Teacher Version			
Grade	**8**	**Title/Subject**	**Global Warming-Faunal Exchange**

The following sections are included in this Teacher Version:
- **Overview**
- **Process: Day 1, 2 and 3**
- **Teacher Directions for Scoring Rubric**
- **Student Directions and Article**

Overview

On Day 1 students will engage in a shared reading and note-taking activity using two informative texts and an optional video to learn about the topic. On Day 2, after the group activity, they will be directed to plan, and begin to draft an informative/explanatory writing piece about global warming and "faunal exchange" utilizing the information they read in the texts, viewed in the video, along with the notes they took during the shared lesson. On Day 3 students will finish their drafts, revise and edit their writing, and if they choose, produce a final copy.

Process

DAY 1: Shared Reading and Note-taking: Up to 60 minutes

Step 1: Connect to Background Knowledge

Provide an introduction to the classroom activity by indicating that after this activity, students will be writing an informative/explanatory writing piece about the topic. Ask students to discuss this orally. Possible questions could include:

"What do you know about global warming? How serious is this? What is faunal exchange and how does it affect animals and ecosystems? What can we citizens do to help the situation now and in the future?"

For active engagement encourage pair or group sharing, before sharing out with whole group.

Step 2: Viewing a video and Accessing the Text

1. Explain: *"Now we will watch a video and read about global warming and faunal exchange. There is a video and an article available. You will be writing an informative paper to your teacher about global warming and faunal exchange, picking a particular aspect of the topic including information from the article and video provided in your paper."* Read the article with the students and point out facts, details, and features (pictures, captions, etc.) Use ONLY the sources provided in this prompt packet.

2. Show the video clip: Here's a short video illustrating global warming.

   http://www.climatecentral.org/news/watch-63-years-of-global-warming-in-14-seconds-17012

3. Read the articles with the students as a shared reading. Encourage students to take margin notes as they read.

4. Lead a whole class discussion about the sources.

5. Think-Pair-Share: *"Tell your partner what you learned about global warming and faunal exchange."* Make sure both partners have time to share with each other.

6. Tell students they will now have the rest of the class period to take notes about what they have learned. Display the following writing prompt to help them organize their thinking and choose which evidence they want to capture for their essays:

==How do we know we have global warming? What are some of the effects of global warming? What are some ways people can help?==

DAY 2: Planning and Writing a Draft: Up to 60 minutes

Step 3: Clarify Expectations for the Writing Task:

Explain: *"In a few minutes you will have a chance to look at the sources, plan, and write a draft to demonstrate what you have learned about global warming and faunal exchange. Tomorrow you will have a chance to change and edit your work from today or add more detail."*

Review the student directions and checklist for the writing assignment and give each student a sheet of blank paper for planning and lined paper for writing.

Step 4: Clarify Expectations for the Writing Task:

Tell students to begin planning their writing on the blank sheet of paper. You can remind them of planning strategies you have taught in your classroom such as outlining, lists, or webs. Don't provide a plan yourself just remind them of the strategies for planning.

After 15 minutes, suggest to students that they begin writing their drafts.

Collect all materials from Day 2.

DAY 3: Up to 60 minutes

1. Allow students to access the sources, their notes, the classroom activity charts/key word lists, and their draft.

2. Direct students to re-read their draft from Day 2. Review the task using the student checklist poster. Remind them not to copy directly from the text.

3. When students are done writing, remind them to reread and edit.

4. Students may create a final draft or use word processing to publish their writing if time allows.

5. Collect all student writing materials.

Teacher Directions for Scoring Rubric:

Use the informative/explanatory writing rubric to score the writing and enter a score for each student into assessment log.

