key detail (RI.5.2 Key Detail)

**Comment [L5]:** Key detail (RI.5.2 Key Detail)

**Comment [L6]:** Key Detail that supports subtle connection to main idea (RI.5.2 Key Detail)

**Comment [L7]:** Main idea (RI.5.2 Main Idea)

**Comment [L8]:** Key detail (RI.5.2 Key Detail)

**Comment [L9]:** Key detail (RI.5.2 Key Detail)

**Comment [L10]:** Key Detail that supports subtle connection to the main idea (RI.5.2 Key Detail)

**Comment [L11]:** Summary of the main idea (RI.5.2 Summarizing)



**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Scoring Guide**

**Summary Overall Level 4 – This student work sample provides an example of a score point 4 for Reading Standard 5.2.**

<b>Criterion and Score Point</b>	<b>Evidence</b>
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>Student identified two main ideas, the importance of tigers to the ecosystem (inferred) and the reasons they are endangered (stated).</p> <p>Student crystallized the main ideas by stating “different types of tigers once lived in habitats across Asia. Now wild tigers only live in certain smaller areas.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>The student explains subtle as well as obvious connections between the main ideas and related key details by referring to the tiger’s role in population stabilization and habitat fragmentation.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>Student provides an accurate summary of the text that is supported by well-chosen key details.</p>

**Summary of student work** – Student A demonstrated mastery of reading standard RI.5.2. The summary identified two or more main ideas, and both main ideas were supported by many relevant details that were strategically selected to support the main ideas. Connections to the main ideas were based on information both inferred and explicitly stated in the text.

**Next steps for instruction** – Support the student by indicating the relative value of the supporting details in the summary. For example, the use of language such as “the most important way...”.

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Reading Task 2**

Manatees are a threatened species even though they have no natural enemies in the wild. There are two main reasons for this, natural causes and the actions of people. In the article, "What's the Problem", it said that Manatees need to live in warm water, if the water gets too cold, manatees can get diseased. Also manatees only give birth every two to five years.

In the article, "What's the Problem", it also said that people cause lots of trouble for manatees. To prove this the article said that manatees get entangled in fishing nets, or in other fishing gear used by people. When people toss fishing hooks in the water, the manatees think its food and eat the hooks. That causes the manatee to die. When people build canal locks and flood control structures, a manatee can get caught in one and get crushed and/or drowned. Peoples' creations harm many animals such as the manatees.

I found out in the article that manatees are losing their habitat. Run-off from fertilizers and herbicides impact the food sources that the manatees eat. Development on the waterways also has an impact on the food sources that the manatees eat. Without food, manatees cannot survive.

**Comment [L12]:** Overarching main idea (RI.5.2 Main Idea)

**Comment [L13]:** Main Idea (RI.5.2 Main Idea)

**Comment [L14]:** Key detail (RI.5.2 Key Detail)

**Comment [L15]:** Key detail support (RI.5.2 Key Detail)

**Comment [L16]:** Key detail (RI.5.2 Key Detail)

**Comment [L17]:** Restates main idea (RI.5.2 Main Idea)

**Comment [L18]:** Key detail (RI.5.2 Key Detail)

**Comment [L19]:** Key detail (RI.5.2 Key Detail)

**Comment [L20]:** Key detail (RI.5.2 Key Detail)

**Comment [L21]:** Key detail (RI.5.2 Key Detail)

**Comment [L22]:** Key detail (RI.5.2 Key Detail)

**Comment [L23]:** Overarching main idea (RI.5.2 Main Idea)

**Comment [L24]:** Key detail (RI.5.2 Key Detail)

**Comment [L25]:** Key detail (RI.5.2 Key Detail)

**Comment [L26]:** Key detail (RI.5.2 Key Detail)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Scoring Guide**

**Summary Overall Level 4 – This student work sample provides an example of a score point 4 for Reading Standard 5.2.**

Criterion and Score Point	Evidence
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>Student explicitly states the main ideas of the text, that manatees are threatened and that the reasons are natural causes and human impact. The student also explains overarching ideas that the text communicates such as “manatees are a threatened species even though they have no natural enemies.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>Student explains subtle as well as obvious connections between the main ideas and key details by stating “Peoples’ creations harm many animals such as the manatees.”</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Tasks 1 and 2)</p> <p>Score point 4</p>	<p>The reader provides an accurate summary of the whole text, including some well-chosen details as support.</p>

**Summary of student work** – Student A demonstrated mastery of reading standard RI.5.2. The summary identified two or more main ideas, and both main ideas were supported by many relevant details that were strategically selected to support the main ideas. Connections to the main ideas were based on information both inferred and explicitly stated in the text. The student also expressed the overarching theme of the text.

**Next steps for instruction** – Support the student by indicating the relative value of the supporting details in the summary. For example, the use of language such as “the most important way...”

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Final Task 3 – Essay**

Animals are one of earth's most wonderful creatures. They live in different ecosystems, and different environments. They come in different shapes, and sizes. Some are on the land, some are in the seas, and others are in the sky or up in the trees. They all eat different things. Some are carnivores, some are herbivores, and others are omnivores. Some come out in the day, some come out at night. They also have wonderful features. Some are extinct, some are not. Humans have a negative effect on organisms and if we don't take care of them, they will all be gone.

**Comment [L27]:** Compelling introduction - "Animals are one of earth's..." (W.5.2a)

**Comment [L28]:** Compelling introduction - "Some are on the land..." (W.5.2a)

**Comment [L29]:** Domain-specific vocabulary - carnivores, herbivores, omnivores. (W.5.2d)  
Use of domain-specific vocabulary also makes introduction more compelling. (W.5.2a)

Animals such as tigers are important to the ecosystems. In the article "Born to be Wild" it says that tigers are important meat eaters, or carnivores. The tiger's main foods are deer and wild pigs. When the tigers eat they don't only help themselves, they also help keep competition away. The tigers get food and the deer/pig community stays out of competition. Both the prey and the predator are happy.

**Comment [L30]:** Clearly states the topic, uses precise language (W.5.2a) (W.5.2d)

**Comment [L31]:** Writer strategically includes this paragraph to strengthen the essay. (W.5.2a)

**Comment [L32]:** Writer cites the article, "Born to be Wild." (W.5.2b)

**Comment [L33]:** Writer includes facts and details that are linked to the topic. (W.5.2b)

**Comment [L34]:** Domain-specific vocabulary - competition (W.5.2d)

**Comment [L35]:** Writer includes this information to show evidence of the importance of tigers in the ecosystems. This sets the stage for the development of the topic. (W.5.2a)

**Comment [L36]:** Writer cites the article, "Born to be Wild." (W.5.2b)

**Comment [L37]:** Domain-specific vocabulary - endangered animals (W.5.2d)

**Comment [L38]:** Facts and details are linked to the topic. (W.5.2b)

**Comment [L39]:** Facts and details are linked to the topic. (W.5.2d)

**Comment [L40]:** Transitional words - in addition (W.5.2c)

**Comment [L41]:** Domain-specific vocabulary - habitat fragmentation (W.5.2d)

**Comment [L42]:** Writer cites the article, "What's the Problem." (W.5.2b)

**Comment [L43]:** Sophisticated transitional phrase - (to prove this). (W.5.2d)

**Comment [L44]:** Facts and details that are linked to the topic. (W.5.2b)

In the article "Born to be Wild" it also says, tigers are endangered animals. They are endangered because only 3000 tigers remain in the wild. Hunters are illegally poaching, poisoning, trapping, and shooting tigers. In addition, as habitat fragmentation increases, tigers have a harder time surviving. People are killing tigers causing them to become endangered. People kill tigers because they get paid a lot for the tigers body parts and its fur coat.

In the article "What's the Problem", it said that people cause lots of trouble for manatees. Manatees are sea cows. To prove this, it also said in the article, that manatees get entangled in fishing nets, or in other fishing gear used by people. When people toss fishing hooks in the water, the manatees think it's food and eat the hooks. That causes the manatees to die. When people built canal locks and flood control structures that can cause a manatee to get crushed and/or drown. People's creations harm many animals such as manatees.

**Comment [L45]:** Inference - people's creations are harming animals (RI 5.9)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

I found out in the article that manatees are losing their habitat. Run-off from fertilizers and herbicides impact the food sources that the manatees eat. Development on the waterways also has an impact on the food sources that the manatees eat. Manatees like to live in warm water. They cannot live in the water whose temperature is below 68 degrees Fahrenheit, so they cannot just leave if their habitat is being destroyed.

In conclusion, people harm all types of animals causing them to die and become extinct. People's inventions are harming the environment, killing the animals and destroying their habitats. Animals should be saved. Help the animals. Don't hunt please. "SAVE THE ANIMALS!"

