



Performance Task: Stormwater Pollution



PART 1: RESEARCH

Student Directions:

Your Task:

The PTA at your school is sponsoring a Stormwater Information Night to help protect our local waters. They have asked each child to write an essay explaining what stormwater is, how stormwater gets polluted, and two actions we can take to keep the stormwater clean. You will read an article, view a video, and study a diagram to build your knowledge of stormwater pollution. Then you will write an essay to share at the Parent Information Night.

Steps you will be following:

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

1. Read an article and study a diagram.
2. Watch one video.
3. Answer three questions about the sources.
4. Plan and write your essay.

Directions for beginning:

You will now watch the video and read the article and the diagram. Take notes because you may want to refer to your notes while writing your essay. You can look at the sources as often as you like.

Source Information:

- Article:** *Let's Visit Stormville!* Sources: Dallas Stormwater Education for Kids, Chittenden County Vermont Regional Stormwater Education Program, City of Bellevue Stormwater Education Program
- Illustration:** *The Culprits Drain Ranger Curriculum Resource*
- Video:** *Fifteen to the River: Explaining Stormwater Runoff (1:49)*
https://youtu.be/c_6UkHuHGGA

Use the notetaking graphic organizer to take your notes on both sources.

My Notes



Source	What Stormwater is	How Stormwater gets polluted	What we can do to keep the water clean
Video: Fifteen Minutes to the River: Explaining Stormwater Runoff			
Article: Let's Visit Stormville!			

My Notes



Source	What Stormwater Is	How Stormwater gets polluted	What we can do to keep the water clean
Illustration: The Culprits			

Your notes will not be scored. You may use them to answer questions and to write your essay.

Let's Visit Stormville!

What is Stormwater?

Washington is called the Evergreen State for a reason. Over half of the land in our state is covered by forests. When rain falls in a forest, most of the water is soaked into the ground, evaporated back into the air, or absorbed by trees.

The forest acts like a sponge, capturing and holding the rainwater before it can enter streams and lakes. But when forests are replaced with hard surfaces, like streets, buildings, and parking lots, the water from the rain runs off because it can no longer soak into the ground.

This rain that does not soak into the ground is called stormwater runoff. Stormwater runoff flows into storm drains, which carry the stormwater in pipes and ditches to local streams, lakes, and Puget Sound.

Most of the time, the stormwater goes into these natural bodies of water without being treated.

What is Stormwater Pollution?

As stormwater flows over land, it can pick up pollution. Some of this pollution we can see, like trash, oil, and dirt. Other pollutants we can't see like chemicals sprayed on lawns, bacteria from pet waste, and chemicals leaked from cars and trucks.

Since stormwater runoff is not treated, the pollution in stormwater can enter directly into nearby streams, lakes, or Puget Sound. The pollution can then harm animals in the water or make playing and swimming in it unsafe for people.

75% of all pollution in Puget Sound comes from stormwater runoff that starts in our neighborhoods.

What types of pollution can get into storm drains and make our water unhealthy?

To help us learn about the different types of stormwater pollution, let's visit Stormville!

Stormville is a typical town located near a beautiful lake. The people in the picture live in Stormville and are taking care of their home and car, but they may not realize that they are doing many things that can make water unhealthy. Look at the picture above. What do you see that might cause stormwater pollution?

Let's learn about three different types of stormwater pollution: car washing on pavement, pet waste, and yard chemicals.

