

*Overview***Overview | What Are the Causes and Effects of Noise Pollution?***What Are the Causes and Effects of Noise Pollution?*

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Students will read selected informational articles regarding noise pollution in the ocean. Students will then assemble the information from their readings concerning the effects of noise pollution on ocean life. Students will complete the task by constructing an essay to determine if government regulations are needed to deter future noise pollution. The articles to be used in this module include:

Brown, S. F. (1995). The sound of global warming. *Popular Science*, 247(1), 59-59,62+.

Smith, N. (2010). Turn it down!. *Scholastic Superscience*, 21(6), 6.

Safina, C., & Chasis, S. (2004). Saving the oceans. *Issues in Science and Technology*, 21(1), 37-44.

Grades: 8

Discipline: Science

Course: Physical Science

Section 1: What Task?

TEACHING TASK

*Task Template 24 — [1 Level]**Informational & Cause/Effect*

L1: After researching articles on ocean noise pollution, write an essay that examines the causes of ocean noise pollution and explains the effects on ocean life. What conclusions or implications can you draw? Support your discussion with evidence from your research.

You have learned about the characteristics of mechanical longitudinal waves, including amplitude (decibels), frequency (hertz), compressions, rarefactions, pitch, loudness, wavelength, and speed. Here you will apply that knowledge to sound pollution and the effects it has on marine animals.

Rubric							
Scoring Elements	Not Yet		Approaches Expectations		Meets Expectations		Advanced
	1	1.5	2	2.5	3	3.5	4
Focus	Attempts to address prompt, but lacks focus or is off-task.		Addresses prompt appropriately, but with a weak or uneven focus.		Addresses prompt appropriately and maintains a clear, steady focus.		Addresses all aspects of prompt appropriately and maintains a strongly developed focus.
Controlling Idea	Attempts to establish a controlling idea, but lacks a clear purpose.		Establishes a controlling idea with a general purpose.		Establishes a controlling idea with a clear purpose maintained throughout the response.		Establishes a strong controlling idea with a clear purpose maintained throughout the response.
Reading/Research	Attempts to present information in response to the prompt, but lacks connections or relevance to the purpose of the prompt. (L2) Does not address the credibility of sources as prompted.		Presents information from reading materials relevant to the purpose of the prompt with minor lapses in accuracy or completeness. (L2) Begins to address the credibility of sources when prompted.		Presents information from reading materials relevant to the prompt with accuracy and sufficient detail. (L2) Addresses the credibility of sources when prompted.		Accurately presents information relevant to all parts of the prompt with effective selection of sources and details from reading materials. (L2) Addresses the credibility of sources and identifies salient sources when prompted.
Development	Attempts to provide details in response to the prompt, including retelling, but lacks sufficient development or relevancy. (L2) Implication is missing, irrelevant, or illogical. (L3) Gap/unanswered question is missing or irrelevant.		Presents appropriate details to support the focus and controlling idea. (L2) Briefly notes a relevant implication or (L3) a relevant gap/unanswered question.		Presents appropriate and sufficient details to support the focus and controlling idea. (L2) Explains relevant and plausible implications, and (L3) a relevant gap/unanswered question.		Presents thorough and detailed information to strongly support the focus and controlling idea. (L2) Thoroughly discusses relevant and salient implications or consequences, and (L3) one or more significant gaps/unanswered questions.
Organization	Attempts to organize ideas, but lacks control of structure.		Uses an appropriate organizational structure to address the specific requirements of the prompt, with some lapses in coherence or awkward use of the organizational structure.		Maintains an appropriate organizational structure to address the specific requirements of the prompt.		Maintains an organizational structure that intentionally and effectively enhances the presentation of information as required by the specific prompt.

Conventions	Attempts to demonstrate standard English conventions, but lacks cohesion and control of grammar, usage, and mechanics. Sources are used without citation.		Demonstrates an uneven command of standard English conventions and cohesion. Uses language and tone with some inaccurate, inappropriate, or uneven features. Inconsistently cites sources.		Demonstrates a command of standard English conventions and cohesion, with few errors. Response includes language and tone appropriate to the audience, purpose, and specific requirements of the prompt. Cites sources using an appropriate format with only minor errors.	Demonstrates and maintains a well-developed command of standard English conventions and cohesion, with few errors. Response includes language and tone consistently appropriate to the audience, purpose, and specific requirements of the prompt. Consistently cites sources using appropriate format.
Content Understanding	Attempts to include disciplinary content in explanations, but understanding of content is weak; content is irrelevant, inappropriate, or inaccurate.		Briefly notes disciplinary content relevant to the prompt; shows basic or uneven understanding of content; minor errors in explanation.		Accurately presents disciplinary content relevant to the prompt with sufficient explanations that demonstrate understanding.	Integrates relevant and accurate disciplinary content with thorough explanations that demonstrate in-depth understanding.