**Comment [L46]:** Precise vocabulary (run-off, fertilizers, herbicides) (W.5.2d)

**Comment [L47]:** Facts and details that are linked to the topic (W.5.2b)

**Comment [L48]:** Infers that the manatees cannot easily move to another area if their habitat is impacted by people (RI 5.9)

**Comment [L49]:** Transitional words (in conclusion) (W.5.2d)

**Comment [L50]:** Domain-specific vocabulary (environment, habitats) (W.5.2d)

**Comment [L51]:** Compelling concluding statement that builds on the topic and engages the audiences when he states, "Animals should be saved..." (W.5.2e)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student A Scoring Guide**

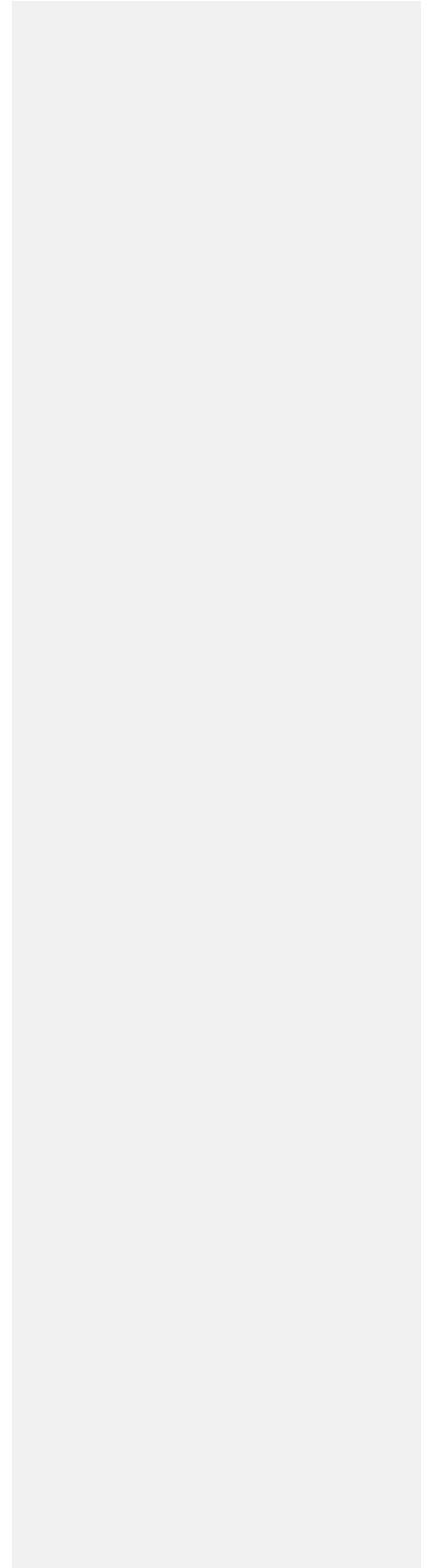
**Summary Overall Level 4 – This student work sample provides an example of a score point 4 for Writing Standard 5.2 and Reading Standard 5.9.**

<b>Criterion and Score Point</b>	<b>Evidence</b>
<p><b>Standard 5.W.2a</b> Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. Score point 4</p>	<p>The writer states the topic with a compelling introduction when he writes, “Animals are one of earth’s most wonderful creatures.” The writer clearly states the topic when he writes, “Humans have a negative effect on organisms and if we don’t take care of them, they will all be gone.” The body of the essay is cohesively grouped, with paragraphs strategically ordered to strengthen the essay. An example of this is the inclusion of paragraph two which begins, “Animals such as tigers are important to the ecosystems.” This paragraph shows why tigers are important to the ecosystem and how harming them affects other parts of the ecosystem.</p>
<p><b>Standard 5.W.2b</b> Develop the topic with facts, definitions, concrete details, quotations, or other examples related to the topic. Score point 4</p>	<p>The student includes many relevant facts and details that are clearly linked to the topic. The writer includes facts from “Born to be Wild” when he states, “The tiger’s main foods are deer and wild pig.” The writer includes facts from “Manatees – What is the Problem?” when he states, “...manatees get entangled in fishing nets, or in other fishing gear used by people.” The writer discusses the impact hunting has on tigers when he states, “People are killing tigers causing them to be extinct.” The writer also discusses human impact on manatees when he states, “Run-off from fertilizers and pesticides impact the food sources manatees eat.”</p>
<p><b>Standard 5.W.2c</b> Link ideas within and across categories of information using words, phrases, and clauses. Score point 4</p>	<p>The writer uses a variety of transitional phrases to link ideas and reasons to supporting facts and details. The student adds information with the use of “In addition to.” The student uses sophisticated transitional phrases to further his point by using, “To prove this.” The student begins the final paragraph with, “In conclusion.”</p>
<p><b>Standard 5.W.2d</b> Use precise language and domain-specific vocabulary to inform about or explain the topic. Score point 4</p>	<p>The writer includes many varied domain-specific vocabulary words. The student uses the words carnivores, herbivores, omnivores, extinct, ecosystems, competition, community, predator, prey, endangered animals, habitat fragmentation, environment, and habitats in the body of his essay. The writer includes precise language when he uses the words run-off, fertilizers, and pesticides. The writer also explains what carnivores are in this sentence, “In the article “Born to be Wild” it says that tigers are important meat eaters, or carnivores.</p>
<p><b>Standard 5.W.2e</b> Provide a concluding statement or section related to the information or explanation presented. Score point 4</p>	<p>The writer provides a compelling concluding statement that builds on the topic and engages the reader when he says, “Animals should be saved. Help the animals. Don’t hunt please. “SAVE THE ANIMALS!””</p>
<p><b>Integrating Standard 5.RI.9</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. Score point 4</p>	<p>The writer integrates information from several texts by citing information from the articles “Born to be Wild” and “Manatees: What is the Problem?” The writer also infers from the text when he states “People’s inventions are harming the environment, killing the animals and destroying their habitats.”</p>

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Summary of student work** – Student A demonstrated mastery of Writing standard W.5.2. The student clearly stated a topic, the writing was focused and information was grouped logically and strategically to strengthen the essay. The student included many relevant facts and details to support and develop the topic, referencing both texts (Standard 5.RI.9). The student also used sophisticated transition words to connect ideas and information. The essay included multiple instances of domain-specific vocabulary as well. The essay’s conclusion is compelling, and engages the audience.

**Next steps for instruction** – Support student in working toward **Grade 6** standards, specifically W.6.2. Teacher can support student in maintaining a more formal style/tone when writing. This can include writing distinct from personal opinion or judgment and incorporating direct quotes and definitions into essays to support the central message or theme.



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Annotated Student Work**

**Student B Reading Task 1 Summary**

The tiger population of the world is decreasing for many reasons. Tigers are dying because of their threatened habitat. Habitat fragmentation is a thing where animals are forced to live in small spots such as islands and where the habitats are not connected. Because of this population is decreasing. Another reason for the tiger population decreasing is that humans are hunting the same animals that tigers use for food. This sometimes causes tigers to wander onto farms to eat cows or other livestock. This causes more deaths for tigers as humans shoot tigers that come onto their land.

Tigers need to be protected. In the article it says, tigers are important meat eaters within their food webs. Protecting tigers help protect many other living things. Tigers are also beautiful creatures. It would be sad to see their species disappear from the earth. The ones that are still alive are endangered.

**Comment [L52]:** Main idea from the text. (RI.5.2 Main Idea)

**Comment [L53]:** Key detail. (RI.5.2 Key Details)

**Comment [L54]:** Reader summarizes the text and includes multiple relevant details. (RI.5.2 Summarizing)

**Comment [L55]:** Key detail. (RI.5.2 Key Details)

**Comment [L56]:** Reader summarizes the text and includes multiple relevant details. (RI.5.2 Summarizing)

**Comment [L57]:** Main idea - Tigers need to be protected (RI.5.2 Main Idea)

**Comment [L58]:** Key detail. (RI.5.2 Key Details)

**Comment [L59]:** Key detail. (RI.5.2 Key Details)



**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student B Scoring Guide**

**Summary Overall Level 3 – This student work sample provides an example of a score point 3 for Reading Standard 5.2.**

Criterion and Score Point	Evidence
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>The reader determines two main ideas. In the first paragraph, the reader identifies one main idea by stating “The tiger population of the world is decreasing for many reasons.” The reader identifies a second main idea in the second paragraph by stating “Tigers need to be protected.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>The reader identifies key details for the first main idea when she states “Tigers are dying because of their threatened habitats” and “Another reason for the tiger population decreasing is that humans are hunting the same animals that tigers use for food.” The reader identifies key details for the second main idea when she states “Tigers are important meat eaters within their food webs” and “Protecting tigers help protect many other living things.”</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>Reader summarizes the text and includes multiple relevant details when discussing habitat fragmentation and how tigers wander onto the farms.</p>

**Summary of student work** – Student B demonstrated mastery of reading standard RI.5.2. The summary identified two or more main ideas and both main ideas were supported by relevant details that support the main ideas. Connections to the main ideas were based on information explicitly stated in the text.

**Next steps for instruction** – Assist student in making inferences that can support the main idea by using Sentence Frames to model the language necessary to explain subtle connections between main idea and details (inferences).

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student B Reading Task 2 Summary**

In the article, it states manatees are a threatened species. This is partly because of human actions and partly because of natural causes. Examples of human actions are pollution and boats. The other part is that these animals also die from natural causes like disease and the fact that the manatee's reproductive rate is also slow because a manatee must be five years old to be mature enough to reproduce.

**Comment [L60]:** Main idea (RI.5.2 Main Idea)

**Comment [L61]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

**Comment [L62]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

People are causing harm to manatees. In the article it states that people are causing harm by using powerboats. Many manatees are getting squished and crushed by the boats. Another reason why manatees are getting harmed by people is because people are throwing garbage in the water. Then the water is polluted and manatees get sick because there is a lot of garbage in the water. If people stop polluting the waters, maybe there would be more manatees and they won't be threatened.

