**TEACHER RESOURCE PAC**

Grade 5



Based on the Writing for Understanding Approach, Vermont Writing Collaborative

Class Research Project on

How Human Activity Impacts the Environment

(Full Class Introduction to Research and Writing, Focus on Frogs)

*Note: Sample responses are included for teacher reference, actual student responses will vary.*

**Research Project Overview**

**Research Questions:** How has human activity affected the environment? What are individuals and communities doing to help protect the environment and the animals who live there?

**The “Rule of Three”: A Plan for Gradual Release of Responsibility**

**ENGAGEMENT:** Students listen to the picture *book Common Ground: The Water, Earth, And Air We Share* by Molly Bang and discuss how human actions affect the world we live in.

**INSTRUCTION:** After reading the anchor text, *A Place For Frogs* by Melissa Stewart aloud, the class focuses on two examples of human activities that cause problems for frogs, and potential solutions to these problems. Together, the class does research, takes notes and writes a class report on how human activity has affected frogs, and what individuals and communities are doing to help protect the environment and the frogs who live there.

**GUIDED PRACTICE:** The class divides into 4 study groups: fish, birds, turtles, and bats. Using the texts *A Place For Fish, A Place for Birds, A Place for Turtles, and A Place For Bats* and an additional website (provided below), each group researches how human activity affects their animal, and what individuals and communities are doing to help protect their animal and the environment in which it lives. Information is added to a set of group notes and discussed. Each student then writes an individual essay about the group’s animal.

**INDEPENDENT RESEARCH:** Students choose a different study animal: fish, birds, turtles, or bats and work through the research packet independently, adding at least one additional source of their own to the research.

Note: students use the same Writing Resource Pac for each stage of the Gradual Release of Responsibility.

**STANDARDS ADDRESSED**

NGSS Standard

**ESS3.C: Human Impacts on Earth Systems**

**Human activities** in **agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air,** and even outer space**. But individuals and communities are doing things to help protect Earth’s resources and environments.** (5-ESS3-1)

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CCSS Writing Standards:

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

1. 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.
2. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
3. Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*).
4. Use precise language and domain-specific vocabulary to inform about or explain the topic.
5. Provide a concluding statement or section related to the information or explanation presented.

W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

b. Apply *grade 5 Reading standards* to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]”).

Supporting CCSS Reading Standards:

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

RI.5.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

RI.8.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

**TEXTS**

Introductory Text (context/engagement): *Common Ground: The Water, Earth, And Air We Share* by Molly Bang

Anchor Text*: A Place For Frogs* by Melissa Stewart

Student Texts (for small group and individual research):

*A Place For Fish* by Melissa Stewart

*A Place For Birds* by Melissa Stewart

*A Place For Turtles* by Melissa Stewart

*A Place for Bats* by Melissa Stewart

Websites:

Paired with A Place for Frogs:

“Frogs, Toads and Salamanders Disappearing Fast:Study” by Baltimore Sun, adapted by Newsela staff

https://newsela.com/articles/amphibian-decline/id/180/

Paired with *A Place for Fish*:

“Starfish are Getting Sick: Scientists Want to Know Why” By McClatchy Washington Bureau, adapted by Newsela staff

<https://newsela.com/articles/starfish-deaths/id/8034/>

Paired with *A Place for Birds*:

“Whooping Crane Numbers Dwindle, but Hunters Still Shoot Them” By Los Angeles Times, adapted by Newsela staff

<https://newsela.com/articles/whoopingcrane-shooting/id/2738/>

Paired with *A Place for Turtles*:

“Playing a Shell Game Against Poachers” By Los Angeles Times, adapted by Newsela staff

https://newsela.com/articles/tortoise-shells/id/2477/

Paired with *A Place for Bats*:

“Bats are in Danger and They Could Use Some Help from Kids” by Christina Barron

http://www.washingtonpost.com/lifestyle/kidspost/bats-are-in-danger-and-they-could-use-some-help-from-kids/2013/08/08/a253a5a8-f497-11e2-a2f1-a7acf9bd5d3a\_story.html

**Sample Student Responses**

Below are sample student responses similar to those expected of student at the end of this sequence. Actual responses will vary. This section is for teacher reference only. DO NOT SHARE WITH STUDENTS.

