

WATER POLLUTION GRADE 8 AND UP READING

Improve students'
literacy skills

Science
Applicability

Sub Plan



Teach With
Fergy

Reading Comment

“

Extremely satisfied - Great resource to work on student reading comprehension and it tied into the topic I was teaching. My students have been struggling with reading and I've been incorporating more reading into my lessons. Thank you for the resource.

”

SCROLL
to take a look inside!

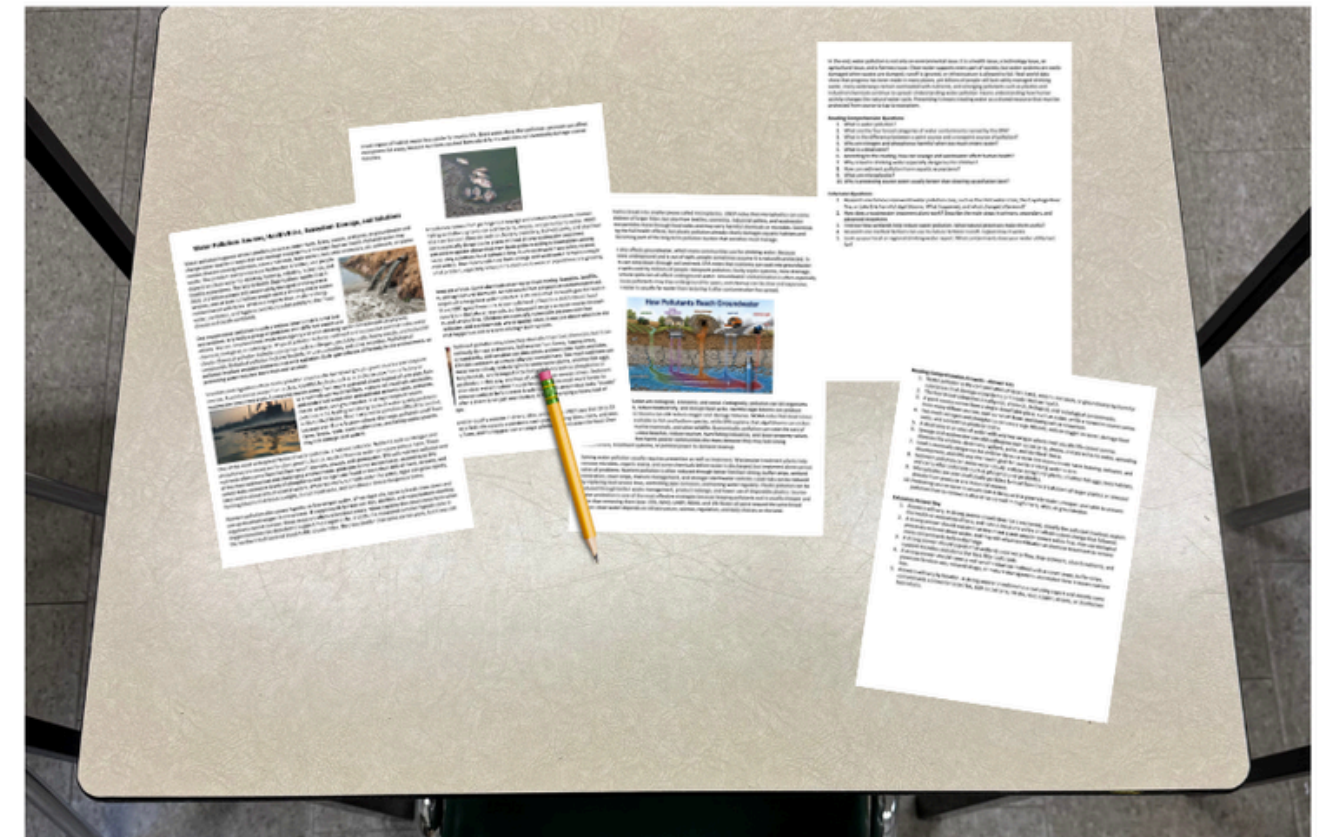


THE PROBLEMS YOU FACE

- **Limited time to teach scientific literacy and strengthen students' reading and analysis skills.**
- **Need meaningful extension activities to engage fast-moving learners.**
- **Difficulty creating effective last-minute sub plans that still support student learning.**