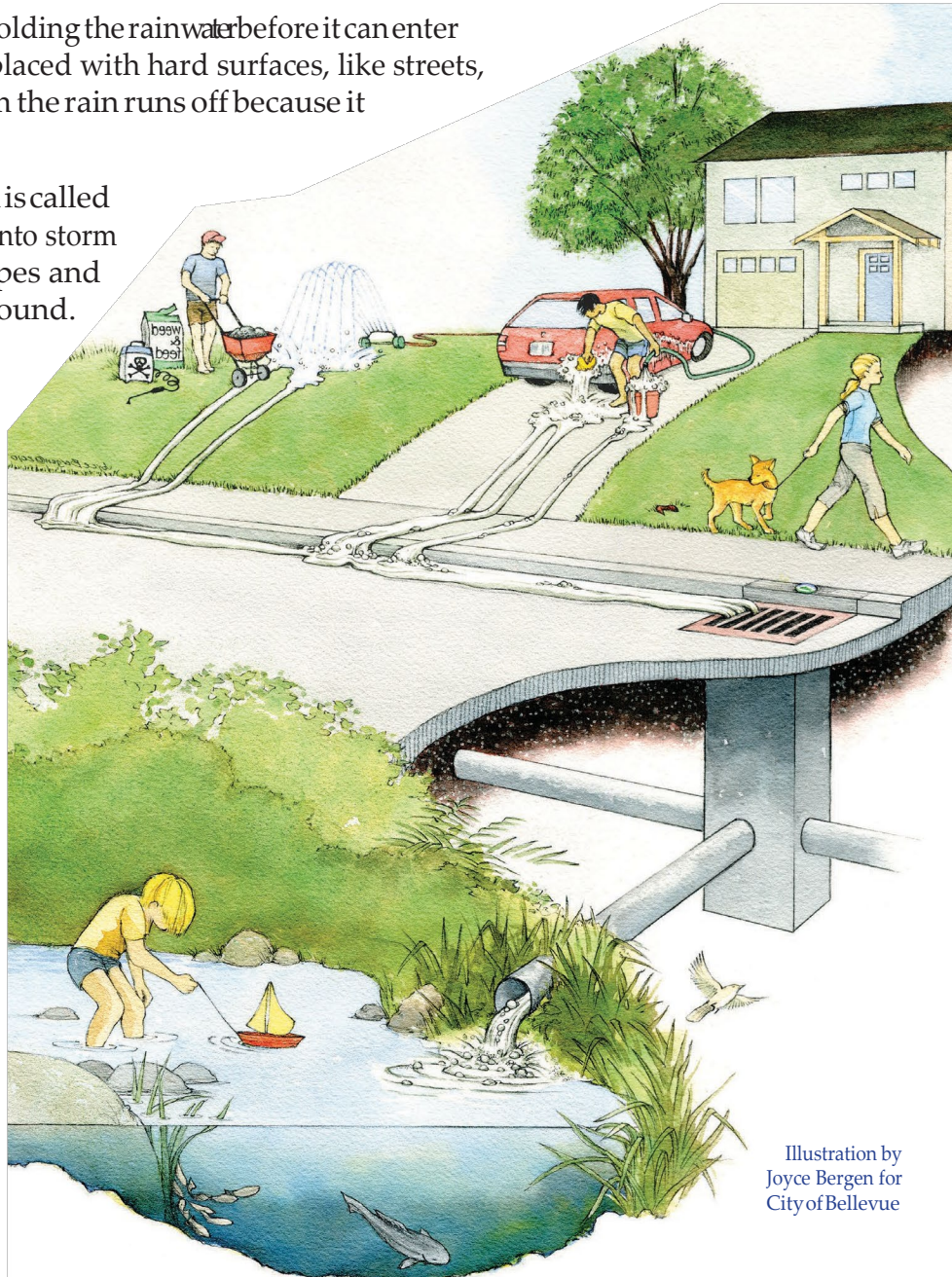


Illustration by
Joyce Bergen for
City of Bellevue

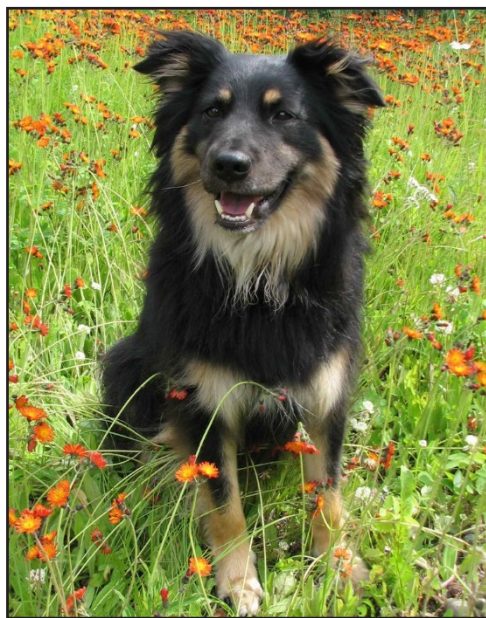
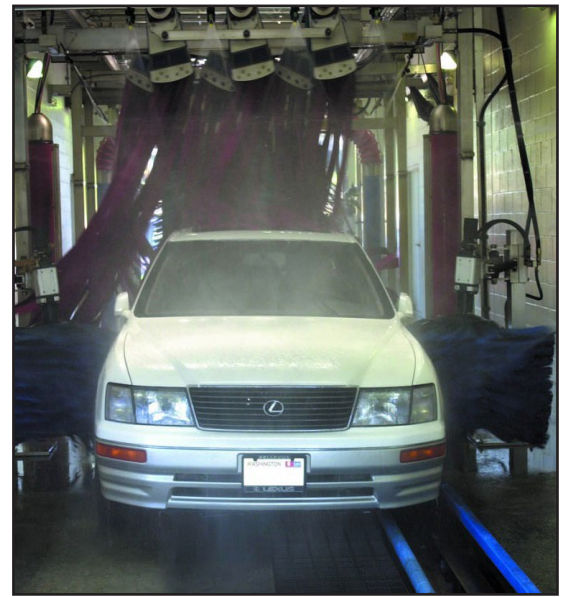
Car Washing on Pavement

When you wash the family car on pavement, the soap, oil, and other pollutants are washed into the storm drain and directly into our waterways.

Soap, oil, and other pollutants in the wash water are harmful to fish and other animals that live in the water. These pollutants can destroy the protective covering on fish and injure or even kill them and their eggs. Even biodegradable soap pollutes water because it needs to go through soil to properly breakdown.

Here's what you can do!

Suggest that your family take the car to a commercial car wash. These facilities filter the dirty wash water and send it to the sewer treatment plant to be cleaned.



Pet Waste

No one wants to swim in poop! Dog poop carries harmful bacteria and diseases that can make people very sick. Beaches are often closed because bacteria from poop has made the water unsafe to swim.

When it rains, pet waste that is left on the ground melts into the stormwater. The polluted stormwater flows into nearby storm drains and then into waterways like streams, lakes, or Puget Sound. Too much poop in the water means people can't swim, walk, or play in the water and they can't harvest shellfish to eat.

Here's what you can do!