**Comment [L63]:** Main Idea (RI.5.2 Main Idea)

**Comment [L64]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

**Comment [L65]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

**Comment [L66]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

**Comment [L67]:** Key Detail – Supports main idea (RI.5.2 Key Detail)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student B Scoring Guide**

**Summary Overall Level 3 – This student work sample provides an example of a score point 3 for Reading Standard 5.2.**

Criterion and Score Point	Evidence
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>Student determines two main ideas. In the first paragraph, the student identifies one main idea when she states “Manatees are a threatened species.” The student identifies a second main idea in the second paragraph when she states “People are causing harm to manatees.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>Student identifies key details that support the main ideas and gives specific examples for each. For example, the student explains how pollution and powerboats harm manatees.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 3</p>	<p>Student summarizes the main points in the text and includes multiple relevant details.</p>

**Summary of student work** – Student B demonstrated mastery of reading standard RI.5.2. The summary identified two or more main ideas and both main ideas were supported by relevant details that support the main ideas. Connections to the main ideas were based on information explicitly stated in the text.

**Next steps for instruction** – Assist student in making inferences that can support the main idea by using Sentence Frames to model the language necessary to explain subtle connections between main idea and details (inferences).

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Annotated Student Work**

**Student B Final Task 3 - Essay**

Many animals are becoming extinct. Extinction is the death of all organisms in a species.

The ways human activity negatively affects organisms is when people go poaching, when humans go into the organism's environment, and when humans kill the animals other organisms depend on.

Sometimes people go into organisms environments. For example, when humans go into the manatee's habitat, that is when most of their deaths happen. The manatees could die because of getting hit by the propellers on a boats engine. Manatees also die because they get crushed by canal locks, as said in the article "What's the Problem?" Many manatees also drown from getting caught in a fishing net.

In "Born to be Wild," it states that tigers are being poached. People do this because some people will pay a lot of money for their bones, skin, and the meat. Poaching is when people go hunting for animals, kill them, and sell their body parts, illegally. If people continue to poach tigers, they will soon be extinct.

In the article, "Born to be Wild" it says that hunters are killing the animals that tigers depend on. An animal that a tiger could eat is a deer. That's not all tigers eat. They eat many more animals. If humans are killing the animals that tigers depend on then the tiger will have little food or no food at all. If this happens the tigers will starve to death. If tigers starve to death the population of tigers will decrease, and they will all soon be extinct. A population is all the animals in a species.

In conclusion, I think people should stop poaching animals, and stop killing animals that other organisms depend on. I especially think animals should stop going into animals'

**Comment [L68]:** Domain-specific vocabulary – extinction (W.5.2d)

**Comment [L69]:** The writer clearly states a topic by saying "Many animals are becoming extinct," and explaining what extinction is. (W.5.2a)

**Comment [L70]:** Domain-specific vocabulary – organisms (W.5.2d)

**Comment [L71]:** Domain-specific vocabulary – environment (W.5.2d)

**Comment [L72]:** Topic sentence clearly states an idea presented in the introduction (W.5.2a)

**Comment [L73]:** Transition word – for example (W.5.2c)

**Comment [L74]:** The writer includes facts and details linking each piece of evidence to the topic (W.5.2b)

**Comment [L75]:** Linking word (W.5.2c)

**Comment [L76]:** Writer cites the article, "What's the Problem?" (W.5.2b)

**Comment [L77]:** Topic sentence clearly states an idea presented in the introduction (W.5.2a)

Writer cites the article, "Born to be Wild." (W.5.2b)

**Comment [L78]:** Domain-specific vocabulary – poaching (W.5.2d)

**Comment [L79]:** The writer includes facts and details linking each piece of evidence to the topic (W.5.2b)

**Comment [L80]:** Topic sentence clearly states an idea presented in the introduction (W.5.2a)

Writer cites the article, "Born to be Wild" (W.5.2b)

**Comment [L81]:** Facts and details linking each piece of evidence to the topic (W.5.2b)

**Comment [L82]:** Implicit information

**Comment [L83]:** Domain-specific vocabulary – population and species (W.5.2d)

**Comment [L84]:** Transition word – in conclusion (W.5.2c)

**Comment [L85]:** Provides a compelling concluding statement that builds on the topic and engages the audiences. (W.5.2e)

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environments and destroying it. Hopefully everyone that is poaching, killing animals, and destroying habitats will stop. Most animals will be extinct soon if people don't stop

**Comment [L86]:** Domain-specific vocabulary – habitat (W.5.2d)

**Comment [L87]:** Provides a compelling concluding statement that builds on the topic and engages the audiences. (W.5.2e)

**Student B Scoring Guide**

**Summary Overall Level 3 – This student work sample provides an example of a score point 3 for Writing Standard 5.2 and Reading Standard 5.9.**

Criterion and Score Point	Evidence
<p><b>Standard 5.W.2a</b> Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p> <p>Score point 3</p>	<p>The student clearly states the topic by discussing extinction and supplying ways in which humans impact ecosystems negatively (hunting, poaching, and habitat encroachment). The body is cohesively grouped – each paragraph discusses a different text.</p>
<p><b>Standard 5.W.2b</b> Develop the topic with facts, definitions, concrete details, quotations, or other examples related to the topic.</p> <p>Score point 3</p>	<p>The student includes relevant facts and details linked to the topic. The student cites two articles, discusses the human impact on manatees, and gives several examples. The student discusses the effect of poaching tigers, as well as hunting the tiger's prey.</p>
<p><b>Standard 5.W.2c</b> Link ideas within and across categories of information using words, phrases, and clauses.</p> <p>Score point 2</p>	<p>The student uses few transitional phrases to link ideas and reasons to supporting facts and details. The student clarifies a statement with “for example,” and begins the final paragraph with “in conclusion.”</p>
<p><b>Standard 5.W.2d</b> Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>Score point 4</p>	<p>The student includes many domain-specific vocabulary words and explains several within the body of the essay. The student includes language such as population, extinct, organisms, species, poaching, and environment. The student also clearly explains poaching, population, and extinction.</p>
<p><b>Standard 5.W.2e</b> Provide a concluding statement or section related to the information or explanation presented.</p> <p>Score point 3</p>	<p>The student provides a concluding statement that is related to the topic.</p>

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<p><b>Integrating Standard 5.RI.9</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.</p> <p>Score point 3</p>	<p>The reader integrates explicit information from both texts to write about the topic knowledgeably.</p>
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**Summary of student work** – Student B demonstrated mastery of Writing standard W.5.2. The student clearly stated a topic, the writing was focused, and information was grouped logically. The student included relevant facts and details to support and develop the topic, referencing both texts (Standard 5.RI.9). The student used transition words and domain-specific vocabulary to connect ideas and inform the topic.

**Next steps for instruction** – Support student B organizing writing to strategically strengthen writing (e.g., present most compelling details first). Examine mentor texts to study ways in which authors use sophisticated transitional words and how authors write compelling conclusions.

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student C Reading Task 1 Summary of Born to Be Wild**

The passage was about tigers that are close to extinction and species that are extinct.

**Comment [NS88]:** Recaps a main idea in the text. (RI.5.2 Main Idea)

For thousands of years tigers are symbols like beauty charm, luck and power. Tigers are

**Comment [L89]:** Irrelevant detail (RI.5.2 Key Details)

important; they are the carnivores in the food web. They have the power to protect other living

**Comment [L90]:** Key detail (RI.5.2 Key Details)

organisms in the wild. Now they are dangerously close to extinction because now there are

about 1,000 tigers left. There are three types of tigers that were recently extinct Caspian,

**Comment [L91]:** Inaccurate detail (RI.5.2 Key Details)

Javan, and Bali Tigers. People are hunting depend upon. They're illegally poached and killed.

**Comment [NS92]:** Key detail (RI.5.2 Key Details)

**Comment [L93]:** Key detail (RI.5.2 Key Details)

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Annotated Student Work**

**Student C Scoring Guide**

**Summary Overall Level 2 – This student work sample provides an example of a score point 2 for Reading Standard 5.2.**

<b>Criterion and Score Point</b>	<b>Evidence</b>
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p><b>Score point 2</b></p>	<p>Student determines one main idea by stating “this passage was about tigers that are close to extinction and species that are extinct.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p><b>Score point 2</b></p>	<p>The student includes key details but also includes inaccurate details.</p> <p>Student does not connect details to the main idea. For example, student stated “they’re illegally poached and killed” but does not connect this detail to the main idea.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p><b>Score Point 2</b></p>	<p>The reader attempts to summarize the text but leaves out key elements (humans have an impact on tiger survival). The reader also includes inaccuracies in the summary (there are about 1000 tigers left).</p>

**Summary of student work** – Student C is approaching Reading standard RI.5.2. The summary identified one main idea that was minimally supported by relevant details that support the main ideas. Connections to the main ideas were based on information explicitly stated in the text.

**Next steps for instruction** – Assess student comprehension (running record). Support student in organizing writing and including relevant details. Possible strategies include chunking the text, providing a planning page/checklist to ensure student identifies two main ideas, and providing a highlighter to select relevant details.