NO-PREP - PRINT/UPLOAD

- **CLASSROOM READY - No Prep, Ready-to-Use:** Print or assign digitally with Google Docs, Microsoft Word, and PDF formats for flexible classroom use
- **Questions and Answer Key**
- **Includes Varied Question Types:** Knowledge, thinking, connecting, application, and open-ended questions.



What Will Your Students Learn?

READING COMPREHENSION ARTICLE & QUESTION BUNDLE

Article with
Comprehension
Questions

Grade 8 and Up

Print & Digital

- What Is Water Pollution?
- Types of Water Contaminants (Physical, Chemical, Biological, Radiological)
- Point Source vs. Nonpoint Source Pollution
- Nutrient Pollution and Eutrophication
- Algal Blooms and Dead Zones
- Sewage, Wastewater, and Pathogens
- Lead and Toxic Chemical Pollution
- Sediment Pollution and Erosion
- Plastic Pollution and Microplastics
- Groundwater Contamination
- Health Risks of Polluted Water
- Ecosystem Damage and Biodiversity Loss
- Economic and Social Impacts of Water Pollution
- Wastewater Treatment and Pollution Prevention
- Source-Water Protection and Sustainable Solutions

Reading Comprehension Questions

1. What is water pollution?
2. What are the four broad categories of water contaminants named by the EPA?
3. What is the difference between a point source and a nonpoint source of pollution?
4. Why are nitrogen and phosphorus harmful when too much enters water?
5. What is a dead zone?
6. According to the article, how can sewage and wastewater affect human health?
7. Why is water pollution a problem for children?
8. How can we protect our water?
9. What are some solutions to water pollution?
10. What are some ways to reduce water pollution?

Extension

1. Research the effects of water pollution on a specific ecosystem.
2. Write a persuasive essay on why water pollution is a global problem.
3. Create a poster or presentation about water pollution.
4. Interview a local environmental scientist or water treatment plant operator.
5. Investigate the role of government in regulating water quality.

Water Pollution: Sources, Health Risks, Ecosystem Damage, and Solutions

Water pollution happens when harmful substances enter rivers, lakes, oceans, wetlands, or groundwater and change water quality in ways that can damage ecosystems or threaten human health. Polluted water may contain disease-causing microbes, excess nutrients, toxic metals, industrial chemicals, oil, sediment, or plastic waste. The problem matters because freshwater is limited, and people depend on clean water for drinking, farming, industry, recreation, and healthy ecosystems. The World Health Organization reports that in 2022, 2.2 billion people still lacked safely managed drinking-water services, and at least 1.7 billion people used a drinking-water source contaminated with feces. WHO also reports that unsafe drinking water, sanitation, and hygiene contribute substantially to diarrhoeal disease and death worldwide.



One reason water pollution is such a serious issue is that it is not just one problem. It is really a group of problems with different causes and effects. The U.S. Environmental Protection Agency classifies drinking-water contaminants as physical, chemical, biological, or radiological. Physical pollution includes sediment and suspended soil that make water cloudy. Chemical pollution includes substances such as nitrogen, pesticides, salts, heavy metals, and industrial compounds. Biological pollution includes bacteria, viruses, parasites, and other microbes. Radiological pollution involves unstable elements that emit radiation. Each type behaves differently in the environment, so protecting water requires more than one solution.

Scientists and regulators often divide pollution sources into two broad groups: point sources and nonpoint sources. A point source comes from a clear, identifiable place, such as a discharge pipe from a factory or a snowmelt can wash fertilizer, manure, oil, road salt, pesticides, and eroded soil across the land and into streams, lakes, wetlands, coastal waters, and groundwater. EPA says nonpoint source pollution is the leading remaining cause of water quality problems in the United States. That makes water pollution difficult to control because even if one factory reduces discharge, polluted runoff from farms, lawns, roads, construction sites, and failing septic systems may still damage local waters.