CLASS RESEARCH PROJECT (Frogs)

SAMPLE GRAPHIC ORGANIZER

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| people spray chemicals to kill insects | frogs die too | stop using chemicals that harm frogs |
| farmers use chemicals to protect their crops | chemicals prevent frogs from growing normally | find new ways to protect crops |
| people use CFCs that destroy the earth’s atmosphere | too much sunlight hurts frog eggs | stop using CFCSandfind other ways to block the sun’s harmful rays |
| people plant new plants | frogs can’t find a place to lay their eggs | only plant plants that are originally from an environment |
| people introduce new fish into ponds | new fish eat the tadpoles | take the new fish out of the ponds |
| people build on top of frogs’ homes | frog homes are destroyed | protect ponds that frogs live in |
| people run over frogs | frogs are killed | stop traffic to keep frogs safe |
| people put out wild fires | frogs can no longer find food or homes | set controlled fires to restore frogs’ natural environment |
| people destroy forests and ponds that frogs live in | frogs don’t have a place to live | protect forests and ponds that frogs live in |
| people put garbage in caves that frogs live in | frogs can’t live in a dirty environment | clean and protect the caves that frogs live in |
| people use fossil fuels. This causes the earth to heat up. | frogs are dying from a fungus that grows because the earth is warmer | use less fossil fuels |

SAMPLE STUDENT ESSAY

Save Our Frogs!

Did you know that frogs have been living on the earth for over two hundred million years? Frogs have thrived in ponds and wooded areas, but frogs share this environment with humans. Human activities can have a strong impact on frogs. Many things that people do cause problems for frogs. Fortunately, there are some steps we can take to help protect the environment and the frogs who live there.

People often use chemicals to help food grow. Unfortunately, the chemicals that people use kill frogs, too. For example, in Northern California, lots of red-legged frogs died when farmers used poisonous chemicals to protect their crops. Similarly, in Henderson, Minnesota, the chemicals used in fertilizers got into the ponds where the frogs live and stopped the frogs from growing. But don’t worry, even though we have hurt frogs, we can help them too! When people noticed that frogs were dying from chemicals in Northern California, they took action. In 2006, The Center for Biological Diversity stopped people from using poisonous chemicals on their crops. In Minnesota, scientists are currently looking for a way to fix the problems caused by the chemicals. The chemicals people use have had a negative impact on frogs, but now that we are aware of the problem we are working towards a solution.

Even things that seem harmless to humans, like bringing new plants and animals into an environment, can have a negative impact on frogs. When people brought new kinds of grass to Oregon, the new grass was much thicker than the old grass. Frogs could not find the space to live and grow in this changed environment. Similarly, when people added trout to the lakes in the Sierra Nevada mountains, the fish ate the frogs that lived in the lakes. We made these problems, but we can fix them! When people noticed the frogs were being eaten by the fish, they decided to take the fish out of the lake. Now that we know what the grass is doing to the frogs, we can choose to plant only native grass. Moving plants and animals can have a big impact on their new environment. This knowledge can help us to be more careful about the choices that we make.

Frogs do a lot to keep humans healthy and safe. Frogs help our food to grow because they eat bugs that hurt crops, and they are an important part of the food chain. Human activities can have a strong impact on frogs, but we can choose to act in ways that help frogs, too. If we all take steps to protect frogs, we can make sure that they stick around for another two hundred million years!

SMALL GROUP RESEARCH PROJECT

|  |
| --- |
| Human Activity → Problem for the Fish → Solution |
| people set out nets for small fish | sharks get trapped in fishing nets  | stop fishing in the places where sharks live |
| people burn coal in power plants to make electricity | burning coal creates acid rain. Acid rain causes rocks to let off a material that hurts fish.  | use less electricity by using solar and wind power instead |
| farmers use chemicals to help their plants grow | when these chemicals get into water, they hurt fish | find ways to help crops grow without using harmful chemicals |
| people keep fish as pets  | there are less fish in the ocean | stop catching fish for pets |
| people collect fish for their body parts | fish die | pass laws that stop people from selling fish body parts |
| people put their pet goldfish into ponds  | goldfish eat the other fish who live in the pond | stop putting pet fish into ponds |
| people catch too many of the same kind of fish to eat | certain types of fish are in danger of extinction | pass laws to stop people from overfishing, and encourage people to cook less of certain kinds of fish |
| people destroy coral reefs | fish have nowhere to live | protect coral reefs |
| farmers take water from lakes and rivers for their animals | the level of the water falls and makes it hard for fish to live | find ways for farmers to use less water |
| people build roads and cut down trees | soil gets into streams and fills up holes between rocks so that fish cannot hide from predators | protect the forests |
| people build dams | fish can’t get to where they need to go | remove dams |

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| Human Activity → Problem for the Bats → Solution |
| people kill bats because they think they are dangerous | bats are killed | teach people that bats are not dangerous |
| people use wind turbines to make electricity | bats that fly too close to the turbines are killed because of the change in air pressure | turn off wind turbines when there is no wind |
| people use poisonous chemicals to kill insects | bats die of white nose syndrome because they are weakened by the poisons | stop using poisonous chemicals |
| people let their cats outside | cats kill bats | keep cats inside |
| people go into caves and disturb bat mothers and babies | bat mothers fly away and don’t come back and so the baby bats starve | build gates to keep people out of bat caves  |
| people turn woodlands into farms | bats have nowhere to live | protect natural areas where bats live |
| people cut down dead trees that bats sleep in | the bats have no place to sleep | stop cutting down dead trees |
| people build houses and shopping malls in the forests where bats live | bats starve, because the insects that bats eat need forest plants to survive | protect the forests |
| people trim the trees in their yards | bats don’t have a safe place to sleep  | stop trimming trees |
| people fill old mines that bats live in with rocks and dirt | bats die because they cannot get out of the mines | block mines with steel cages that bats can fly in and out of  |