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Student C Reading Task 2 Summary

“What’s the Problem” was about the population of manatees. Now Manatees are nearly extinct. Manatees have no natural predator, which is a good thing, so there is no other animal that could be harming the manatees. They had habitat loss, which could have been pollution and development around the area where manatees live. Those are harmful to manatees.

All of these things that are harming manatees are mostly caused by humans like us. Pollution is thrown in the water, which was caused by humans. 500 powerboats against 1 manatee can totally harm it. And lastly habitat loss from cold lower them 68 degrees Fahrenheit can get them sick and die.

Comment [NS94]: Inaccurate main idea (RI.5.2 Main Idea)

Comment [L95]: Key detail (RI.5.2 Key Detail)

Comment [L96]: Key Detail (RI.5.2 Key Detail)

Comment [L97]: Explains how details support main idea (RI.5.2 Key Detail)

Comment [NS98]: Main idea (RI.5.2 Main Idea)

Comment [L99]: Key Detail (RI.5.2 Key Detail)

Comment [L100]: Key Detail (RI.5.2 Key Detail)

Comment [NS101]: Inaccurate detail (RI.5.2 Key Detail)

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Annotated Student Work**

**Student C Scoring Guide**

**Summary Overall Level 2 – This student work sample provides an example of a score point 2 for Reading Standard 5.2**

<b>Criterion and Score Point</b>	<b>Evidence</b>
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 2</p>	<p>Student states two main ideas.            Manatees are nearly extinct (inaccurate) and humans are causing harm to manatees.</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 2</p>	<p>Student identified key details in paragraph one and explained how those details support the main idea (identified threats to manatees and explained they are caused by humans).</p> <p>Paragraph two includes key details but the student failed to explain how they support the main idea.</p> <p>Student included an inaccurate detail: “And lastly habitat loss from cold lower them 68 degrees Fahrenheit can get them sick and die.”</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score Point 1</p>	<p>Student attempted to summarize the text but omitted key elements and included inaccuracies in the summary.</p>

**Summary of student work** – Student C is approaching Reading standard RI.5.2. The summary identified one main idea that was minimally supported by relevant details. Connections to the main ideas were based on information explicitly stated in the text.

**Next steps for instruction** – Assess student comprehension (running record). Support student in organizing writing and including relevant details. Possible strategies include chunking the text, providing a planning page/checklist to ensure student identifies two main ideas, and providing a highlighter to select relevant details.

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Annotated Student Work**

**Student C Final Task 3 - Essay**

People like us are harming animals like manatees and tigers. We need to stop our harmful actions and start conserving to save them. Tigers have been poached and have been hunted because they thought tigers weren't that important. Tigers are important. Tigers are an important part of the food web. They protect other organisms when in need of help.

**Comment [L102]:** The writer states a topic. Introductory paragraph lacks general observation and focus. (W.5.2a)

**Comment [L103]:** Attempts to use precise language (W.5.2d)

**Comment [L104]:** Writing is repetitive (W.5.2d)

**Comment [L105]:** Uses domain-specific vocabulary - food web (W.5.2d)

These tigers are nearly extinct. Now there are only 1,000 tigers in the world since Caspian, Javan, and the Bali tiger have died off. They represent beauty, luck, charm, and power which proves that they are that important. They are illegally poached and hunted which I have said before. They are a big and important part of the food web and protect other organisms which I have said before.

**Comment [L106]:** Cites precise language – illegally poached. (W.5.2d)

**Comment [L107]:** Details mostly support the topic. (W.5.2b)

**Comment [L108]:** Uses a transitional phrase however, it does not link ideas and reasons. (W.5.2c)

**Comment [L109]:** Makes an inaccurate connection between the sentences. (W.5.2c)

The population of manatees is dropping from the change of habitat, pollution, and powerboat. One, since now all they have is small space. Two, now there trash in the water the manatees live in and they are mistaking the trash for food. Three, the powerboats people drive and they get tangled with they instantly die.

**Comment [L110]:** Domain-specific vocabulary – habitat, pollution (W.5.2d)

**Comment [L111]:** Attempts to use domain-specific vocabulary to inform about the topic. (W.5.2d)

**Comment [L112]:** General statement (W.5.2b)

These animals are important because they protect organism and their families. In conclusion they are important.

**Comment [L113]:** Attempts to use a transition word – in conclusion (W.5.2c)

**Comment [L114]:** Ends the essay without a sense of closure. (W.5.2e)

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Annotated Student Work**

**Student C Scoring Guide**

**Summary Overall Level 2 – This student work sample provides an example of a score point 2 for Writing Standard 5.2 and Reading Standard 5.9.**

Criterion and Score Point	Evidence
<p><b>Standard 5.W.2a</b> Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension. Score Point 2</p>	<p>The student clearly states/introduces the topic yet only refers to tigers. The body of the essay is somewhat cohesively grouped. The essay includes ideas, reasons, facts and/or details that form somewhat cohesive paragraphs.</p>
<p><b>Standard 5.W.2b</b> Develop the topic with facts, definitions, concrete details, quotations, or other examples related to the topic. Score Point 2</p>	<p>The essay is minimally developed. The student does not elaborate on any of the ideas that he introduces within the essay. He states that tigers are an important part of the food web, yet he does not explain why.</p>
<p><b>Standard 5.W.2c</b> Link ideas within and across categories of information using words, phrases, and clauses. Score Point 2</p>	<p>The student does not link the idea of manatees with tigers at any point in his essay. The student uses the same phrase in every instance and sometimes not appropriately. The student states “which I have said before” twice in the second paragraph.</p>
<p><b>Standard 5.W.2d</b> Use precise language and domain-specific vocabulary to inform about or explain the topic. Score Point 2</p>	<p>There is an attempt to use precise and domain-specific vocabulary. The student mentions the word poached but does not expand to help inform about the topic. Student used the word “important” repeatedly.</p>
<p><b>Standard 5.W.2e</b> Provide a concluding statement or section related to the information or explanation presented. Score Point 1</p>	<p>The essay ends without a sense of closure when the student states “These animals are important because they protect organisms and their families. In conclusion, they are important.” Conclusion is unrelated to topic.</p>
<p><b>Integrating Standard 5.RI.9</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. Score point 2</p>	<p>The student minimally integrates information from several sources. Facts, details, and information from the sources are minimally developed. The student lists facts without explaining their connection to the topic.</p>

**Summary of student work** – Student C is approaching Writing standard W.5.2. The student stated a topic, and the writing was somewhat focused, though minimally developed. The student included relevant and irrelevant details to support and develop the topic and attempted to include information from both texts (Standard 5.RI.9). The student attempts to use transition words and domain-specific vocabulary to connect ideas and inform the topic.

**Next steps for instruction** – Help student C elaborate and strengthen his or her writing. Possible strategies include using highlighters to identify relevant details in a text, and using mentor texts to model transition words, introductions, and conclusions.

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Annotated Student Work**

**Student D Reading Task 1 Summary**

In the article "Born To Be Wild" the main idea is the South China tiger is close to being extinct. The tiger have less food because hunters hunt the animals that a tiger needs to survive. Tiger get poached, poisoned, trapped, and shot. Tigers also die because of habitat fragmentation.

In the article "The Swazi Eleven" there are 11 elephants. The main idea was that the 11 elephants needed a place to live because Africa was run over by a lot of elephants. In other zoo's they wouldn't want the elephants.

**Comment [MD115]:** Student states a main idea from the text "... the South China Tiger is close to being extinct." (RI.5.2 Main Idea)

**Comment [MD116]:** Restates information from the text (RI.5.2 Key Details)

**Comment [MD117]:** Key detail (RI.5.2 Key Details)

**Comment [L118]:** Key detail. (RI.5.2 Key Details)

**Comment [MD119]:** Irrelevant information (RI.5.2 Key Details)

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Annotated Student Work**

**Student D Scoring Guide**

**Summary Overall Level 1 – This student work sample provides an example of a score point 1 for Reading Standard 5.2.**

<b>Criterion and Score Point</b>	<b>Evidence</b>
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 1</p>	<p>Identifies a minor detail in the text as a main idea “... the South China tiger is close to being extinct.”</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 1</p>	<p>The student minimally explains how one or two key details support the main idea by stating “tiger get poached, poisoned, trapped and shot.”</p> <p>Student restates information from the text without explaining its connection to a main idea when he or she explains why tigers have less food without explaining how that affects tiger survival.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score Point 1</p>	<p>The reader minimally recounted parts of the text but failed to synthesize them into a summary.</p> <p>Reader listed several details from the text without explaining how they support the overall main idea.</p>

**Summary of student work** – Student D is performing below Reading standard RI.5.2. The summary identified a minor detail as a main idea and was minimally supported by details from the text. The writer also included irrelevant details as well as information not presented in the text.

**Next steps for instruction** – Assess student comprehension (running record). Support student in organizing writing, determining the main idea(s) and including relevant details. Possible strategies include chunking the text, providing a planning page/checklist to ensure student identifies two main ideas, and providing a highlighter to select relevant details in support of the main idea.

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student D Reading Task 2 Summary**

In the article "What's the problem" a main idea is that manatees are America's most endangered species. People in power boats cause lots of trouble for manatees. Humans are getting on manatees turf. If the water gets too cold manatees get sick.

