

Scoring Rubric
Air pollution in LA Short Performance Assessment

Air Pollution in LA Scoring Rubric

Questions 1 and 2 are scaffolds designed to orient students to the importance of the phenomenon and practice obtaining information from resources.

Rubric for Question 3 Rubric Measures: Student uses knowledge and information combined from sources to support a claim about how human activities in one place can affect the environment in another place.		
Performance Expectation	Alignment to PE Dimensions Assessed	Alignment to Question
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the earth's resources and environment.	<p><i>Disciplinary Core Idea - ESS3.C: Human Impacts on Earth Systems.</i> 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.</p> <p><i>Science Practice - Obtaining, Evaluating, and Communicating Information:</i> Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem.</p> <p><i>Crosscutting Concept - Systems and System Models:</i> A system can be described in terms of its components and their interactions.</p>	<p>Question 3. Use information from the maps and previous sources to answer the questions below:</p> <p>3a. Describe how the power plants affect the environment in LA.</p> <p>3b. Explain how the power plants in South LA can affect people living all over the city.</p> <p>(responses to 3b are evaluated as part of the reasoning for 3a)</p>

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	Emerging	Developing	Approaching Proficiency	Excelling
Description of Performance	Claim about how power plants affect the environment in LA is inaccurate or not supported with any relevant information from sources or accurate reasoning that explains how air pollution interacts with the atmosphere (e.g., contains major inaccuracies or is missing).	Claim about how power plants affect the environment in LA is supported with relevant information from source(s) but reasoning that explains how air pollution interacts with the atmosphere is incomplete and/or contains minor inaccuracies .	Claim about how power plants affect the environment in LA is partially supported with relevant information from source(s) and general reasoning that explains how air pollution interacts with the atmosphere.	Claim about how power plants affect the environment in LA is fully supported by combining relevant information from multiple sources and explicit reasoning that explains how air pollution interacts with the atmosphere.
Sample Student Responses	<p>3a. I don't think power plants are affecting the environment that much because the map isn't that dark where the power plants are.</p> <p>3b. They aren't because the maps don't really match.</p>	<p>3a. Power plants are causing air pollution in LA.</p> <p>3b. The air pollution is everywhere on the map, but mostly worse in East LA.</p>	<p>3a. Power plants are causing air pollution in LA in lots of forms.</p> <p>3b. The air pollution is everywhere on the map, even worse in East LA because it spreads.</p>	<p>3a. I think power plants are causing air pollution in LA because the report says they release particulates.</p> <p>3b. The map on the left shows most of the power plants in South LA, but if you look at the map on the right, it shows air pollution is worse in East LA. I think the wind could blow the pollution to east LA.</p>

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Rubric for Question 4		
Rubric Measures: Student uses knowledge and information combined from sources to support a claim about whether power plants are causing high levels of air pollution.		
Performance Expectation	Alignment to PE Dimensions Assessed	Alignment to Question
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the earth's resources and environment.	<p><i>Disciplinary Core Idea - ESS3.C: Human Impacts on Earth Systems.</i> 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.</p> <p><i>Science Practice - Obtaining, Evaluating, and Communicating Information:</i> Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem</p>	Question 4. Do you think the power plants are the main source of pollution in LA? Compare this graph to previous evidence to support your reasoning.

	Emerging	Developing	Approaching Proficiency	Excelling
Description of Performance	Claim about whether power plants are the main source of pollution in LA is inaccurate or not supported with any relevant information from sources.	Claim about whether power plants are the main source of pollution in LA is supported with general information from source(s) but reasoning that compares to other sources of evidence is missing .	Claim about whether power plants are the main source of pollution in LA is partially supported with relevant information from a source but reasoning that compares to other sources of evidence is general or incomplete .	Claim about whether power plants are the main source of pollution in LA is fully supported by combining relevant information from multiple sources and using explicit reasoning that compares sources of evidence.

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Sample Student Responses	<i>Yes because it causes lots of pollution.</i>	<i>I do not think that power plants are the main cause of pollution in LA because there are other causes.</i>	<i>I do not think that power plants are the main cause of pollution in LA. Even though other sources showed pollution, the graph shows that much more of the air pollution in LA is caused by heavy diesel trucks, construction equipment, ships, etc.</i>	<i>I do not think that power plants are the main cause of pollution in LA. Even though previous maps show that there is air pollution from power plants spreading from South to East LA, the graph shows that heavy diesel trucks and multiple other sources cause more air pollution in LA than in large factories like power plants.</i>
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Rubric for Question 5 Rubric Measures: Student uses knowledge and information combined from sources to explain a way to reduce pollution in LA.		
Performance Expectation	Alignment to PE Dimensions Assessed	Alignment to Question
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the earth's resources and environment.	<p><i>Disciplinary Core Idea - 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.</i></p> <p><i>Science Practice - Obtaining, Evaluating, and Communicating Information: Obtain and combine information from books and/or other reliable media to explain phenomena or solutions to a design problem</i></p> <p><i>Crosscutting Concept - Systems and System Models: A system can be described in terms of its components and their interactions.</i></p>	<p>Question 5.</p> <p>a. What do you think city leaders should do to reduce pollution in LA? Use data from the previous questions and the graphs above to support your solution.</p> <p>b. Explain how the changes you propose in your solution would reduce pollution.</p>

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Description of Performance	Solution to reduce pollution in LA is irrelevant to the data OR is not supported using relevant source(s) of evidence or reasoning that describes interactions between human activities and environments.	Solution to reduce pollution in LA is relevant and is incompletely supported using relevant source(s) of evidence OR reasoning that generally describes interactions between human activities and environments.	Solution to reduce pollution in LA is relevant and is partially supported using a relevant source of evidence and reasoning that generally describes interactions between human activities and environments.	Solution to reduce pollution in LA is relevant and is fully supported using multiple relevant sources of evidence and reasoning that explicitly describes interactions between human activities and environments.
Sample Student Responses	<p><i>a. City leaders should shut down the power plants.</i></p> <p><i>b. They are the biggest source of pollution.</i></p>	<p><i>a. City leaders should ban diesel trucks.</i></p> <p><i>b. Less diesel trucks equals less pollution.</i></p>	<p><i>a. City leaders should restrict the amount of diesel trucks on the road. According to the graph, diesel trucks cause the most air pollution in LA.</i></p> <p><i>b. If there are less trucks, there is less pollution from diesel.</i></p>	<p><i>a. City leaders should pass laws to reduce the amount of diesel trucks on the road. According to the graph, diesel trucks are the largest source of air pollution in LA and if you look at the map, this pollution affects almost everywhere in LA at very high levels.</i></p> <p><i>b. The more diesel trucks there are on the road, the more air pollution. Since diesel trucks burn diesel that causes air pollution, reducing them would mean less air pollution.</i></p>