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| Human Activity → Problem for the Birds → Solution |
| people use beaches | beachgoers accidentally step on bird eggs  | set aside some areas of the beach where people can’t go  |
| people cut down dead trees and no longer use wooden fence posts | birds have no place to build their nests | build nest boxes for birds |
| people build houses and shopping malls | there are no open fields for birds to build their nests in | people can set aside large grassy areas for birds |
| farmers use poisonous chemicals to protect their crops | birds eat the chemicals and cannot lay healthy eggs | stop using dangerous chemicals |
| people bring new animals into an environment | birds don’t have enough space to live in or enough food | stop bringing new animals into an environment and work to keep harmful invading animals out  |
| people build tall buildings and use bright lights | birds can’t see because of the lights and crash into buildings | turn off lights at night |
| people build buildings with windows | birds crash into the windows | mark windows with images or use a window shade |
| people let their pet cats outside  | cats attack birds | keep pet cats indoors |
| people cut down forests | birds have no place to live  | protect land and trees |
| people put out wildfires | without wildfires, there are no open woodlands for the birds to nest or find food in | restore woodlands |
| people build homes and grow crops | birds have no place to live | protect the places where birds live |

|  |
| --- |
| Human Activity → Problem for the Turtles → Solution |
| people bring new plants into turtle habitats | turtles can’t build their nests | people work to control the spread of new plants |
| people bring new fish into lakes and ponds | new fish eat baby turtles | move baby turtles to safe places |
| people fish | turtles get trapped in fishing nets | use nets with escape hatches for turtles |
| people use plastic shopping bags | turtles eat the shopping bags and the shopping bags clog their stomachs | stop using plastic shopping bags |
| people eat too many turtles | certain kinds of turtles are extinct | change the laws so that it is illegal to eat turtles |
| hikers let their dogs off leashes | turtles get injured by dogs  | keep dogs on leashes when hiking |
| people keep turtles as pets  | turtles can’t live and grow well in captivity  | stop keeping turtles as pets |
| people race turtles | when turtles from different places share germs with each other they can get sick | leave turtles alone |
| people drive cars | turtles get hit by cars | build fences along highways that keep turtles out |
| people build homes and businesses on the places where turtles live | turtles have nowhere to live | protect places where turtles live |
| people build buildings in the wetlands where turtles live | turtles have nowhere to live | create new shallow marshes and ponds |

Name:

Grade 5 Date:





Based on the Writing for Understanding Approach, Vermont Writing Collaborative

My Class Research Project on

How Human Activity Impacts the Environment

Research Questions:

How has human activity affected the environment?

What are individuals and communities doing to help protect the environment and the animals who live there?

Becoming an Expert

**Class Research Packet**

*Building Knowledge and Understanding through Research*



|  |
| --- |
| **Becoming an Expert** |
| Date Completed |  Steps |
|  | Where Am I Going? | Text Structure |
|  | First Read Part 1 | Close Read Part 1 |
|  | First Read Part 2 | Close Read Part 2 |
|  | The Fab Five | Rolling Knowledge Journal |
|  | Reading for Evidence |
|  | Recording Evidence |
|  | Additional Evidence | Focus Statement |
|  | Working with Evidence |

Research Question: How has human activity affected the environment?

What are individuals and communities doing to help protect the environment and the animals who live there?

**Where Am I Going?**

Work with your group to answer the questions below.

**?**

What is your research question?

How has human activity affected frogs? What are individuals and communities doing to help protect the environment and the frogs who live there?

Skim your source. In one or two sentences describe what this text is mostly about.

This text is mostly about how our actions impact frogs and the ways we can help keep frogs healthy and safe.

How will this source help you answer your research question?

This source will help me learn about how people affect frogs, and ways that people can help frogs.

Use the copyright information for your text to complete the section below.

Title: A Place For Frogs

Author: Melissa Stewart

Type of text: nonfiction book article website excerpt other

Publisher: Peachtree Publishers

Publication date: 2009



**Text Structure**

Your teacher will lead you in exploring your source and answering the questions below.

Let’s take a look at how your source is put together.