Scoop the poop, put it in bag, and place it in the trash. When walking your pet, take bags with you to clean up their poop.

Yard Chemicals

Many people use fertilizers and pesticides to improve their green lawns and flower gardens. However, stormwater runoff can carry these chemicals into storm drains and waterways.

People use pesticides to kill unwanted plants and bugs in their yards. But when pesticides get into a lake or stream, they harm good fish and wildlife too.

Here's what you can do!

Ask the adults in your household to only use yard chemicals when necessary. Ask them to read the labels on yard care products and follow the instructions. Also, make sure that any yard chemicals are put away correctly so that they can't leak or spill.



Thanks for visiting Stormville! Take what you have learned from this visit and use it to make good decisions that protect the health of our rivers, lakes, and streams. Thank you for helping stop stormwater pollution!

The CULPRITS



When it rains, water that is not absorbed into the ground, intercepted by vegetation, or evaporated flows into surface waters such as rivers, canals and coastal waters. This flow is called runoff. As the runoff flows over the roads and land, it picks up pollutants.

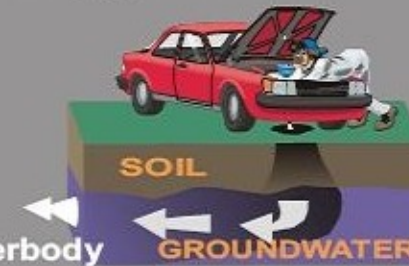
Roads are a source of pollution. Oils, grease, construction dirt, trash & cigarette butts wash off roads when it rains.