STANDARDS

Georgia — Physical Science

S8P4: Students will explore the wave nature of sound and electromagnetic radiation.

Common Core Anchor Standards — Reading

R.CCR.1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

R.CCR.2: Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

R.CCR.4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

R.CCR.6: Assess how point of view or purpose shapes the content and style of a text.

R.CCR.10: Read and comprehend complex literary and informational texts independently and proficiently.

Common Core Anchor Standards — Writing

W.CCR.2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

W.CCR.3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

W.CCR.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

W.CCR.5: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

W.CCR.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

W.CCR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Section 2: What Skills?

Selected Skills

Preparing for the Task

TASK ENGAGEMENT: Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns.

Reading Process

ACTIVE READING: Ability to identify the central point and main supporting elements of a text.

ACADEMIC INTEGRITY: Ability to use and credit sources appropriately.

Writing Process

CONTROLLING IDEA: Ability to establish a controlling idea and consolidate information relevant to task.

PLANNING: Ability to develop a line of thought and text structure appropriate to an information/explanation task.

DEVELOPMENT: Ability to construct an initial draft with an emerging line of thought and structure.

REVISION: Ability to refine text, including line of thought, language usage, and tone as appropriate to audience and purpose.

EDITING: Ability to proofread and format a piece to make it more effective.

COMPLETION: Ability to submit final piece that meets expectations.

Section 3: What Instruction?

Mini-Tasks

Preparing for the Task

TASK ENGAGEMENT: Ability to connect the task and new content to existing knowledge, skills, experiences, interests, and concerns.

LIST

In a quick-write, describe what you know about sound. Include everything you have learned about how sound travels.

Pacing: 15 minutes

Scoring Guide: Work meets expectations if:

Students are able to identify all aspects of sound including: sound is a mechanical wave, sound travels through a medium, the speed at which sound travels is affected by temperature and density, the inverse relationship between wavelength and frequency and amplitude and energy.

Teaching Strategies:

Discuss student responses and clarify any weaknesses or gaps in content knowledge.

Reading Process

ACTIVE READING: Ability to identify the central point and main supporting elements of a text.

SHORT CONSTRUCTED RESPONSE

Read the first selected text and identify the causes and effects of noise pollution.

Pacing: 20 minutes

Scoring Guide: Work meets expectations if:

Students are able to accurately identify the causes and effects of noise pollution.

Teaching Strategies:

Students will highlight causes in one color of highlighter and effects in a second color. Students will write the causes and effects on the handout provided for them.

SHORT CONSTRUCTED RESPONSE

Read the second selected text and identify the causes and effects of noise pollution.

Pacing: 20 minutes

Scoring Guide: work meets expectations if:

Students are able to accurately identify the causes and effects of noise pollution.

Teaching Strategies:

Students are able to accurately identify the causes and effects of noise pollution. Students should do this independently with minimal teacher assistance.

SHORT CONSTRUCTED RESPONSE

Read the third selected text and identify the causes and effects of noise pollution.

Pacing: 20 minutes

Scoring Guide: work meets expectations if:

Students are able to accurately identify the causes and effects of noise pollution.

Teaching Strategies:

Students will highlight causes in one color of highlighter and effects in a second color. Students will write the causes and effects on the handouts provided for them without teacher assistance.

ACADEMIC INTEGRITY: Ability to use and credit sources appropriately.

SHORT CONSTRUCTED RESPONSE

Students will select one sentence from each selection and write an in-text citation.

Pacing: 20 minutes

Scoring Guide: work meets expectations if:

Students are able to correctly use in-text citations..

Teaching Strategies:

Provide students with a model for citing texts for either MLA or APA (teacher's preference).

Writing Process

CONTROLLING IDEA: Ability to establish a controlling idea and consolidate information relevant to task.

SHORT CONSTRUCTED RESPONSE

Using the causes and effect handout, create a thesis that identifies three causes of sound pollution.

Pacing: 20 minutes

Scoring Guide: Work meets expectations if:

Students write a thesis that includes three causes of sound pollution.

Teaching Strategies:

Model how to write a thesis with students.

PLANNING: Ability to develop a line of thought and text structure appropriate to an information/explanation task.

OUTLINE

Create an outline that includes an introduction, three body paragraphs, each with a cause and effect, and a conclusion that discusses implications.