1. Leaf through the book. What patterns do you notice in how the pictures and text are arranged?
* There is text on the top of each page
* There is always a big picture that takes up the two pages that face each other
* There is a sidebar with text in every two page spread
* There is always a smaller picture next to the sidebar
1. Compare the text on the top of each page and the text in the sidebars. What do you notice about the amount of text in each place?
* There is more text in the sidebars than at the top of the page.
* The text at the top of the page is bigger than the text in the sidebar.
1. What do the pictures show us about the pages that face each other?
* The pictures show us that the two pages are related.
1. What is the relationship between the titles in the book and the map on the inside cover?
* The titles of the sidebars match the names of the different kinds of frogs on the map in the inside cover.



**First Read Part 1**

With your group, read the first part of the text aloud.

Use one of the options below to read pages 1-14 of the text aloud (page 1 refers to the first page of the text beginning “Frogs make our world a better place”). Check a box to show the option you chose.

Ideas for a First Read:

* Take turns reading, have each person read a page or paragraph.
* Choose one or two people to read aloud. The rest of the group reads along silently while listening.
* Listen to a recording of your book, reading along silently while you listen.
* Another idea:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Close Read Part 1**

With a partner, reread parts of your book for deeper understanding.

Work together to follow the directions in each box.

|  |  |
| --- | --- |
| Reread the first two pages with a partner and answer the question on the right.  | What context or background information does the author include about frogs in the first two pages? The author explains how frogs grow from tadpoles to adult frogs. |
| Reread the text at the top of pages 3 and 4 with a partner. Then complete the activities on the right. | Which page contains the problem? Page 3Write the problem here: People use poisonous chemicals to kill insects, but these chemicals hurt frogs too.Which page contains the solution? page 4Write the solution here: People can stop using poisonous chemicals to kill insects |
| Reread the text in the sidebar on page 3 with a partner and answer the questions on the right.  | How does the information in the sidebar build on the information in the text on the top of the page? The sidebar explains exactly why the chemicals hurt the frogs, and gives a specific example of this problem and how scientists are working to fix it. |



**First Read Part 2**

With your group, read the second part of the text aloud.

Use one of the options below to read pages 15-29 of the text aloud. Check a box to show the option you chose.

Ideas for a First Read:

* Take turns reading, have each person read a page or paragraph.
* Choose one or two people to read aloud. The rest of the group reads along silently while listening.
* Listen to a recording of your book, reading along silently while you listen.
* Another idea:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Close Read Part 2**

With your group, read the second part of the text aloud.

Work together to follow the directions in each box.

|  |  |
| --- | --- |
| Reread the text at the top of pages 23 and 24 with a partner then complete the activity on the right. | Which page contains the problem? page 23Write the problem here: Frogs are dying because of a fungus that is growing as a result of Global Warming.Which page contains the solution? Page 24Write the solution here: We can keep the fungus from growing and save frogs by using less fossil fuels  |
| Reread the text in the sidebar on page 24 with a partner then complete the activity on the right. | How does the information in the sidebar build on the information in the text on the top of the page? The sidebar gives more details about how many frogs have been impacted by this fungus, and explains more about the effects of global warming |
| Turn and Talk with a partner about the question on the right.  | What pattern do you notice? The left hand page explains the problem, and the right hand page suggests a solution. The sidebar offers more details and specific examples that develop the problem and solution concepts. |
| Reread pages 25-26 with a partner and Turn and Talk about the question on the right.  | Why is it important to protect frogs?Frogs are important because they are an important source of food for other animals.Frogs are important because they keep the fruits and vegetables we eat healthy.Frogs are important because they let us know when there are dangerous changes in our environment. |



**The “Fab Five”**

With a partner, identify 5 important words from the text.

From your central text, choose 5 words that are important to understanding the central idea of the text.

Next use your 5 words to write about the most important idea of the text. Write one sentence for each word.

|  |  |
| --- | --- |
| **Important Word** | **Sentence about the Central Idea** |
| 1. atmosphere  | When people use chemicals that destroy the atmosphere, frogs are hurt because there is too much sunlight. |
| 2. habitat | When people destroy a frog’s habitat the frog does not have anywhere to live. |
| 3. native | When people bring plants and animals that are not native into a habitat, it can hurt frogs. |
| 4. restore | If we restore the natural habitats in which frogs live, we can help keep frogs safe and healthy. |
| 5. extinct | If people do not take actions to help protect frogs, more species of frogs may become extinct. |



**Rolling Knowledge Journal**

Keep track of all you’re learning!

1. After you read *each* resource, stop and think about what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text about (topic).
2. Then write, draw, or list how this new resource added to what you learned from the last resource(s). Add pages if needed.

|  |  |
| --- | --- |
|  | **Write, Draw, or List** |
| **Title** | **New and important learning about the topic** | **How does this resource add to what I learned already?** |
| Common Ground: The Water, Earth, And Air We Share | I learned that we hurt the earth when we use up too many of the resources we need  |  |
| A Place for Frogs | I learned that there are many things that humans do to the earth than can hurt frogs | I learned that when humans use too many resources like fossil fuels and wood it also hurts animals like frogs.  |
| Frogs, Toads and Salamanders Disappearing Fast: Study | Many kinds of frogs are disappearing very fast in the United States | frogs are even vanishing from ponds, streams, national parks and other areas where they are protected |



**Reading for Evidence**

Work as a group to gather and share information that will help you answer your research question.