Excess fertilizers wash off lawns & gardens when it rains & flow into surface water.



Surface water can be polluted through groundwater.



Things put into stormdrains and on the street can end up in our rivers, canals, & coastal waters





Performance Task: Stormwater Pollution



Part 2: FIELD INVESTIGATIONS

Teachers are encouraged to have students to map the school campus, looking for possible problem areas for stormwater pollution. Project WET offers lessons for both a rainy-day hike on the school campus and a fair-weather hike. These lessons are also included in the Grade 3 Rain Garden curriculum available for download on the PEI site.) Students look for where water collects and think about possible ways to redirect the water, so it is filtered by grass or other vegetation before entering the storm drains. They can also explore a variety of stormwater solutions like rain barrels and pervious concrete.

Discussion questions might include the following:

- What is Stormwater and how does it get polluted?
- Where does the stormwater go on our school campus?
- What are actions we can take to reduce stormwater pollution?
- How might we inform the community of actions we can take to keep our waters clean?

In addition, teachers may want to consider one or more of the following field investigations:

- Drain Rangers-Engineering Design: <http://www.pugetsoundstartshere.org/drain-rangers>
- FI-Soils as Sponges: <http://www.pltwa.com/field-study-investigations.html>
- Aquatic WILD: Where Does Water Run? P44
- Seattle Utilities: <http://www.seattle.gov/Util/EnvironmentConservation/Education/index.htm>
- Tahoma SD Grade 5 Stormwater Curriculum: Mapping Our School Campus
- Stormwater Solutions: pg. 85 (available on the PEI website)

Other ideas for field investigations:



Performance Task: Stormwater Pollution



PART 3: ESSAY

Student Directions:

You will now have time to review your notes and sources, plan, draft, and revise your essay. While you may use your notes and refer to the sources, you must work on your own. Now read your assignment and the information about how your essay will be scored, and then begin your work.

Your Assignment:

The PTA at your school is sponsoring a Stormwater Information Night to help keep our local waters healthy. They have asked each child to write an essay explaining what stormwater is, how stormwater gets polluted, and two actions we can take to keep the stormwater clean. Write your essay using information from the three sources, naming the sources you use. Your essay will be shared at the Parent Information Night.

How your essay will be scored:

The people scoring your essay will be assigning scores for

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.

Manage your time carefully so that you can:

- Plan your essay
- Write your
- Revise and edit for a final draft



Organizing My Essay: Stormwater Pollution

Introduction	
What Stormwater is	
How stormwater gets polluted	
What we can do to keep stormwater clean? Idea #1	
What we can do to keep stormwater clean? Idea #2	
Conclusion	



Scoring Notes: Stormwater Pollution



Question 1: What is stormwater runoff? Be sure to name your source. (Claim 4, Target 2)

ANALYZE / INTEGRATE Information Rubric Claim 4, Target 2	
	<ul style="list-style-type: none">• The response gives sufficient evidence of the ability to gather, analyze and integrate information within and among multiple sources of information.
	<ul style="list-style-type: none">• The response gives limited evidence of the ability to gather, analyze and integrate information within and among multiple sources of information.
	<ul style="list-style-type: none">• A response gets no credit if it provides no evidence of the ability to gather analyze and integrate information within and among multiple sources of information.

Scoring Notes

Let's Visit Stormville!: Rain that doesn't soak into the ground. The runoff carries pollutants into pipes that lead to the sea.

The Culprits: Rainwater that is not absorbed into the ground, intercepted by vegetation, or evaporated. This water flows into our streams, lakes and ocean carrying pollutants.

The Video: Rain landing on our pavements and flows into our storm drains. This water picks up pollutants.

2---point Response

- Defines stormwater runoff as rainwater that is not absorbed into the ground and carries pollutants to our lakes, rivers, and ocean.
- Cites at least one of the three sources.

1---point Response

- Correctly defines stormwater runoff
- Does not name a source.