One of the most widespread forms of water pollution is nutrient pollution. Nutrients such as nitrogen and phosphorus are necessary for plant growth, but too much can cause serious problems. Excess nutrients can lead to algal blooms, which are dangerous to humans and animals. Algal blooms can also deplete oxygen levels in the water, creating dead zones. Dead zones are areas where the oxygen levels are so low that most aquatic life cannot survive. For example, the Gulf of Mexico has a large dead zone each summer that is more than 6,000 square miles. That was smaller than some dead zones in the past.

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Your Reading

Water Pollution: Sources, Health Risks, Ecosystem Damage, and Solutions

Water pollution happens when harmful substances enter rivers, lakes, oceans, wetlands, or groundwater and change water quality in ways that can damage ecosystems or threaten human health. Polluted water may contain disease-causing microbes, excess nutrients, toxic metals, industrial chemicals, oil, sediment, or plastic waste. The problem matters because freshwater is limited, and people depend on clean water for drinking, farming, industry, recreation, and healthy ecosystems. The World Health Organization reports that in 2022, 2.2 billion people still lacked safely managed drinking-water services, and at least 1.7 billion people used a drinking-water source contaminated with feces. WHO also reports that unsafe drinking-water, sanitation, and hygiene contribute substantially to diarrhoeal disease and death worldwide.



One reason water pollution is such a serious issue is that it is not just one problem. It is really a group of problems with different causes and effects. The U.S. Environmental Protection Agency classifies drinking-water contaminants as physical, chemical, biological, or radiological. Physical pollution includes sediment and suspended soil that make water cloudy. Chemical pollution includes substances such as nitrogen, pesticides, salts, heavy metals, and industrial compounds. Biological pollution includes bacteria, viruses, parasites, and other microbes. Radiological pollution involves unstable elements that emit radiation. Each type behaves differently in the environment, so protecting water requires more than one solution.

Scientists and regulators often divide pollution sources into two broad groups: point sources and nonpoint sources. A point source comes from a clear, identifiable place, such as a discharge pipe from a factory or wastewater treatment plant. A nonpoint source comes from many scattered places instead of one pipe. Rain or snowmelt can wash fertilizer, manure, oil, road salt, pesticides, and eroded soil across the land and into streams, lakes, wetlands, coastal waters, and groundwater. EPA says nonpoint source pollution is the leading remaining cause of water quality problems in the United States. That makes water pollution difficult to control, because even if one factory reduces discharge, polluted runoff from farms, lawns, roads, construction sites, and failing septic systems may still damage local waters.



One of the most widespread forms of water pollution is nutrient pollution. Nutrients such as nitrogen and phosphorus are necessary for plant growth, but too much of them in water can cause serious harm. These nutrients often come from fertilizer runoff, manure, sewage, and stormwater. EPA calls nutrient pollution one of the most widespread and challenging environmental problems in the United States. According to EPA survey data, excessive levels of phosphorus and nitrogen are found in more than 40% of rivers, streams, and lakes and in about 20% of coastal waters. When too many nutrients enter the water, algae can grow rapidly, forming blooms that block sunlight, disrupt food webs, and sometimes release dangerous toxins.

Nutrient pollution also causes hypoxia, or low-oxygen water. When algae die, bacteria break them down and use up dissolved oxygen in the process. If oxygen levels fall too low, fish, shellfish, and many bottom-dwelling organisms cannot survive. These areas are often called dead zones. NOAA explains that dead zones form when oxygen becomes too depleted to support most aquatic life. In 2025, the measured summer hypoxic zone in the northern Gulf covered about 4,402 square miles. That was smaller than some earlier years, but it was still

a vast region of habitat made less usable for marine life. Dead zones show that pollution upstream can affect ecosystems far away, because nutrients washed from inland farms and cities can eventually damage coastal fisheries.