Follow these steps to complete the graphic organizer together:

1. First, break into groups. Assign each group a part of the text to reread and search. Record the assignments below.

|  |  |
| --- | --- |
| Section (page numbers) | People responsible |
| 3-8 |  |
| 9-14 |  |
| 15-20 |  |
| 21-26 |  |

1. As a group, look at the graphic organizer. Discuss: What is your Research Question? What kinds of information will go in each column?
2. Now reread the part of the text you were assigned. When you find a part of the text that will help you answer your research question **mark it with a sticky note.** Use the sidebar for specific examples.
3. Repeat this process until all the important information from this section has been marked.



**Recording Evidence**

Share what you have found with your group to complete the graphic organizer.

Focusing Question: How has human activity affected frogs? What are individuals and communities doing to help protect the environment and the frogs who live there?

1. Meet with the full group again. Take turns sharing one piece of information you found. Talk about what words or phrases to write on the graphic organizer, then fill in the appropriate row on your own organizer. You will need notes on all the information found by the group for your final project.
2. Repeat this process until all the information from this source has been recorded on your graphic organizer.

Note: Students sort, synthesize, and color code the evidence in their graphic organizer in the Working with Evidence: Evidence Sort activity later in the lesson. The color-coding in the model graphic organizer below reflects this later work.

The model graphic organizer below also includes new evidence from the Additional Evidence activity that follows the Recording Evidence activity. New evidence from the Additional Evidence Activity is italicized.

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| people spray chemicals to kill insects | frogs die too | stop using chemicals that harm frogs |
| farmers use chemicals to protect their crops | chemicals prevent frogs from growing normally | find new ways to protect crops |
| People use CFCs that destroy the earth’s atmosphere | too much sunlight hurts frog eggs | stop using CFCandfind other ways to block the sun’s harmful rays |
| people plant new plants | frogs can’t find a place to lay their eggs | only plant plants that are originally from an environment |
| people introduce new fish into ponds | new fish eat the tadpoles | take the new fish out of the ponds |
| people build on top of frogs’ homes | frog homes are destroyed | protect ponds that frogs live in |
| people run over frogs | frogs are killed | stop traffic to keep frogs safe |
| people put out wild fires | frogs can no longer find food or homes | set controlled fires to restore frogs’ natural environment |
| people destroy forests and ponds that frogs live in  | frogs don’t have a place to live | protect forests and ponds that frogs live in |
| People put garbage in the caves that frogs live in | frogs can’t live in a dirty environment | clean and protect the caves that frogs live in |
| people use fossil fuels. This causes the earth to heat up. | frogs are dying from a fungus that grows and thrives because the earth is warmer | use less fossil fuels |
| *People spread salt on roads to melt ice*  | *the salt gets into the water and kills the insects that frogs eat. the salt gets on the frogs skin and dehydrates them so that they die of thirst.* | *find new ways to melt ice* |



**Additional Evidence**

On your own or with a partner, add additional information to the graphic organizer.

Read one or more additional sources. Mark information that will help you answer the research question with sticky notes. Add it to your own graphic organizer. Use a different colored pencil for each source, so you will remember where your information came from.

Using the same colored pencils, list your additional sources below.

Title: Frogs, Toads and Salamanders Disappearing Fast: Study

Author: Baltimore Sun, Adapted by Newsela Staff

Publisher/URL: https://newsela.com/articles/amphibian-decline/id/180/

Title:

Authors:

Publisher/URL:

Note: See graphic organizer in the Recording Evidence activity above for model additional evidence (*marked in italics*).

*--------------------------------------------------------------------------------*

**THE FOCUS STATEMENT!**

Sum up what you have learned.

What is the “big idea”?

Look carefully at all of the evidence you have gathered. What is the “big idea” your evidence shows? Try to state what you have learned in just a sentence or two, and it might even take three. Your teacher and classmates will help you.

Focus Statement: Human activities can have a strong impact on frogs. Many things that people do cause problems for frogs. Fortunately, there are some steps we can take to help protect the environment and the frogs who live there.

 **EVIDENCE SORT**

**Working with Evidence**

Work with your group to better understand the information you have gathered.

*An activity to help you organize your evidence*

Congratulations – you have collected lots of evidence to help you answer your research question! Now you are going to work together to organize the pieces of evidence you found.

Prepare for this activity by putting each human activity from the Recording Evidence graphic organizer on a separate card or sticky note.

Work as a group to sort your evidence in a way that makes sense. Begin by putting similar pieces of evidence together. Don’t be afraid to move the evidence around and try different ideas. Share your thinking - talk about what you are doing and why. Remember, you do not need to include every piece of evidence in the sort.