Grade	8	Informative Writing Rubric		
Level		**INFORMATIVE/EXPLANATORY WRITING**	**LANGUAGE CONVENTIONS**	**WITH GUIDANCE and SUPPORT FROM ADULTS**

4 Exceeds

INFORMATIVE/EXPLANATORY WRITING
- ☐ Meets all expectations in level 3
- ☐ Uses well chosen, relevant, and sufficient facts
- ☐ Maintains a formal style and objective tone in argument
- ☐ Document is very well presented and documented with excellent organization

LANGUAGE CONVENTIONS
Mostly correct use of language conventions, and some above grade level skills used, for example:
- ☐ Meets all expectations in level 3
- ☐ Uses parallel structure
- ☐ Uses a semicolon to link related dependent clauses
- ☐ Uses a colon to introduce a list or quotation

WITH GUIDANCE and SUPPORT FROM ADULTS

Guidance & Support

Level of guidance and support from adults before writing:

Check off what was done before the student wrote the piece being scored.
- ☐ Discussion
- ☐ Read aloud or shared reading
- ☐ Drawing
- ☐ Vocabulary word bank
- ☐ Shared or interactive writing
- ☐ Graphic organizer
- ☐ Language frames

3 Meets

INFORMATIVE/EXPLANATORY WRITING (W2)
- ☐ Introduces topic or thesis statement clearly, previewing what is to follow (W2a)
- ☐ Organizes ideas, concepts, and information into broader categories (W2a)
- ☐ Includes formatting (headings), graphics (charts/tables), and multimedia when aid comprehension (W2a)
- ☐ Develops topic with relevant well-chosen facts, definitions, concrete details, quotations, and other information/examples (W2b)
- ☐ Uses appropriate transitions to create cohesion and clarify relationships among ideas/concepts (W2c)
- ☐ Uses precise language and domain-specific vocabulary to inform/explain about topic (W2d)
- ☐ Establishes and maintains a formal style (W2e)
- ☐ Provides a concluding statement or section that follows from and supports the information or explanation presented (W2e)

WRITING PROCESS (W4-W8)
- ☐ Writes clearly and coherently and organization and style are appropriate to task, purpose and audience (W4)
- ☐ **WGASFA*** Develops and strengthens writing as needed, by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed (W5)
- ☐ Uses technology to produce writing and link to and cite sources (W6)
- ☐ Assesses credibility of each source and quotes/paraphrases the data/conclusions of each source (W8)
- ☐ Avoids plagiarism and follows a standard format for citation (W8)

Adequate use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:
- ☐ Uses verbs in indicative, imperative, interrogative, conditional, and subjunctive mood (L1c)
- ☐ Recognizes and corrects inappropriate shifts in verb voice and mood (L1d)
- ☐ Uses punctuation (comma, ellipsis, dash) to indicate a pause or break (L2a)
- ☐ Uses an ellipsis to indicate an omission (L2b)
- ☐ Spells correctly (L2c)
- ☐ Uses verbs in active/passive voice and in conditional/subjunctive mood to achieve particular effects (3a)

2 Almost Meets

- ☐ Introduction to topic or thesis statement is present but not clear
- ☐ Has some facts and details but may not be logical or relevant
- ☐ Does not establish or maintain a formal style
- ☐ Concluding statement may be unclear or not well supported
- ☐ Writing may not fully address audience, task, or purpose
- ☐ Language may not be precise or domain-specific

Limited use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:
- ☐ Contains some run-on sentences or fragments
- ☐ Uses mostly simple or compound sentences
- ☐ Does not use active/passive voice but otherwise consistent in expression
- ☐ Contains some punctuation errors
- ☐ Contains some capitalization or spelling errors

1 Does Not Meet

- ☐ Has very limited information on topic
- ☐ Has no formal style
- ☐ Includes little to no facts or focus
- ☐ Information is disorganized or missing

Infrequent use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:
- ☐ Contains many run-on sentences
- ☐ Contains many punctuation errors
- ☐ Contains many capitalization or spelling errors

- • **WGASFA**: "with guidance and support from adults"

This rubric was adapted from rubrics at sbusd.org and information from Smarter Balanced Assessments (www.**smarterbalanced**.org) using the California Common Core Standards at www.cde.**ca**.gov.
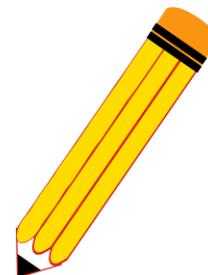
Smarter Balanced
Assessment Consortium

Student Version			
Grade	**8**	**Title/Subject**	Global Warming-Faunal Exchange

Student Prompt:

Write a multi-paragraph essay explaining what you understand about faunal exchange and the impact omn animals and ecosystems. Include information from the articles as you write.