0---point Response

- Incorrect definition or Off Topic



Scoring Notes: Stormwater Pollution



Sample 2 Point Responses:

The meaning of stormwater runoff is rain that doesn't get soaked into nature. The stormwater flows and picks up pollution that goes into pipes and storm drains and is sent to lakes and rivers. The article says about stormwater that "...rain that does not soak into the ground is called Stormwater runoff" Source: Let's Visit Stormville! Pg.1

Stormwater runoff is when rain falls, and it collects pollutants, pesticides, animal waste, salt, oil, and litter. This stormwater runoff goes into storm drains where it travels to underground pipe that goes directly into rivers. I found his information from the video "It takes 15-30 min. from the pipes to the river."

Sample 1 Point Responses:

A stormwater runoff is when water does not get soaked up and gets on dirty surfaces. And it picks up all the pollution around it. Then it gets into pipes. The stormwater with pollution gets into lakes, rivers, or even the ocean. Which makes it very unhealthy to swim in it for humans and fish. (Does not name the source of the information)

A stormwater runoff is a rain that does not soak into the ground. Stormwater goes into storm drains that carry pipes and ditches to local streams like lakes and Puget Sound. Storm water runoff flows into storm drain and travels into rivers. (No mention of carrying pollutants. Source is not named.)

Sample 0 Point Responses:

A Stormwater runoff are like canals, ditches, or storm drains. (Let's Visit Stormville!) (Culprits) (Fifteen Minutes to the River) (Incorrect definition)

Soap, oil, and other pollutants in the wash water are harmful. Fish and other animals that live in the water. These pollutants can destroy the protective covering in fish and injure or even kill them. And they are animals that live in the waters. (Off topic response)



Scoring Notes: Stormwater Pollution



Question 2: What do you learn from the article about types of stormwater pollution that you don't learn in the diagram? *(Claim 4, Target 3)*

EVALUATE Information/Sources Rubric Claim 4, Target 3	
	<ul style="list-style-type: none"> The response gives sufficient evidence of the ability to evaluate the credibility, completeness, relevancy, and/or accuracy of the information and sources.
	<ul style="list-style-type: none"> The response gives limited evidence of the ability to evaluate the credibility, completeness, relevancy, and/or accuracy of the information and sources.
	<ul style="list-style-type: none"> A response gets no credit if it provides no evidence of the ability to evaluate the credibility, completeness, relevancy, and/or accuracy of the information and sources.

Scoring Notes

Pet waste is a major source of pollution. Car washing can also pollute.

2---point Response

Names either pet waste or car washing as another source of stormwater pollution.

1---point Response

Names a difference between the two sources, but not focused on types of stormwater pollution.

0---point Response

No reference to differences in the two sources and/or off topic Inaccurate information



Scoring Notes: Stormwater Pollution



Sample 2 Point Responses:

Types of stormwater pollution that I learn in the article but are not mentioned in the diagram are bacteria in pet waste and chemical results made from car washing. Pet waste bacteria that is not picked up can end up being taken by stormwater runoff and go to natural bodies of water. Car washes can drop soap, oil, and other things which can end up in rivers, lakes, and streams from stormwater runoff.

We learn about pet waste in the article. The diagram does not talk about pet waste. (Let's Visit Stormville! Pg.2) We also learn how to help or prevent it from happening.

You learn that water also picks up chemicals that we can't see like chemicals sprayed on lawns and bacteria from pet waste and chemicals leached from cars and trucks.

Sample 1 Point Responses:

What I learned in the article about types of stormwater pollution that I didn't learn in the diagram was that stormwater pollution is 75% of all pollution in Puget Sound comes from stormwater runoff that starts in our neighborhoods. (Let's Visit Stormville! Pg. 1) (Names a difference between the two sources but not related to types of stormwater pollution.)

In the article "Let's visit Stormville!" there are headings that teach us how we can prevent pollution in stormwater runoff. In "The Culprits" it shows us a diagram about how stormwater gets polluted, but they don't show how to prevent it. (Accurate comparison but not related to types of stormwater pollution.)