**Comment [MD120]:** Inaccurate - Manatees are threatened, not endangered (RI.5.2 Main Idea)

**Comment [MD121]:** Key detail - no connection to main idea (RI.5.2 Key Detail)

**Comment [MD122]:** Minor point stated, not main idea (RI.5.2 Main Idea)

For the article "What's the Problem" another main idea is DO NOT harm manatees. People shouldn't pollute the manatees habitats. Don't use power boats when you are in a manatee habitat. Do not use fishing hooks or fishing gear in a manatees habitat because you can kill them.

**Comment [L123]:** Detail not connected to main idea (RI.5.2 Key Detail)

**Comment [MD124]:** Detail not connected to main idea (RI.5.2 Key Detail)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student D Scoring Guide**

**Summary Overall Level 1 – This student work sample provides an example of a score point 1 for Reading Standard 5.2.**

Criterion and Score Point	Evidence
<p><b>Main idea</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 1</p>	<p>Student states manatees are endangered (inaccurate) and that people shouldn't harm manatees (inference) as the main ideas.</p>
<p><b>Support – Key Details</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score point 1</p>	<p>Student restates information from the text without explaining its connection to a main idea or ideas. For example, the student states “people are getting on manatees turf” without explaining how (development on the waterways) or why (development impacts manatee food sources) that affects manatee survival.</p>
<p><b>Summarizing</b>  <b>R.I. Standard 5.2:</b>            Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.            (Tasks 1 and 2)</p> <p>Score Point 1</p>	<p>Student recounts parts of the text but fails to synthesize into a summary.</p>

**Summary of student work** – Student D is performing below Reading standard RI.5.2. The summary identified a minor detail as a main idea and was minimally supported by details from the text. The writer also included irrelevant details as well as information not presented in the text.

**Next steps for instruction** – Assess student comprehension (running record). Support student in organizing writing, determining the main idea(s) and including relevant details. Possible strategies include chunking the text, providing a planning page/checklist to ensure student identifies two main ideas, and providing a highlighter to select relevant details in support of the main idea.



**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student D Final Task 3 – Essay**

People attack animals and that can lead to extinction. People shouldn't harm living organisms. It is bad for the ecosystem if an animal dies out. There won't be any living things but plants.

In the article "zoochosis" it states that animals are kept in cages and that makes animals crazy. Animals are miserable and they get disease called zoochosis. Animals get sick in cages.

In the article "Born to be wild" tigers were being extinct because people were legally poaching and killing tigers. Caspian tigers, Javan tigers, and Bali tigers are extinct.

In all articles I have read about organisms that die off. I read about a lot of organisms that die off. I know that a lot of organisms die off by peoples actions. People need to stop harming animals.

**Comment [MR125]:** Domain-specific vocabulary – extinction (W.5.2d)

**Comment [NS126]:** Provides a general observation (W.5.2a)

**Comment [MR127]:** Domain-specific vocabulary – ecosystem (W.5.2d)

**Comment [L128]:** Inaccurate fact/observation (W.5.2b)

**Comment [L129]:** Fact does not support the main topic. (W.5.2b)

**Comment [L130]:** Inaccurate fact/observation (W.5.2b)

**Comment [L131]:** Provides a concluding statement that is not clearly related to the topic (W.5.2e)

**Grade 5 Literacy in Science: Ecosystems  
Annotated Student Work**

**Student D Scoring Guide**

**Summary Overall Level 1 – This student work sample provides an example of a score point 1 for Writing Standard 5.2 and Reading Standard 5.9.**

Criterion and Score Point	Evidence
<p><b>Standard 5.W.2a</b> Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p> <p><b>Score Point 1</b></p>	Student provided a general observation about the topic.
<p><b>Standard 5.W.2b</b> Develop the topic with facts, definitions, concrete details, quotations, or other examples related to the topic.</p> <p>Score Point 1</p>	Student provides inaccurate facts such as “there wont be any living things but plants.” Student also includes irrelevant information when he cites “Zoochosis.”
<p><b>Standard 5.W.2c</b> Link ideas within and across categories of information using words, phrases, and clauses.</p> <p>Score Point 1</p>	Student did not incorporate transition words into the essay.
<p><b>Standard 5.W.2d</b> Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>Score Point 1</p>	The student minimally used domain-specific vocabulary (extinct and ecosystem) Student failed to incorporate precise language.
<p><b>Standard 5.W.2e</b> Provide a concluding statement or section related to the information or explanation presented.</p> <p>Score Point 2</p>	The concluding statement is not clearly related to the topic
<p><b>Integrating Standard 5.RI.9</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.</p> <p>Score point 1</p>	The student referenced only one text from the final task, “Born to be Wild.” Student included information from a text read prior to the final task, “Zoochosis.”

**Summary of student work** – Student D performing below Writing standard W.5.2. Student provides a general observation about the topic, provides inaccurate details, lacks transition words, minimally uses domain-specific vocabulary words, and references only one text from the final task (Standard 5.RI.9).

**Next steps for instruction** – Support student D by analyzing mentor texts to study ways in which authors introduce a topic, use transition words, and write concluding statements. Provide support in organizing writing by including planning pages/checklists. Teacher may also model paragraph writing.



# GRADE 5 LITERACY IN SCIENCE: ECOSYSTEMS

## INSTRUCTIONAL SUPPORTS

The instructional supports on the following pages include a unit outline with formative assessments and suggested learning activities. Teachers may use this unit outline as it is described, integrate parts of it into a currently existing curriculum unit, or use it as a model or checklist for a currently existing unit on a different topic.

# Unit Outline

**INTRODUCTION:** This unit outline provides an example of how to integrate performance tasks into a unit. *Teachers may (a) use this unit outline as it is described below; (b) integrate parts of it into a currently existing curriculum unit; or (c) use it as a model or checklist for a currently existing unit on a different topic. The length of the unit includes suggested time spent on the classroom instruction of lessons and administration of assessments. Please note that this framework does not include individual lessons.*

## Grade 5 Literacy in Science: Ecosystems

### UNIT TOPIC AND LENGTH

- This unit will take approximately 3-4 weeks for instruction and 1 week to complete the final task. It can be easily situated late in the school year, as it is aligned with Unit 4 of the NYC Science Scope and Sequence. The unit begins with an in-depth study of how ecosystems change over time, and concludes with the impact humans have had (both positive and negative) on ecosystems.

### COMMON CORE CONTENT STANDARDS

- 5.W.2 Write informative/explanatory texts to examine and convey ideas and information clearly.
  - Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
  - Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
  - Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
  - Use precise language and domain-specific vocabulary to inform about or explain the topic.
  - Provide a concluding statement or section related to the information or explanation presented.
- 5.RI.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
- 5.RI.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.

### NEW YORK STATE SCIENCE STANDARDS

**Key Idea 7:** Human decisions and activities have had a profound impact on the physical and living environment. Humans are dependent upon and have an impact on their environment. Students should recognize how human decisions cause environmental changes to occur.

### NEW YORK CITY SCIENCE SCOPE AND SEQUENCE

**Grade 5 Unit 4:** How are plants and animals in an ecosystem connected?

### **BIG IDEAS/ENDURING UNDERSTANDINGS**

- Populations within an ecosystem are in competition with one another for resources.
- Humans depend on their natural and constructed environments.
- Over time humans have changed their environment by cultivating crops and raising animals, creating shelter, using energy, manufacturing goods, developing means of transportation, changing populations, and carrying out other activities.
- Humans, as individuals or communities, change environments in ways that can be either helpful or harmful for themselves and other organisms.
- Writers use different sources to gather information and write knowledgeably about a topic.

### **ESSENTIAL QUESTIONS**

- How do organisms compete and survive in an ecosystem?
- How do ecosystems change over time?
- How do people affect ecosystems?
- How do readers and writers use informational texts to integrate information, summarize information, and develop a topic clearly?

### **CONTENT**

- Students will know key vocabulary for understanding ecosystems.
- Students will know how populations interact in an ecosystem. (Predator and Prey relationships/symbiosis.)
- Students will know what organisms compete for in an ecosystem.
- Students will know how adaptations help plants and animals compete.
- Students will know how changes in ecosystems affect the community of organisms within ecosystems.
- Students will know how these changes can cause the extinction of some organisms.
- Students will know how people's actions can change the environment.
- Students will know how the environment can be protected and restored.
- Students will know how reclaiming ecosystems is different from protecting them.

### **SKILLS**

- Integrate information from several texts.
- Write about the subject knowledgeably.
- Write informative/explanatory text to examine a topic and convey ideas.
- Write informative/explanatory text to present information clearly.
- Introduce a topic clearly.
- Provide general observations and a focus.
- Group related information logically.
- Include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- Develop the topic with facts, definitions, and concrete details.
- Develop the topic with quotations.
- Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).
- Use precise language and domain-specific vocabulary to inform/explain topic.
- Provide a concluding statement or section related to the information or explanation presented.
- Draw evidence from informational text to support analysis.