Writing Tips:

- ☐ Be sure to introduce the topic or thesis statement and group related facts together.

- ☐ Use evidence from the two sources to develop your argument.

- ☐ Use linking words such as *also, another, and, more, but, another, for example, because, in contrast, especially* to connect ideas.

- ☐ Use definition, classification, compare/contrast, and cause/effect to organize your ideas.

- ☐ Maintain a formal style throughout your document.

- ☐ End with a conclusion.

Reminders:

- ☐ You can look at the sources and your key word list to help you with your writing.

- ☐ You might begin by making a plan or drawing a graphic organizer help you with your thinking.

- ☐ **Do not copy sentences from the sources.**

Step 1: Plan

Plan: review the texts and your notes

- ☐ Make a plan on the blank paper for your writing.

			Student Version
Grade	**8**	**Title/Subject**	**Global Warming-Faunal Exchange**

Step 2: Draft

- ☐ Introduce your subject and what you want to explain.
- ☐ Include evidence, facts, definitions, and concrete details to support your explanation.
- ☐ Group information together as you write.
- ☐ Use precise language and domain-specific vocabulary to inform or explain your topic.
- ☐ Write a concluding sentence or paragraph.
- ☐ Write a bibliography of sources for your paper.

Step 3: Reread and Revise

Reread your writing and revise:

- ☐ Does it make sense?
- ☐ Have you used science words from the text?
- ☐ Is there missing information you want to add?

Step 4: Edit

Reread your writing and revise:

- ☐ Capitals at the beginning of sentences
- ☐ Capitals for proper nouns, holidays, titles, etc.
- ☐ Punctuation: (end points) **.!?**
- ☐ Commas **,** quotation marks **" "**
- ☐ Spelling
- ☐ Complete sentences (avoid fragments and run-ons)
- ☐ Use verb tenses to show time, states, and conditions
- ☐ Use underlining, quotation marks or italics to indicate titles of works

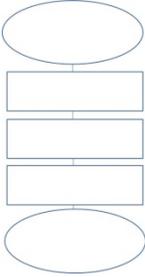## Step 5: Final Draft

- ☐ Recopy/type and fix your mistakes.

Good work! ☺

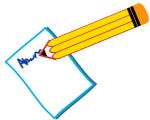|	**Student Version**
Grade 8 **Title/Subject**	Global Warming-Faunal Exchange

Informative Writing Poster

1. *Learn about a topic through research.*

2. *Take notes about what you learned on a graphic organizer or in the margins of the text.*

3. *Choose the information you want to include which goes with your explanation. Do not copy sentences directly from sources.*

4. *Plan your essay with an outline.*

5. *Write paragraphs to go with each section.*

6. *Use linking words to connect your ideas:*

7. *Write a conclusion to remind the reader of the explanation you wrote about.*

8. *Reread and revise: Does it make sense? Is there any missing information?*

9. *Reread and edit: Check*

   • *capitals*

   • *spelling*

   • *punctuation*

Punctuation	Capitals *only* where they go	Spelling	Spaces between all words	Paper is Neat
. ? ! " ,	• Beginning of sentence • Names • Months • Days of the week	• All word wall words • Harder words spelled using the sound cards and/or attempted spelling		• Handwriting • No smudges

10. *Type or write a final draft!*

11. *Be proud of your hard work!*

| Grade | 8 | Title/Subject | Global Warming-Faunal Exchange |

What are you doing in my ocean? Sea animals get strange new neighbors

By Washington Post, adapted by Newsela staff

12.21.15

Source: https://newsela.com/articles/arctic-barriers/id/13393/

Gray whales live in the Pacific Ocean. In the spring of 2010, though, a single gray whale was spotted in the Mediterranean Sea off the coast of Israel. It was the first time a gray whale was seen in the North Atlantic in about 200 years.