Sample 0 Point Responses:

What I learned in the article about types of stormwater pollution was that the three different types of stormwater pollution are car washing on pavement, pet waste, and yard chemicals and what I didn't learn in the diagram is that how storm water gets polluted. (No comparison of types of pollution named in both sources; inaccurate information about diagram which does show how stormwater is polluted.)

In the diagram the same types of stormwater pollution is pesticides, litter, animal wastes, salts, oil. I learned that many of them pollute our lakes and rivers. (No comparison between sources.)



Scoring Notes: Stormwater Pollution



Question 3: Defend this statement using information from two of the sources. Be sure to name your sources. *“We can make a difference in keeping our water clean and healthy.”* (Claim 4, Target 4)

USE EVIDENCE Rubric Claim 4, Target 4	
	<ul style="list-style-type: none"> The response gives sufficient evidence of the ability to cite evidence to support arguments and/or ideas.
	<ul style="list-style-type: none"> The response gives limited evidence of the ability to cite evidence to support arguments and/or ideas.
	<ul style="list-style-type: none"> A response gets no credit if it provides no evidence no evidence of the ability to cite evidence to support arguments and/or ideas.

Scoring Notes

Article: Wash your car at a car wash; scoop pet waste; use only what you need for lawn chemicals

Video: Use rain barrels; create more green space; use porous pavement; limit the amount of dense, impermeable surfaces; put in less pavement

Diagram: We can infer the following: Avoid using too much lawn fertilizer; keep roads clean by not littering and picking up trash; don't put grass clippings into storm drains; don't work on your car on grass because oil can leak out and pollute the ground water.

2---point Response:

- Names two specific things we can do to prevent stormwater pollution
- Uses two of the three sources for information
- Cites each source

1---point Response:

- Names two things we can do to prevent stormwater pollution but draws from just one source or does not cite any source
- Names only one thing we can do to prevent stormwater pollution

0---point Response:

Off Topic or makes general statements with no specific examples of what we can do to prevent water pollution



Scoring Notes: Stormwater Pollution



Sample 2-point Responses:

In “Fifteen Minutes to the River,” to help make a difference in keeping our water clean and healthy is limit the amount of dense surfaces in your community and having rain gardens. In “Let’s Visit Stormville!” to help make a difference in keeping our water clean and healthy is to only use fertilizer and pesticides when absolutely necessary so when it rains all the chemicals won’t go into the storm drain and hurt the wildlife in the se, lakes or rivers.

I believe that we can make a difference in keeping out water clean and healthy because in the article Let’s Visit Stormville” it gives solutions for some of the most everyday things people do such as washing your car, fertilizing your plants, and even pet waste if you have a pet. I learn to not use too many chemicals and to pick up pet waste. In the video, it helps me believe that we can make a difference because it tells me how we can keep storm water from being polluted and into bodies of water by simply catching the water in a rain barrel and pouring it into the natural ground to help grow plants.

Sample 1-point Responses:

First source, Let’s Visit Stormville says you should use the car wash because its cleaner, pet waste you should clean it up with a small plastic bag. Last, yard chemicals you don’t use it every day because it’s bad for wild life and real people. Next source, the video, talks about what happens to the bad rain and it tells some ways to help things. (Has specific examples from one source but not from the second source.)

We can make a difference in keeping our water clean and healthy by taking “your family to take the car to a commercial car wash.” (Let’s Visit Stormville! Pg.2) Another thing you can do is “Scoop the poop. Put it in a bag and place it in the trash.” (Let’s Visit Stormville! Pg. 2) (Names two ways we can help but only draws information from one of the sources.)

Sample 0-point Responses:

“We can make a difference in keeping our water clean and healthy” about the information is that “what types of pollution can get into drains and make our water unhealthy.” Helping the water to be clean is also “Here’s what you can do!” paragraphs. (Does not name any specific things people can do to make a difference in keeping the water clean.)

Pet waste- when it rains pet waste is left on the ground and melts into the stormwater. The pollution stormwater flows into nearby storm drains and then into waterways like streams, rivers, or Puget Sound. (Off topic: does not directly focus on what we can do to make a difference in keeping our water clean)

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