Once you have put the evidence in groups that make sense, add a descriptive title to each group. The title should explain why you chose to put that evidence together. Each member of your group should be prepared to explain the reasoning behind the decisions you made.

Once you have finished your sort, select two groups of evidence on which you will focus your Research Paper. Go back to your Recording Evidence graphic organizer and color code the “problem for the animal” evidence you will write about in yellow. Then color code the “solution to the problem” evidence you will write about in blue. Each group of evidence will contain both yellow (problem for the animal) and blue (solution for that problem).

Evidence Sort Model Categories and Evidence:

* Chemicals

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| people spray chemicals to kill insects | frogs die too | stop using chemicals that harm frogs |
| farmers use chemicals to protect their crops | chemicals prevent frogs from growing normally | find new ways to protect crops |
| People use CFCs that destroy the earth’s atmosphere | too much sunlight hurts frog eggs | stop using CFCandfind other ways to block the sun’s harmful rays |
| *People spread salt on roads to melt ice*  | *the salt gets into the water and kills the insects that frogs eat. the salt gets on the frogs skin and dehydrates them so that they die of thirst.* | *find new ways to melt ice* |

* Non-native Species

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| people plant new plants | frogs can’t find a place to lay their eggs | only plant plants that are originally from an environment |
| people introduce new fish into ponds | new fish eat the tadpoles | take the new fish out of the ponds |

* Hurting the Environment

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| People put garbage in the caves that frogs live in | frogs can’t live in a dirty environment | clean and protect the caves that frogs live in |
| people use fossil fuels. This causes the earth to heat up. | frogs are dying from a fungus that grows and thrives because the earth is warmer | use less fossil fuels |
| people put out wild fires | frogs can no longer find food or homes | set controlled fires to restore frogs’ natural environment |

* Building

|  |
| --- |
| Human Activity → Problem for the Frog → Solution |
| people build on top of frogs’ homes | frog homes are destroyed | protect ponds that frogs live in |
| people destroy forests and ponds that frogs live in  | frogs don’t have a place to live | protect forests and ponds that frogs live in |

**Now you are ready to write!**

Use your Writing Resource Packet to write an informative explanatory piece. Put the date next to each step when you complete it



**Sharing Your Expertise Record Sheet**

|  |
| --- |
| *Use this record sheet with your Writing Resource Packet to deepen your understanding and communicate what you have learned.* |
| Date | Steps |
|  | Learn from the Model | Write an Introduction |
|  | Write Proof Paragraph 1 |
|  | Write Proof Paragraph 2 |
|  | Write a Conclusion |
|  | Revise and Edit | Add a Visual |
|  | Share and Celebrate! |



 **Sharing Your Expertise**

**Writing Resource Packet**

 *Deepening Your Understanding and Communicating What You Have Learned*

**Save this packet**, you will use it as a resource each time you

write about how human activity impacts the environment.

As you finish each step, record the date on the Sharing Your Expertise Record Sheet.

|  |
| --- |
| **Writing Resource Packet**You will follow these Steps to Write an Informative/Explanatory Piece |
| Learn from a Model |
| Write an Introduction |
| Write Proof Paragraph 1 |
| Write Proof Paragraph 2 |
| Write a Conclusion |
| Revise and Edit |
| Add a Visual |
| Share and Celebrate! |

**Analyze a Model**

Read the model on the next page. Then follow the directions below to analyze the piece.



#1: Reread Proof Paragraph 1 (beginning “humans often kill plants”). Put a slash (/) between the “problem part” of the paragraph and the “solution part” of the paragraph. Then, underline the transition sentence between the “problem part” of the paragraph and the “solution part” of the paragraph.

#2: Reread Proof Paragraph 2 (beginning “Other activities that seem harmless to humans”). Put a slash (/) between the “problem part” of the paragraph and the “solution part” of the paragraph. Then, underline the transition sentence between the “problem part” of the paragraph and the “solution part” of the paragraph.

#3: Discuss with a partner… What do you notice about how each proof paragraph is organized?

Save Our Butterflies!

Did you know that butterflies have been living on the earth for 140 million years? Butterflies have thrived in forests, swamps, and marshes, but butterflies share their environment with humans. Human activities can have a strong impact on butterflies. Many things that people do cause problems for butterflies. Fortunately, there are some steps we can take to help protect the environment and the butterflies who live there.

Humans often kill plants that cause problems for us. Unfortunately, sometimes butterflies need these plants to live and grow. For example, sometimes farmers cut down milkweed because it is poisonous for livestock. But butterflies need milkweed to lay their eggs. Similarly, forest rangers kill dwarf mistletoe because it is bad for trees that are used to make paper. Unfortunately, dwarf mistletoe is an important food for caterpillars. **/** But don’t worry, even though we have caused problems for butterflies, we can help them too! Forest rangers and farmers can choose to let plants like dwarf mistletoe and milkweed grow. Our choice to kill some plants has had a negative impact on butterflies, but this knowledge can help us to be more careful about the choices that we make.

