



Task: The Ghost Shrimp Problem



Part 1: Student Directions

Your Assignment: Your local fisheries are struggling with a challenging problem. They are trying to protect the oyster beds from the increasing number of burrowing ghost shrimp that are overpopulating this habitat and making it unsuitable for raising oysters. Chemicals have been used to control the ghost shrimp populations in the past, but were stopped because of concerns about polluting the waters and harming other sea life. You have been asked to explain the controversy over using chemicals to solve the ghost shrimp problem. Share in an essay a clear summary of the problem involving ghost shrimp and oysters, pros and cons for using chemicals, and what your personal opinion is with evidence from the sources. Your work will be shared with the local fisheries for their review and reflection.

Steps you will follow:

To plan and compose your essay, you will do the following:

1. View one video, listen to or read one article and read four additional articles, taking notes on the sources.
2. Answer three research questions about the sources.
3. Write your essay.

Directions for beginning:

You will now watch a video introducing the Ghost Shrimp problem. Then you will listen to an article (or read the article), and read four more articles, taking notes with the templates provided. You may refer back to the sources and your notes when answering the research questions and writing your essay.

Sources information:

- Source #1: Video: Overview of Ghost Shrimp Issue <https://www.youtube.com/watch?v=f9hUhGmncFU>
- Source #2: Article: Willapa Bay Oyster Farmers Struggle As Shrimp Population Booms <https://www.opb.org/news/article/washington-willapa-bay-oysters-ghost-shrimp/>
- Source #3: Article: Simply Science, Part IV: Ghosts Under the Oyster Bed <https://smea.uw.edu/currents/ghosts-under-the-oyster-bed-why-the-washington-department-of-ecology-rejected-a-new-pesticide-for-oyster-farms/>
- Source #4: Article: Department of Ecology Determination Letter to Mr. Ken Wiegardt, President of Willapa-Grays Harbor Oyster Growers Association, Denying Using Chemicals to Counter Ghost Shrimp <https://ecology.wa.gov/DOE/files/9f/9f907372-0c3d-4d5c-aea2-116a38516e10.pdf>
- Source #5: Article: Burrowing Shrimp Control (Imidacloprid) <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Aquatic-pesticide-permits/Burrowing-shrimp-control-Imidacloprid>
- Source #6: Article: Coalition of Coastal Fisheries letter supporting the use of chemicals to control ghost shrimp <https://protectwillapabay.org/wp-content/uploads/2017/12/Coalition-of-Coastal-Fishers.pdf>

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Note Taking Tool #1: The Ghost Shrimp Problem

| Source | How the oyster industry is being hurt by ghost shrimp | What the oyster farmers would like to see happen |
|---|---|--|
| Source #2: Willapa Bay Oyster Farmers Struggle | | |
| Source #3: Simply Science Student Blog | | |
| Source #6: Coalition of Coastal Fisheries | | |



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Note Taking Tool #2: Controlling the Ghost Shrimp Population

| Source | Arguments for using chemicals | Arguments against using chemicals |
|---|-------------------------------|-----------------------------------|
| Source #2: Willapa Bay Oyster Farmers Struggle | | |
| Source #3: Simply Science Student Blog | | |
| Source #4: Department of Ecology 2018 Determination | | |
| Source #5: Burrowing Shrimp Control Dept. of Ecology | | |
| Source #6: Coalition of Coastal Fisheries | | |



Task: The Ghost Shrimp Problem



PART 2: Essay

Student Directions:

Your Assignment: Your local fisheries are struggling with a challenging problem. They are trying to protect local oyster beds from the increasing number of burrowing ghost shrimp that are overpopulating this habitat and making it unsuitable for raising oysters. Chemicals have been used to control the ghost shrimp populations in the past but were stopped because of concerns about polluting the waters and harming other sea life. You have been asked to explain the controversy over using chemicals to solve the ghost shrimp problem.

Share in an essay a clear summary of the problem involving ghost shrimp and oysters, pros and cons for using chemicals, and what your personal opinion is with evidence from the sources. Your work will be shared with the local fisheries for their review and reflection.

How your informational/explanatory essay will be scored:

1. **Statement of Purpose/Focus-** how well you clearly state and maintain your controlling idea or main idea.
2. **Organization-** how well the ideas progress from the introduction to the conclusion using effective transitions and how well you stay on topic throughout the essay.
3. **Elaboration of Evidence-** How well you provide evidence from sources about your topic and elaborate with specific information.
4. **Language and Vocabulary-** how well you effectively express ideas using precise language that is appropriate for your audience and purpose.
5. **Conventions-** how well you follow the rules of usage, punctuation, capitalization, and spelling.

Now begin work on your essay:

- Review your notes.
- Plan your essay using the template provided.
- Write your essay.
- Revise and edit for a final draft.

Teacher Note: You determine how much time you want to allow for the essay including the number of writing sessions. Be sure to provide the students with the essay organizer included or one of your choice.



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Essay Organizer: The Ghost Shrimp Problem

| | |
|---|--|
| Situation (Introduction): | |
| Problem (Thesis Statement): <i>(May want to state as a question: What's the best solution to the Ghost Shrimp Problem?)</i> | |
| Pros and Cons of Using Chemicals to Solve the Ghost Shrimp Problem (Body): | |
| Pros (include source for each): | Cons (include source for each): |
| My Preferred Solution and Why: | |

Be sure to use at least three of the sources in your essay. Cite your sources!