Another major form of water pollution comes from pathogens in sewage and contaminated waste. Human sewage, animal waste, and failing sanitation systems can add bacteria, viruses, and parasites to water. WHO warns that contaminated water can transmit diseases such as cholera, dysentery, typhoid, polio, and diarrheal illnesses. This type of pollution is especially dangerous in places without strong wastewater treatment systems. UN-Water's 2024 wastewater update shows that even basic global tracking is incomplete: among countries reporting data for 2022, only a portion could calculate how much wastewater was safely treated, and safe treatment levels varied widely. That means pollution from sewage and wastewater remains a major public-health and environmental problem, especially where infrastructure is weak or populations are growing quickly.

Toxic chemicals create a different set of risks. Some chemicals enter water from mining, factories, landfills, fuel spills, household products, and agricultural chemicals. Others leach from old pipes or contaminated soil. Lead is one of the clearest examples of a dangerous water pollutant. EPA states that its health goal for lead in drinking water is zero, and EPA and CDC agree there is no known safe level of lead in a child's blood. Lead often gets into water not because it is in the lake or reservoir, but because it enters as water moves through corroding pipes, faucets, solder, and service lines. Children are especially vulnerable because even low exposures can affect learning, behavior, and development. Water quality, then, is not just about what is in the source water; it is also about what happens as water travels through built systems.

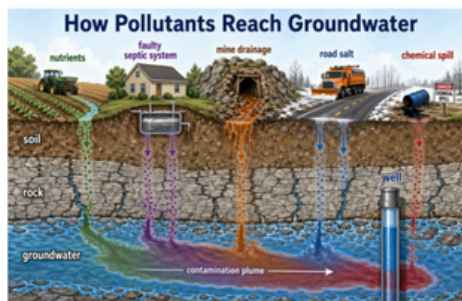


Sediment pollution may sound less dramatic than toxic chemicals, but it can seriously damage waterways. Soil erosion from farms, logging areas, streambanks, and construction sites sends sediment into rivers and lakes. EPA lists sediment as a major physical contaminant. Too much sediment can make water cloudy, reduce light for underwater plants, smother fish eggs, bury habitats, and transport attached pollutants such as phosphorus or pesticides. In this way, one type of pollution can worsen others. Sediment also raises water-treatment costs because utilities must work harder to remove particles before water is safe to drink. A stream that looks "muddy" after a storm is not just unattractive; it may be carrying a heavy load of pollutants washed off the landscape.

Plastic pollution is now a growing water-quality concern in rivers, lakes, and oceans. UNEP says that 19 to 23 million metric tonnes of plastic waste leak into aquatic ecosystems each year, polluting lakes, rivers, and seas. Larger items such as bottles, bags, foam, and fishing gear can entangle wildlife or be mistaken for food. Over

time, many plastics break into smaller pieces called microplastics. UNEP notes that microplastics can come from the breakdown of larger litter, but also from textiles, cosmetics, industrial pellets, and wastewater pathways. These particles move through food webs and may carry harmful chemicals or microbes. Scientists are still studying the full health effects, but plastic pollution already clearly damages aquatic habitats and wildlife and is becoming part of the long-term pollution burden that societies must manage.

Water pollution also affects groundwater, which many communities use for drinking water. Because groundwater moves underground and is out of sight, people sometimes assume it is naturally protected. In reality, pollutants can seep down through soil and rock. EPA notes that nutrients can soak into groundwater and contaminate wells used by millions of people. Nonpoint pollution, faulty septic systems, mine drainage, road salt, and chemical spills can all affect underground water. Groundwater contamination is often especially difficult to fix because pollutants may stay underground for years, and cleanup can be slow and expensive. Protecting source water is usually far easier than restoring it after contamination has spread.