Pacing: 25 minutes

Scoring Guide: Work meets expectations if:

Students are able to include content learned from articles in the outline.

Teaching Strategies:

Students will use this outline as a guide to write their paper.

DEVELOPMENT: Ability to construct an initial draft with an emerging line of thought and structure.

LONG CONSTRUCTED RESPONSE

Write a rough draft of the body paragraphs only.

Pacing: 50 minutes

Scoring Guide: Work meets expectations if:

Students are able to write three coherent paragraphs that maintain the controlling idea.

Teaching Strategies:

Students should refer back to the prompt often to ensure they are writing to the task.

LONG CONSTRUCTED RESPONSE

Write the rough draft of the introduction and conclusion.

Pacing: 30 minutes

Scoring Guide: Work meets expectations if:

Students are able to write a clear opening that introduces the controlling idea and a conclusion that summarizes the task.

Teaching Strategies:

Guide students through these processes.

REVISION: Ability to refine text, including line of thought, language usage, and tone as appropriate to audience and purpose.

LONG CONSTRUCTED RESPONSE

Refine composition's analysis, logic, and organization of ideas or points. Use textual evidence carefully, with accurate citations. Decide what to include and what to exclude.

Pacing: 30 minutes

Scoring Guide: Work meets expectations if:

Student provides a complete draft with all required parts; supports the opening in the latter sections with evidence and citations; and improves earlier edition.

Teaching Strategies:

Sample useful feedback that balances support for strengths and clarity about weaknesses.

Assign students to provide each other with feedback on areas of concern.

EDITING: Ability to proofread and format a piece to make it more effective.

LONG CONSTRUCTED RESPONSE

Revise draft to have sound spelling, capitalization, punctuation, and grammar. Adjust formatting as needed to provide clear, appealing text.

Pacing: 25 minutes

Scoring Guide: Work meets expectations if:

Provides draft that is free from distracting surface errors.

Uses format that supports purpose.

Teaching Strategies:

Briefly review selected skills that many students need to improve.

Review the use of proofreading marks.

Assign students to proofread each other's texts a second time.

COMPLETION: Ability to submit final piece that meets expectations.

LONG CONSTRUCTED RESPONSE

Turn in your complete set of drafts, plus the final version of your piece.

Pacing: 25 minutes

Scoring Guide: Work meets expectations if:

- Fits the "Meets Expectations" category in the rubric for the teaching task.
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Resources

Selected Articles



Smith, N. (2010 March). Turn it down! *Scholastic SuperScience*, 21(6), 6–8.

The article reports on the result of several studies that revealed that manmade ocean noise affects how marine animals such as dolphins and whales live.

990L



Montgomery, S. (1997 March/April). From sea to noisy sea. *Animals*.

Reports on the effects of sounds on marine mammals and the experiments with low-frequency sounds aimed at measuring ocean temperature. Other topics covered: study done by researchers Lindy Weilgart and Hal Whitehand to whales; two unprecedented underwater projects of Scripps Institution of Oceanography; Acoustic Thermography of Ocean Climate (ATOC); Natural Resources Defense Council (NRDC); what ATOC and NRDC broadcast.

1200L

Keywords

Other Resources

Section 4: What Results?

Classroom Assessment Rubric	
Not Yet	
Focus	Attempts to address prompt, but lacks focus or is off-task.
Reading/Research	Attempts to present information relevant to prompt.
Controlling Idea	Controlling idea is weak and does not establish a purpose and/or address a research question.
Development	Tends to retell rather than present information in order to answer questions, solve problems; lacks details to develop topic. L2 Implications are weak or not relevant to topic. L3 Does not identify a relevant gap or unanswered question.
Organization	Applies an ineffective structure; composition does not address requirements of the prompt.
Conventions	Demonstrates a weak command of standard English conventions; lacks cohesion; language and tone are inappropriate to audience and purpose.
Meets Expectations	
Focus	Addresses prompt with a focused response.
Reading/Research	Presents and applies relevant information with general accuracy.
Controlling Idea	Establishes a controlling idea that states the main purpose and/or question for the tasks. L2 Addresses the credibility of sources.
Development	Presents sufficient information in order to examine or convey topics or issues, answer questions, solve problems; identifies salient themes or features; explains key information with sufficient detail. L2 Discusses relevant implications to topic. L3 Identifies a gap or unanswered question.
Organization	Applies a generally effective structure to address specific requirements of the prompt.
Conventions	Demonstrates a command of standard English conventions and cohesion; employs language and tone appropriate to audience and purpose.