## VOCABULARY/KEY TERMS

ACID RAIN, ADAPTATION, CARNIVORE, COMMUNITY, COMPETITION, CONSERVATION, CONSUMER, DEFORESTATION, ECOSYSTEMS, EXTINCTION, HABITAT, HABITAT DESTRUCTION, HERBIVORE, POLLUTION, POPULATION, PREDATOR, PREY, PRIMARY SUCCESSION, PRODUCER, RECLAMATION, SECONDARY SUCCESSION, SYMBIOSIS

**Additional Support Strategies for Teaching Academic Vocabulary:** For students who need support developing their academic vocabulary, consider the following resources: [Building Academic Vocabulary](#), R. Marzano and D. Pickering, and [Bringing Words to Life](#), I. Beck. Further, the Support section of this document contains Instructional Supports designed to scaffold vocabulary development.

## ASSESSMENT EVIDENCE AND ACTIVITIES

### INITIAL ASSESSMENT :

Students may be assessed using Running Records with non-fiction texts. At this point in the year, readers should be at Level U, and by the end of the year they should be at Level V.

Students will also complete an Anticipatory Guide to gauge understanding of the topic and possible misconceptions to be addressed, to activate prior knowledge and develop schema, and to increase interest in the topic.

### FORMATIVE ASSESSMENT:

Lesson One: Summarizing (Main Idea and Supporting Details) – Collaborative poster and summary

Lesson Two: (Cause and Effect) – Relationship between succession and extinction

Lesson Three: (Main Idea and Supporting Details) – Newspaper article and summary

Culminating Activity: Research/Plan to protect an endangered species

Other Assessments – Short teacher made quizzes, science journals, teacher observations, conference notes

### FINAL PERFORMANCE TASK:

How has human activity negatively affected organisms?

You have read “Born to be Wild,” “Manatees – What is the Problem?” and the graph “2011 Manatee Mortality.” You have written summaries for both texts which include the main ideas and key supporting details. Integrate information from both texts and the graph to write a well organized, informative essay explaining how human activity has negatively affected organisms within ecosystems.

In your essay, be sure to:

- Introduce the topic clearly.
- Develop the topic with facts, details, quotations, or other information related to the topic.
- Use transition words and phrases to link ideas about the topic.
- Include content specific vocabulary when writing details to support the topic.
- Include a closing statement related to the topic.

**Additional Support Strategies for English Language Learners** – Embedded throughout the unit are teaching strategies that provide support to English Language Learners. The anticipatory guide activates prior knowledge and bridges knowledge to a new concept. The collaborative poster (text representation) provides for multiple entry points into the activity. Students work in groups to discuss elements of the poster and each makes individual contributions. The contributions are presented in a variety of ways. There are opportunities for students to self-assess, building their metacognitive skills. Teachers should also explicitly model so that ELL students have a clear understanding of what is expected of them. The supports section contains several graphic organizers/note takers that support ELLs in developing reading comprehension skills and can be used by ELL students as they read the science content. In addition, the vocabulary resources provided are also valuable in developing academic and domain-specific vocabulary for ELL students. For further information regarding supports for ELLs, please see [http://schools.nyc.gov/NR/ronlyres/2F4507D0-7C83-4229-BF6A-4860E6F1677A/0/GeneralELAStrategiesforELLs\\_082811.pdf](http://schools.nyc.gov/NR/ronlyres/2F4507D0-7C83-4229-BF6A-4860E6F1677A/0/GeneralELAStrategiesforELLs_082811.pdf)

## LEARNING PLAN & ACTIVITIES

**Unit Background Information:** This unit is in alignment with the New York City Science Scope and Sequence, Unit 4 – Exploring Ecosystems. Before beginning this task, students should have an understanding of the parts of a plant, how plants produce food (photosynthesis), ecosystems, how energy passes through an ecosystem (producers/consumers), food chains and food webs (herbivore, carnivore, and omnivores). A possible resource for teaching this material, as well as the subsequent material found in the learning activities below, is the following New York City Core Curriculum materials: Harcourt Science, Grade 5 (Chapter 8, New York City Edition) or New York City’s Science Kit-based materials for Grade 5 FOSS - Environments. Additional information can be found at the following websites:

[http://www.harcourtschool.com/menus/science/grade5\\_nyc.html](http://www.harcourtschool.com/menus/science/grade5_nyc.html)  
[www.powerkidslinks.com/gosci/food](http://www.powerkidslinks.com/gosci/food)  
[www.powerkidslinks.com/lse](http://www.powerkidslinks.com/lse)

### **Reflection**

Throughout the unit, students will have time to reflect on the lessons. After each lesson, students should write what they have learned, as well as something they are wondering about. Reflections should be brief and may be shared in pairs or in small groups.

	Objective	I learned....	I was wondering...
<b>Lesson 1</b> How do organisms compete and survive in an ecosystem?			
<b>Lesson 2</b> How do ecosystems change over time?			
<b>Lesson 3</b> How do people affect ecosystems?			

**UNIT 4: ECOSYSTEMS AND CHANGE** – *Aligned to Harcourt Science, Grade 5 Chapter 9, but may be used with other NYC Science Programs such as FOSS.*

**Vocabulary development strategies to be used throughout the unit:** Provide students with opportunities to become familiar with the vocabulary introduced in the lesson. Students may maintain a Vocabulary Journal where they record word meanings. They may also complete a graphic organizer based on the Frayer Model (Definition, Characteristics, Example, Non-Example). Teacher should model creating a Journal entry and/or completing a Frayer Model organizer. A sample organizer can be found in the supports section of this document.

**Note Taker:** Provide ELL and/or SWD students with a Note Taker to record important information as they grapple with academic texts. A Note Taker structures the information presented and provides a focus for students as they read. A sample note taker can be found in the instructional supports section of this document.

**Activate prior knowledge and build curiosity about the topic through the use of the following anticipation guide. The guide can also be used to assess how students reevaluate their opinions at the end of the lessons.**

	Agree	Disagree	Reasons
Natural changes in an ecosystem are always positive			
Changes that people make in an ecosystem always have negative consequences			
Its impossible to prevent certain animals from going extinct			
Competition among organisms impacts ecosystems in negative ways			

**Vocabulary – Tier III**

Population                      Community                      Predator                      Prey  
 Competition                      Adaptation                      Symbiosis

**Vocabulary – Tier II**

Fragile                      Thrive                      Provide

**Lesson One – How do organisms compete to survive in an ecosystem? (2-3 days)**

- Explain how populations interact in an ecosystem. (Competition and Adaptation)
- What are the three kinds of symbiosis and their characteristics?
- How do predator and prey relationships change an ecosystem?



**Lesson Summary:** Students build an understanding of how organisms compete and survive in an ecosystem. They will discuss interactions in nature – symbiosis and predator-prey relationships. Further, the class will learn that a population is all of the organisms that live and interact in a community and that within a community, individual organisms compete for food, water, and space. Adaptations help them to compete and symbiotic relationships among organisms help them meet their needs. Within a community, there are also predator-prey relationships.

**Reading Focus – Main Idea/Supporting Details**

Pre-teach vocabulary for the lesson. ELL students will benefit from the use of visuals, which may include photographs, or short video clips. The visuals provide comprehensible input, make complex ideas more accessible, and give language concrete meaning.

During the minilesson, model using a Main Idea/Supporting Details/Summary graphic organizer to determine the main idea(s) of an informational text and locate details in the text to support the main idea(s). Teacher should model how to complete the organizer using “Trading Trash for Treasure” or a similar mentor text.

Guide students through the reading of content, explaining that as they read they will be thinking about the main ideas of the text. They will also be looking for details in the text that will support the main ideas. Students read with a partner, stopping after each section to discuss the following questions:

Interactions – What do organisms compete for in an ecosystem?

Symbiosis – Give examples of the three kinds of symbiosis.

Predator/Prey Relationships – What symbiotic relationship is most like predator/prey?

Teachers should check for student understanding through discussion/questioning. Students will complete a Main Idea/Supporting Details/Summary graphic organizer to help identify the main ideas of the text and the relevant details that support the main ideas.

**Writing Focus – Summary, Citing Sources**

Students will utilize the information from their graphic organizer to write a summary of the text. Teachers should model how to take the main idea and supporting details from their graphic organizer to craft a summary paragraph that includes details cited from the text.

**Formative Assessment 1 – Collaborative Poster:** Groups of students will create a collaborative poster on one of the following topics: “Interactions in Nature,” “Symbiosis,” or “Predator-Prey Relationships,” which all discuss competition within an ecosystem. The poster must include key vocabulary words with definitions, illustrations/diagrams (if applicable), and examples of each concept. In addition, each student will write a one paragraph summary of the text that determines two or more main ideas of the selected topic and should be supported with key details.