Informative / Explanatory Writing Rubric (Grades 6-11)

Scoring Version



| Score | 4 | 3 | 2 | 1 |
|----------------------------|---|---|--|--|
| Statement of Purpose/Focus | <p>The response is fully sustained and consistently and purposefully focused:</p> <ul style="list-style-type: none"> consistent or main idea of a topic is clearly communicated, and the focus is strongly maintained for the purpose, audience, and task | <p>The response is adequately sustained and generally focused:</p> <ul style="list-style-type: none"> controlling or main idea of the topic is clear, and the focus is mostly maintained for the purpose, audience, and task | <p>The response is somewhat sustained and may have a minor drift in focus:</p> <ul style="list-style-type: none"> controlling or main idea of a topic may be somewhat unclear, and the focus may be insufficiently sustained for the purpose, audience, and task | <p>The response may be related to the topic but may provide little or no focus:</p> <ul style="list-style-type: none"> controlling or main idea of the topic may be somewhat confusing or ambiguous; response may be too brief or the focus may drift from the purpose, audience, and task |
| Organization | <p>The response has a clear and effective organizational structure creating unity and completeness:</p> <ul style="list-style-type: none"> consistent use of a variety of transitional strategies to clarify the relationships between and among ideas effective introduction and conclusion logical progression of ideas from beginning to end; strong connections between and among ideas, with some syntactic variety | <p>The response has an evident organizational structure and a sense of completeness, though there may be minor flaws and some ideas may be loosely connected:</p> <ul style="list-style-type: none"> adequate use of transitional strategies with some variety to clarify the relationships between and among ideas adequate introduction and conclusion adequate progression of ideas from beginning to end; adequate connections between and among ideas | <p>The response has an inconsistent organizational structure, and flaws are evident:</p> <ul style="list-style-type: none"> inconsistent use of transitional strategies with little variety introduction and conclusion, if present, may be weak uneven progression of ideas from beginning to end; and/or formulaic; inconsistent or unclear connections between and among ideas | <p>The response has little or no discernible organizational structure:</p> <ul style="list-style-type: none"> few or no transitional strategies are evident introduction and conclusion, if present, may be missing frequent extraneous ideas may be evident; ideas may be randomly ordered or have an unclear progression |
| Elaboration of Evidence | <p>The response provides thorough and convincing support/evidence for the controlling idea and supporting idea(s) that includes the effective use of sources, facts, and details.</p> <ul style="list-style-type: none"> comprehensive evidence from sources is integrated; references are relevant and specific effective use of a variety of elaborative techniques* | <p>The response provides adequate support/evidence for the controlling idea and supporting idea(s) that includes the use of sources, facts, and details:</p> <ul style="list-style-type: none"> adequate evidence from sources is integrated; some references may be general adequate use of some elaborative techniques* | <p>The response provides uneven, cursory support/evidence for the controlling idea and supporting idea(s) that includes uneven or limited use of sources, facts, and details:</p> <ul style="list-style-type: none"> some evidence from sources is weakly integrated, imprecise, or repetitive; references may be vague weak or uneven use of elaborative techniques*; development may consist primarily of source summary | <p>The response provides minimal support/evidence for the controlling idea and supporting idea(s) that includes little or no use of sources, facts, and details:</p> <ul style="list-style-type: none"> evidence from the source material is minimal or irrelevant; references may be absent or incorrectly used minimal, if any, use of elaborative techniques* |
| Language | <p>The response clearly and effectively elaborates ideas, using precise language:</p> <ul style="list-style-type: none"> vocabulary is clearly appropriate for the audience and purpose effective, appropriate style enhances content | <p>The response adequately elaborates ideas, employing a mix of precise with more general language:</p> <ul style="list-style-type: none"> vocabulary is generally appropriate for the audience and purpose generally appropriate style is evident | <p>The response elaborates ideas unevenly, using simplistic language:</p> <ul style="list-style-type: none"> vocabulary is uneven or somewhat ineffective for the audience and purpose inconsistent or weak attempt to create appropriate style | <p>The response is vague, lacks clarity, or is confusing:</p> <ul style="list-style-type: none"> vocabulary is limited or ineffective for the audience and purpose little or no evidence of appropriate style |

| Score | 2 | 1 | 0 |
|-------------|---|--|--|
| Conventions | <p>The response demonstrates a command of conventions:</p> <ul style="list-style-type: none"> adequate use of correct sentence formation, punctuation, capitalization, grammar usage, and spelling | <p>The response demonstrates partial command of conventions:</p> <ul style="list-style-type: none"> limited use of correct sentence formation, punctuation, capitalization, grammar usage, and spelling | <p>The response demonstrates little or no command of conventions:</p> <ul style="list-style-type: none"> infrequent use of correct sentence formation, punctuation, capitalization, grammar usage, and spelling |

| | |
|----|--|
| NS | Unintelligible, in a language other than English, off-topic, insufficient evidence (incomplete) or copied text. (Off-purpose writing will still receive a score in Conventions.) |
|----|--|

*Elaborative techniques may include the use of personal experiences that support the controlling idea.