Other activities that seem harmless to humans, like building, can have a negative impact on butterflies. For example, in Western Massachusetts people destroyed butterflies’ homes by building their own homes and stores. Similarly, in California, people built a baseball field on top of the Palos Verdes Blue butterflies’ homes and so the butterflies had no place to live. **/** We made these problems, but we can fix them! For example, in California people encouraged the butterflies to come back by planting flowers butterflies like to eat. In New England, people stopped mowing the grass in the places where butterflies live. Now that we understand the impact we have on butterflies and their environments, we can think carefully about how to preserve safe spaces for butterflies to live and grow.

Butterflies are important because they help plants live and grow through pollination, and because they are an important source of food for many animals. Human activities can negatively affect butterflies, but we can choose to act in ways that help butterflies too. If we pay attention to and lessen our impact on the environment, butterflies can live and grow for another 140 million years!



**Write!**

On your own, write, revise and edit the **introduction** for your informative/explanatory essay.

*The first paragraph of your essay is called the INTRODUCTION. The job of the introduction is to give some background information, or context, so that the reader can understand the piece. In your introduction, provide context by introducing your focus animal and explaining what they need to live and grow.*

*The introduction must also catch your reader’s attention, so that they will want to read more! At the end of the introduction is your FOCUS. The FOCUS tells the main idea of your piece. In this essay, your focus is made up of three sentences. The first sentence, called the stem, tells the reader that humans have an impact on your focus animal. The second sentence explains that people can cause problems for your focus animal. The third sentence explains that there are steps people can take to reduce their impact on your focus animal.*

***Analyze***

Read the model introduction below. Lightly shade the context red and the focus statement green (stem), yellow (problem) and blue (solution).

 Did you know that butterflies have been living on the earth for 140 million years? Butterflies have thrived in forests, swamps, and marshes, but butterflies share their environment with humans. Human activities can have a strong impact on butterflies. Many things that people do cause problems for butterflies. Fortunately there are some steps we can take to help protect the environment and the butterflies who live there.

***Talk***

With a partner talk about what you are going to write. Check to be sure you each have a clear focus statement.

***Write***

On a piece of lined paper, write the introduction for your piece.

***Revise and Edit***

When you have finished, revise and edit your paragraph so that your writing is clear and correct.



**Write!**

On your own, write, revise and edit **proof paragraph one** of your informative/explanatory essay.



*The next paragraph is called PROOF PARAGRAPH 1. Its job is to give evidence and reasons to support and develop your focus statement. In this paragraph, your first point is to establish a human activity that causes problems for your focus animal. Use examples from the “human activity” part of your graphic organizer. Then, explain one or two examples of how that activity impacts your focus animal. You will find these examples on the “problems” part of your graphic organizer. Finally, offer potential solutions to this problem, using the “solutions” part of your graphic organizer.*

***Analyze***

Read the model proof paragraph below. Underline the words that explain the human activity that causes a problem for your animal. Lightly shade the two examples of this activity yellow. Then shade the sentences that offer solutions to the problem blue.

 Humans often kill plants that cause problems for us. Unfortunately, sometimes butterflies need these plants to live and grow. For example, sometimes farmers cut down milkweed because it is poisonous for livestock. But butterflies need milkweed to lay their eggs. Similarly, forest rangers kill dwarf mistletoe because it is bad for trees that are used to make paper. Unfortunately, dwarf mistletoe is an important food for caterpillars. But don’t worry, even though we have caused problems for butterflies, we can help them too! Forest rangers and farmers can choose to let plants like dwarf mistletoe and milkweed grow. Our choice to kill some plants has had a negative impact on butterflies, but this knowledge can help us to be more careful about the choices that we make.

***Talk***

Choose three pieces of evidence from your graphic organizer to use in your writing. With a partner, point to each piece you have chosen and talk about what you are going to write.

***Write***

Reread what you have already written. Then, underneath the introduction, write the first proof paragraph for your piece.

***Revise and Edit***

When you have finished, revise and edit your paragraph so that your writing is clear and correct.

**Write!**

On your own, write, revise and edit **proof paragraph two** of your informative/explanatory essay.



*The next paragraph is called PROOF PARAGRAPH 2. Its job is to give evidence and reasons to support and develop your focus statement. In this paragraph, just as you did in Proof Paragraph 1, your first point is to establish a human activity that causes problems for your focus animal. Use examples from the “human activity” part of your graphic organizer. Then, explain by giving one or two examples of how that activity impacts your focus animal. You will find these examples on the “problems” part of your graphic organizer. Finally, offer potential solutions to this problem, using the “solutions” part of your graphic organizer.*

***Analyze***

Read the model proof paragraph below. Underline the words that explain the human activity that causes a problem for your animal. Lightly shade the two examples of this activity yellow. Then shade the sentences that offer solutions to the problem blue.