Performance Indicators	High	Medium	Low
<p><b>Summary Content</b></p> <p><b>RI.5.2 – Two or more main ideas supported by key details</b></p>	<p>Summary includes two or more main ideas with many key details related to the science topic.</p> <p>Domain specific vocabulary words are defined and accompanied by illustrations/diagrams.</p> <p>The poster successfully communicates the main idea of the text.</p>	<p>Summary includes two or more main ideas with several key details related to the science topic.</p> <p>Domain specific vocabulary words are defined and may be accompanied by illustrations/diagrams.</p> <p>The poster communicates the main idea of the text.</p>	<p>Summary includes one main idea or lacks a main idea and/or supporting details related to the science topic.</p> <p>Domain specific vocabulary words are not defined and are not accompanied by illustrations/diagrams.</p> <p>The poster fails to communicate the main idea of the text.</p>

<b>Group Presentation</b>	<p>Poster uses creative designs to show key ideas and details within the text.</p> <p>Poster effectively uses pictures, illustrations, and diagrams to present content.</p> <p>Poster is neat and organized.</p>	<p>Poster uses simple designs to show key ideas and details within the text.</p> <p>Poster uses pictures, illustrations, and diagrams to present content.</p> <p>Poster is neat.</p>	<p>The poster's design is not related to key ideas and details.</p> <p>Poster minimally includes pictures, illustrations, and diagrams.</p> <p>Poster is not neat/organized.</p>
<b>Collaboration With Peers</b>	<p>During planning of the poster, each student is actively involved and contributes to both the key ideas and the vocabulary.</p> <p>All group members encourage peers' participation and work to incorporate their ideas into the poster.</p>	<p>During planning of the poster, each student is actively involved and contributes to the key ideas and/or the vocabulary.</p> <p>All group members respond to each other's ideas and contribute to the poster.</p>	<p>During planning, one or more students fail to contribute ideas/vocabulary.</p> <p>One or more group members does not contribute content to the poster.</p>

**Additional Support Strategies:** For students that need help determining the main ideas of an informational text and developing a summary, consider using the following strategies: graphic organizer (Main Idea/Details/Summary) as well as underlining key details within the text to support main idea. Further, use of the textbook online with audio and vocabulary cards can support lower level readers as well as those that may benefit from multimedia presentation of materials. Several of these supports (aligned with Harcourt Science Textbook) may be found on the following website: [http://www.pottstownschoools.com/pottstown/Elementary%20Science%20Leveled%20Readers/Grade%205%20Level%20Readers/CH%206%20Below\\_%20Ecosystems%20and%20Change.pdf](http://www.pottstownschoools.com/pottstown/Elementary%20Science%20Leveled%20Readers/Grade%205%20Level%20Readers/CH%206%20Below_%20Ecosystems%20and%20Change.pdf)

### Vocabulary – Tier III

Primary Succession      Secondary Succession      Extinction

### Vocabulary Tier II

Vanish                      Portion                      Divert

### Lesson Two – How do ecosystems change over time? (2-3 days)

- How do changes in an ecosystem affect the organisms living within it? (Primary and Secondary Succession)
- How can these changes cause the extinction of some organisms?

**Lesson Summary:** Students will learn about the different changes in an ecosystem. They will learn about succession, which is a slow change in the kinds of organisms within an ecosystem. They will discuss the differences between primary and secondary succession and develop cause-and-effect relationships for each. Next they will learn about extinction, when all of the members of a species have died.

### Reading Focus – Cause and Effect

Pre-teach vocabulary for the lesson. ELL students will benefit from the use of visuals, which may include photographs or short video clips.

During the minilesson, teach/model cause and effect using Trouble In Paradise, Lexile Level 850 Scholastic News, October 20, 2003 or other similar mentor text (Can be accessed through the New York Online Virtual Electronic Library at [www.novelny.org](http://www.novelny.org)).

Guide students through the reading of content, explaining that as they read they will be thinking about the cause and effect relationships within ecosystems. Students will read with a partner, stopping after each section to discuss the following questions:

Succession – What are three causes of succession?

Primary/Secondary Succession – What is the main result of primary succession and of secondary succession?

Extinction – How can change in climate cause extinction?

Teachers should check for student understanding through discussion/questioning. Students will complete the chart below with specific examples from the text to demonstrate the cause and effect relationship for each ecosystem change.

	Cause	Effect
Primary Succession		
Secondary Succession		
Extinction		

### Writing Focus – Transition Words

Mentor Text – “Trouble In Paradise,” Lexile Level 850 Scholastic News, October 20, 2003

Can be accessed through the New York Online Virtual Electronic Library at [www.novelny.org](http://www.novelny.org)). Project the text on an overhead or provide students with a copy of the text. After reading it with students, reread, highlighting examples of the author’s use of transition words throughout the text. Examples of transition words in the article include *while, yet, although, even, also, and many*. Have students begin a “Transition Words” chart in their notebooks or create a class chart that can be updated as students encounter new transition words.

### Support/Reinforcement – Summary, Citing Sources

Provide students that have not mastered summary writing and citing sources in their writing additional opportunities to practice these skills by providing small group instructional support in writing summary/citing sources for “Trouble In Paradise.”

**Additional Support Strategies for Teaching Cause and Effect:** For students that need support understanding and applying the concept of cause and effect, consider the following resource: Thinking Maps – visual representations of thinking – [http://www.scoe.org/files/AH\\_maps.pdf](http://www.scoe.org/files/AH_maps.pdf) and <http://www.nhcs.k12.nc.us/ogden/ThinkingMaps.html#MFM>. A sample multifold thinking map is included in the UDL Section of this document.

### Formative Assessment 2 –

After reading about how ecosystems change over time, write a paragraph explaining the cause and effect relationship between succession (either primary or secondary) and changes in ecosystems. Be sure to include transition words and vocabulary words that will help the audience understand the topic, as well as examples or details from the text to support your answer.

**Additional Support Strategies for making text/topic accessible:** For students that need support accessing grade level texts, visit the following website for and audio-visual explanation of secondary succession:  
[http://www.harcourtschool.com/activity/science\\_up\\_close/513/deploy/interface.html](http://www.harcourtschool.com/activity/science_up_close/513/deploy/interface.html)

### Vocabulary – Tier III

Pollution

Acid Rain

Habitat

Conservation

Reclamation

Deforestation

## Vocabulary – Tier II

Launched

Disposed

Properly

### Lesson Three – How do people affect ecosystems? (2-3 days)

- How do people’s actions change the environment?
- How can the environment be protected and restored?
- How is reclaiming an ecosystem different from protecting one?

**Lesson Summary** – Students will explore how people’s actions can change the environment. They will discuss ways in which the environment can be protected. Students will examine conservation (the protecting of resources by using less of them) and reclamation (repairing an already damaged ecosystem). Finally, students will come to understand that people can protect ecosystems by making sure they do not become polluted.

#### Reading Focus – Main Idea/Supporting Details

Pre-teach vocabulary for the lesson. ELL students will benefit from the use of visuals, which may include photographs or short video clips.

During the minilesson, model using a Main Idea/Supporting Details/Summary graphic organizer to determine the main idea(s) of an informational text and locating details in the text to support the main idea(s). Teacher should model/review how to complete the organizer.

Guide students through the reading of content, explaining that as they read they will be thinking about the main ideas of the text. They will also be looking for details in the text that will support the main ideas. Students read with a partner, stopping after each section to discuss the following questions:

Damaging Ecosystems – What are three ways that people damage ecosystems?

Protecting Ecosystems – List six ways you can help protect ecosystems.

Restoring Ecosystems – Why are wetlands important in reclamation?

Teachers should check for student understanding through discussion/questioning. Students will complete a Main Idea/Supporting Details/Summary graphic organizer to support them in identifying the main ideas of the text and supporting the main ideas with relevant details cited from the text.

#### Writing Focus – Introduction, Conclusion – Mentor Text – “Waste Woes”

Mentor Text – Trouble In Paradise, Lexile Level 850 Scholastic News, October 20, 2003.

(Can be accessed through the New York Online Virtual Electronic Library at [www.novelny.org](http://www.novelny.org)).

Project the text on an overhead or provide students with a copy of the text. After reading it with students, reread, highlighting examples of the author’s use of transition words throughout the text. Examples of transition words in the article include *while*, *yet*, *although*, *even*, *also*, and *many*. Have students begin a “Transition Words” chart in their notebooks or create a class chart that can be updated as students encounter new transition words.

#### Support/Reinforcement – Transition Words

Provide students that have not mastered the use of transition words in their writing additional opportunities to practice this skill by providing small group instructional support in identifying transition words (highlight as they are reading, add to their Transition Words chart in their notebook) in the article “Waste Woes.”

### Activity/Formative Assessment 3 –

Write a newspaper article on protecting ecosystems. Use the information you have obtained from your textbook/trade books and the article, “Waste Woes.” As you write, make sure that your lead paragraph summarizes two or more main ideas. The core paragraphs should contain more details, quotes, and interesting facts about the topic. Any pictures, illustrations, or graphs that you may include must have captions and be useful in helping the audience understand the topic you are writing about.

Be sure to:

- Introduce the topic in the first paragraph.
- Include a “hook” in the first paragraph to interest the reader in the rest of the article.
- Create core paragraphs, which go into more detail about the main topic.
- Include relevant interesting facts, text references, and quotes from your sources.
- Use transition words to link information and ideas.

**Additional Support Strategies for making activity accessible to all students:** For students that need support completing this activity, it may be assigned individually, in partnerships, or small groups. In addition, students may use the 5 W’s graphic organizer found in the supports section of this document to organize their thoughts and ideas.

### Newspaper Article Rubric

Level 1	Level 2	Level 3	Level 4
Reader fails to integrate information from several texts; only uses one source.	The reader minimally integrates information from several sources and/or may integrate information with inaccuracies.	The reader integrates explicit information from several sources to write about protecting ecosystems knowledgably.	The reader is able to integrate information from several sources and has the ability to integrate implicit and explicit information to write about the topic knowledgably.