A research paper argues that climate change has led to more marine mammals, such as the Pacific white-sided dolphin pictured above, changing their migratory behavior. Photo: NOAA via Wikimedia Commons

Recently, strange animal sightings have been happening more often. Animals are showing up in places where they are normally never seen. In particular, creatures that live in the Pacific Ocean have been appearing in the Atlantic, and creatures that live in the Atlantic Ocean have been appearing in the Pacific.

Natural Barrier Is Melting

A group of scientists, led by a scientist named Seabird McKeon, published a paper last week about the strange pattern. The paper was released on Nov. 30 in the journal of Global Biology, a magazine for scientists. It argues that the reason animals are moving between the Atlantic and the Pacific may have to do with climate change.

The Arctic generally acts as a natural barrier between the Pacific and the Atlantic, keeping animals from moving between the two oceans. Marine mammals, such as whales or seals, are often prevented from moving through the Arctic by ice. The ice gets in their way and can block them from coming up to breathe. Birds are capable of flying over the frozen ocean, but the ice prevents them from diving for fish.

Scientists Suspect Climate Change

Climate change seems to be making such journeys easier, though. The earth's average temperature is gradually increasing. As the climate has become warmer, ice in the Arctic Sea has started to melt. As a result, passageways have opened up in the ice, allowing certain animals to cross through the Arctic. Scientists call these movements "faunal exchange."

"Animals on occasion get lost and they show up in strange places," said McKeon. However, he said that the recent pattern of faunal exchange was different.

The paper presents a list of marine mammals and birds that the authors expect will move between the Atlantic and Pacific more and more in the future. The list includes bird species such as Arctic terns, common eiders, Atlantic puffins and short-tailed shearwaters. Mammals on the list include beluga whales, ringed seals and Atlantic white-sided dolphins. Altogether, the list contains dozens of species.

Millions of Years Ago ...

No one can say for sure what effects the faunal exchange will have. To get some idea, though, McKeon and his team examined past examples of faunal exchange.

One example the authors considered is the Great American Biotic Interchange, a large exchange that occurred several million years ago. A thin strip of land called the Isthmus of Panama formed between North and South America. The new bridge allowed land animals to cross between the two continents for the first time. As a result, mammals from North America invaded South America and outcompeted many of the native species there for food or ate them. McKeon and his team argue that the current exchange between the Pacific and Atlantic may have similar effects.

Killer Whales Invade Hudson Bay

McKeon and his team also looked at what happened when killer whales moved into Hudson Bay, a large body of water in Canada. The whales started hunting Arctic marine mammals there. All of the sudden, those mammals had to be on the lookout for a predator they were not used to. Faunal exchange, in that case, altered the delicate balance of predators and prey, what scientists call the "food web."

Faunal exchange may lead to genetic changes as well. As animals move to new territories, they mix with new species. This can lead to interbreeding and may create new genetic combinations.

On Guard for New Threats

Given these possible effects, McKeon said that scientists should pay close attention to faunal exchange through the Arctic. The exchange may make some conservation efforts more complicated. Conservationists work to keep different species from dying out. If faunal exchange continues, it may create new threats. Conservation tactics may have to change and conservation agreements between countries may need to be updated.

Kirsten Oleson is a professor at the University of Hawaii and is one of the paper's co-authors. She said that there are not very many protections for animals in the Arctic currently in place. Historically, few protections were needed because the area was blocked off by ice. However, she noted that as more animals pass through the Arctic, "new environmental protections may need to be put in place."

Wait and See

At this point, scientists can only wait and see. Most scientists seem to agree that faunal exchange between the Pacific and Atlantic is already occurring, and will only increase as more passages open up in the Arctic. The exact effects of faunal exchange, however, remain to be seen.