 Other activities that seem harmless to humans, like building, can have a negative impact on butterflies. For example, in Western Massachusetts people destroyed butterflies’ homes by building their own homes and stores. Similarly, in California, people built a baseball field on top of the Palos Verdes Blue butterflies’ homes and so the butterflies had no place to live. We made these problems, but we can fix them! For example, in California people encouraged the butterflies to come back by planting flowers butterflies like to eat. In New England, people stopped mowing the grass in the places where butterflies live. Now that we understand the impact we have on butterflies and their environments, we can think carefully about how to preserve safe spaces for butterflies to live and grow.

***Talk***

Choose three pieces of evidence from your graphic organizer to use in your writing. With a partner, point to each piece you have chosen and talk about what you are going to write.

***Write***

Reread what you have already written. Then, underneath the first proof paragraph, write the second proof paragraph for your piece.

***Revise and Edit***

When you have finished, revise and edit your paragraph so that your writing is clear and correct.



**Write!**

On your own, write, revise and edit the **conclusion** for your informative/explanatory essay.

*The final paragraph is called a CONCLUSION. Its job is to wrap up the piece.*

*In your conclusion, you need to repeat your focus, but you also need to add a sentence or two of reflection on why it’s important to protect your focus animal.*

***Analyze***

Read the model conclusion below. Find the restated focus and lightly shade it green.

 Butterflies are important because they help plants live and grow through pollination, and because they are an important source of food for many animals. Human activities can negatively affect butterflies, but we can choose to act in ways that help butterflies too. If we pay attention to and lessen our impact on the environment, butterflies can live and grow for another 140 million years!

***Talk***

With a partner talk about what you are going to write. Check to be sure you have clearly restated the focus.

***Write***

Reread what you have already written. Then, on a piece of lined paper, write the conclusion for your piece.

***Revise and Edit***

When you have finished, revise and edit your paragraph so that your writing is clear and correct. At the end of your piece, list the sources you used in your research. Be sure to include the title or website address and the author.





**Final Revision and Editing**

Use the checklist below to put the final touches on your paper.

|  |  |
| --- | --- |
| **Informative/Explanatory Writing Checklist** | **Got it!** |
| My piece brings together knowledge and understanding from several sources to demonstrate what I have learned in my research. I list my sources.  |   |   |  |
| I have an introduction that gives the reader background information that they need to understand the topic.  |   |   |  |
| I state my focus clearly and my writing stays focused.  |   |   |  |
| The evidence from the text that I chose helps the reader to understand my focus. |   |   |  |
| My evidence is organized in paragraphs and grouped logically in order to link ideas in a way that supports my focus statement.  |   |   |  |
| I use linking words, phrases, and clauses to connect ideas.  |   |   |  |
| I use concrete details, quotations, or other information and examples from the text to explain my ideas.  |   |   |  |
| I use my own words when I explain evidence from the text and include science words to show that I am knowledgeable about this topic.  |  |  |  |
| I have a conclusion that restates the focus of the piece and reflects on the information I presented in my piece.  |   |   |  |



 **Add a Visual!**

Choose from the ideas below:

**Add a Visual!**

Choose from the ideas below.

|  |
| --- |
| You may want to add:* A drawing of your animal
* A labeled drawing of your animal’s environment, showing what it needs to live and grow.
* An illustration showing how humans can help your animal
* A sidebar adding more information about your animal
 |

**Share and Celebrate!**

Congratulations! You are an expert (and a scholar!).

Your teacher will share plans for sharing and celebration!

If you want to learn even more, check out these resources:

* “Monarch Migration Becoming a Dangerous Journey” By McClatchy Foreign Staff, adapted by Newsela staff

<https://newsela.com/articles/monarch-crisis/id/3432/>

* “To Save Fish, Conservation Loops in the Locals” by Discovery News

<http://news.discovery.com/earth/fiji-fishing-conservation-cultures.htm>

* “With Jaguars Disappearing, a Search for Survivors” by Discovery News

<http://news.discovery.com/animals/jaguars-cats-conservation-costa-rica-110321.htm>

* “Trading Shark Steak for Shark Conservation” by Debbie Salamone

<http://news.discovery.com/animals/sharks/trading-shark-steak-for-shark-conservation-140808.htm>

* “Ecuador Releases 201 Tortoises on Galapagos Islands” by AFP

<http://news.discovery.com/animals/endangered-species/ecuador-releases-201-tortoises-on-galapogos-island-150628.htm>

* “Lions Face Extinction in West Africa” by Tia Ghose

http://news.discovery.com/animals/endangered-species/lions-face-extinction-in-west-africa-140109.ht