**ADDITIONAL SUPPORT STRATEGIES – Extension Activity:** the following activity can be used as an extension activity after the final performance task for some students interested in additional challenges:

Research Project – Select an endangered species. Develop a plan to save the species from extinction. Use the information you have learned throughout the unit and the research you have done to create a PowerPoint that answers the following guiding questions:

What is the name of the species you selected?

What type of ecosystem can it be found in?

Describe the ecosystem – Where is it located? What types of animals live in the ecosystem?

Are there examples of symbiosis?

What are the causes of the species being endangered?

What type of plan could you develop to prevent the species from becoming extinct?

You will be presenting your research and plan to your classmates. Include visuals such as photographs, charts, graphs, sounds, video clips, etc. to make your presentation more interesting to your audience.

## RESOURCES

- All of the materials referenced in the activities/assessments are included in this list:
  - Core Curriculum Materials – Harcourt Science, New York City Edition OR New York City Science Kit Based Program, FOSS Environments Module or other similar science curriculum
  - Professional Resource – Marzano, Robert and Debra Pickering. *Building Academic Vocabulary*. Alexandria, VA: Association for Supervision and Curriculum Development, 2005, Print.
  - Professional Resource – Beck, I., McKeown, M., & Kucan, L. *Bringing words to life: Robust vocabulary instruction*. New York: Guilford, 2002, Print.
  - Professional Resource – Thinking Maps [http://www.scoe.org/files/AH\\_maps.pdf](http://www.scoe.org/files/AH_maps.pdf)
  - Professional Resource – Thinking Maps <http://www.nhcs.k12.nc.us/ogden/ThinkingMaps.html#MFM>
  
- The following resources/websites can provide additional information and support for teaching this unit:
  - Harcourt Online – [http://www.harcourtschool.com/menus/science/grade5\\_nyc.html](http://www.harcourtschool.com/menus/science/grade5_nyc.html)
  - Science Resource – Food Chain - [www.powerkidslinks.com/gosci/food](http://www.powerkidslinks.com/gosci/food)
  - Science Resource – Ecosystems - [www.powerkidslinks.com/lse](http://www.powerkidslinks.com/lse)
  - Harcourt Audio Resources <http://www.pottstownschoools.com/pottstown/Elementary%20Science%20Leveled%20Readers/Grade%205%20Level%20Readers/CH%206%20Below%20Ecosystems%20and%20Change.pdf>
  - Discovery Channel – <http://dsc.discovery.com/show-news/playful-polar-bear-cubs-spoil-moms-hunting-plans.html>
  
- Fiction Resources (Can be used as Read-Alouds to reinforce science concepts):
  - Cherry, Lynne. *The Great Kapok Tree*. San Anselmo CA: Sandpiper, 2000, Print. Lexile Level 670
  - Van Allsburg, Chris. *Just a Dream*. San Anselmo CA: Sandpiper, 1990, Print. Lexile Level 550
  - Klass, David. *California Blue*. New York: Scholastic, 1996, Print. Lexile Level 820

➤ Non-Fiction Resources

- Cherry, Lynne. *A River Ran Wild*. San Anselmo CA: Sandpiper, 2002, Print. Lexile Level 670
- Owls, Gibbons. Gail. *Owls*. New York: Holiday House, 2006, Print. Lexile Level 760
- Buckingham, Suzanne. *What If There Were No Bees? (Food Chain Reactions)*. North Mankato, MN: Capstone Press, 2010, Print.
- Dobson, David. *Can We Save Them?* Watertown, MA: Charlesbridge Publishing, 1997, Print. Lexile Level 1030
- “The Effects of Humans” Scholastic News Online  
<http://teacher.scholastic.com/scholasticnews/indepth/rainforest/effects.asp> Lexile Level 1100
- “Trouble In Paradise” *Scholastic News*, 20 October, 2003: 4-5 Can be accessed through [www.novelny.org](http://www.novelny.org) Lexile Level 850
- “Primates in Peril” *Weekly Reader* 8 March, 2010: 4-5 Can be accessed through [www.NOVELNY.org](http://www.NOVELNY.org) Lexile Level 1170,
- “Waste Woes” *Current Health*, March 2010: 11-13 can be accessed through [www.novelny.org](http://www.novelny.org) Lexile Level 940
- *Trading Trash for Treasure*, Lexile Level 960 – Text taken from New York City Periodic Assessment website <http://mcgraw.nycenet.edu/index.jsp>

## Learning Activities

### Pre-Assessment - Anticipatory Guide

Name \_\_\_\_\_

### Changing Ecosystems

	Agree	Disagree	Reasons
Natural changes in an ecosystem are always positive			
Changes that people make in an ecosystem always have negative consequences			
Its impossible to prevent certain animals from going extinct			
Competition among organisms impacts ecosystems in negative ways			



## Formative Assessment 1 – Collaborative Poster

### Student Directions

In your groups, create a collaborative poster on one of the following topics:

- Interactions in Nature
- Symbiosis
- Predator-Prey Relationships

Your group poster must include the following:

- Key vocabulary words with definitions
- Illustrations/diagrams
- Examples of each concept

Each student in the group will also write a one-paragraph summary of the text that determines two or more main ideas of the selected topic and how they are supported by key details from the text. Your group poster should be neat. All group members are expected to be involved in both creating and contributing ideas to the poster. Please be creative in your presentation.

### Collaborative Poster Rubric

Performance Indicators	High	Medium	Low
<p><b>Content</b></p> <p><b>RI.5.2 – Two or more main ideas supported by key details</b></p>	<p>Summary includes two or more main ideas with many key details related to the science topic.</p> <p>Domain specific vocabulary words are defined and accompanied by illustrations/diagrams.</p> <p>The poster successfully communicates the main idea of the text.</p>	<p>Summary includes two or more main ideas with several key details related to the science topic.</p> <p>Domain specific vocabulary words are defined and may be accompanied by illustrations/diagrams.</p> <p>The poster communicates the main idea of the text.</p>	<p>Summary includes one main idea or lacks a main idea and/or supporting details related to the science topic.</p> <p>Domain specific vocabulary words are not defined and are not accompanied by illustrations/diagrams.</p> <p>The poster fails to communicate the main idea of the text.</p>
<p><b>Presentation</b></p>	<p>Poster uses creative designs to show key ideas and details within the text.</p> <p>Poster effectively uses pictures, illustrations, and diagrams to present content.</p> <p>Poster is neat and organized.</p>	<p>Poster uses simple designs to show key ideas and details within the text.</p> <p>Poster uses pictures, illustrations, and diagrams to present content.</p> <p>Poster is neat.</p>	<p>The poster’s design is not related to key ideas and details.</p> <p>Poster minimally includes pictures, illustrations, and diagrams.</p> <p>Poster is not neat/organized.</p>
<p><b>Collaboration With Peers</b></p>	<p>During planning of the poster each student is actively involved and contributes to both the key ideas and the vocabulary.</p> <p>All group members encourage peers participation and work to incorporate their ideas into the poster.</p>	<p>During planning of the poster each student is actively involved and contributes to the key ideas and/or the vocabulary.</p> <p>All group members respond to each other’s ideas and contribute to the poster.</p>	<p>During planning, one or more students fail to contribute ideas/vocabulary.</p> <p>One or more group members does not contribute content to the poster.</p>



**Graphic Organizer - Main Idea/Details/Summary (Lesson 1 and Lesson 3)**

Topic

Main Idea

Supporting  
Details

Supporting  
Details

Supporting  
Details

Summary

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**Lesson 2 Activity**

Name \_\_\_\_\_ Date \_\_\_\_\_

**How do ecosystems change over time?**

	<b>Cause</b>	<b>Effect</b>
<b>Primary Succession</b>		
<b>Secondary Succession</b>		
<b>Extinction</b>		



### **Lesson 3 Activity/Formative Assessment**

Write a newspaper article on protecting ecosystems. Use the information you have obtained from your textbook/trade books and the article, "Waste Woes." As you write, make sure that your lead paragraph summarizes two or more main ideas. The core paragraphs should contain more details, quotes from the article, and interesting facts about the topic. Any pictures, illustrations, or graphs that you may include must have captions and be useful in helping the audience understand the topic you are writing about.

Be sure to:

- Introduce the topic in the first paragraph.
- Make sure to include a "hook" in the first paragraph to interest the reader in the rest of the article.
- Create core paragraphs, which go into more detail about the main topic.
- Include relevant interesting facts, text references, and quotes from your sources.
- Use transition words to link information and ideas.



## **Possible Activity/Extension to be Administered after Final Performance Task**

### Research Project –

You will be working on a project to save an endangered species. Select a species that you are interested in. Develop a plan to save the species from extinction. Use the information you have learned throughout the unit and the research you have done to create a PowerPoint presentation that answers the following guiding questions:

What is the name of the species you selected?

What type of ecosystem can it be found in?

Describe the ecosystem – Where is it located? What types of animals live in the ecosystem?

What types of predator/Prey relationships are found in this ecosystem?

Are there examples of symbiosis?

What are the causes of the species being endangered?

What type of plan could you develop to prevent the species from becoming extinct?

You will be presenting your research and plan to your classmates. Include visuals such as photographs, charts, graphs, sounds, video clips, etc. to make it more interesting to your audience.