The effects of water pollution are ecological, economic, and social. Ecologically, pollution can kill organisms directly, weaken habitats, reduce biodiversity, and disrupt food webs. Harmful algal blooms can produce toxins, and even non-toxic blooms can still reduce oxygen and damage fisheries. NOAA notes that dead zones can make large areas unavailable to fish and bottom species, while EPA explains that algal blooms can even kill fish, birds, turtles, marine mammals, and other wildlife. Economically, pollution can raise the cost of drinking-water treatment, close beaches, reduce tourism, hurt fishing industries, and lower property values. Socially, polluted water often harms poorer communities the most, because they may lack strong infrastructure, treatment systems, or political power to demand cleanup.

Reducing water pollution usually requires prevention as well as treatment. Wastewater treatment plants help move microbes, organic waste, and some chemicals before water is discharged, but treatment alone cannot solve all problems. Nutrient pollution is often reduced through better fertilizer timing, buffer strips, wetland restoration, cover crops, manure management, and stronger stormwater controls. Lead risks can be reduced by replacing lead service lines, controlling pipe corrosion, and testing water regularly. Plastic pollution can be reduced through better waste management, product redesign, and lower use of disposable plastics. Source-water protection is one of the most effective strategies because keeping pollutants out is usually cheaper and faster than removing them later. EPA, WHO, UNEP, NOAA, and UN-Water all point toward the same broad lesson: clean water depends on infrastructure, science, regulation, and smart choices on the land.

In the end, water pollution is not only an environmental issue. It is a health issue, a technology and agricultural issue, and a fairness issue. Clean water supports every part of society, but water systems damaged when wastes are dumped, runoff is ignored, or infrastructure is allowed to fail. Real-world progress has been made in many places, yet billions of people still lack safely managed water, many waterways remain overloaded with nutrients, and emerging pollutants such as pharmaceuticals and industrial chemicals continue to spread. Understanding water pollution means understanding how human activity changes the natural water cycle. Preventing it means treating water as a shared resource protected from source to tap to ecosystem.

Reading Comprehension Questions

1. What is water pollution?
2. What are the four broad categories of water contaminants named by the EPA?
3. What is the difference between a point source and a nonpoint source of pollution?
4. Why are nitrogen and phosphorus harmful when too much enters water?
5. What is a dead zone?
6. According to the reading, how can sewage and wastewater affect human health?
7. Why is lead in drinking water especially dangerous for children?
8. How can sediment pollution harm aquatic ecosystems?
9. What are microplastics?
10. Why is protecting source water usually better than cleaning up pollution later?

Extension Questions

1. Research one famous real-world water pollution case, such as the Flint water crisis, the Lake Erie harmful algal blooms. What happened, and what changed afterward?
2. How does a wastewater treatment plant work? Describe the main steps in primary, secondary, and advanced treatment.
3. Find out how wetlands help reduce water pollution. What natural processes make them effective?
4. Research one method farmers can use to reduce fertilizer runoff. Explain how it works.
5. Look up your local or regional drinking-water report. What contaminants does your water contain? Why is protecting source water usually better than cleaning up pollution later?

Reading Comprehension Answers - Answer Key

1. Water pollution is the contamination of rivers, lakes, oceans, wetlands, or groundwater by harmful substances that damage ecosystems or threaten human health.
2. The four broad categories are physical, chemical, biological, and radiological contaminants.
3. A point source comes from a single identifiable place, such as a pipe, while a nonpoint source comes from many diffuse sources, such as runoff from land during rain or snowmelt.
4. Too much nitrogen and phosphorus can cause algal blooms, reduce oxygen in water, damage food webs, and sometimes produce toxins.
5. A dead zone is an area of water with very low oxygen where most aquatic life cannot survive.
6. Sewage and wastewater can add pathogens such as bacteria, viruses, and parasites to water, spreading diseases like cholera, dysentery, typhoid, polio, and diarrheal illness.
7. Lead is especially dangerous for children because even low exposure can harm learning, behavior, and development, and EPA says the health goal for lead in drinking water is zero.
8. Sediment pollution can make water cloudy, reduce sunlight for plants, smother fish eggs, bury habitats, and carry other pollutants such as phosphorus or pesticides.
9. Microplastics are very small plastic particles formed from the breakdown of larger plastics or released directly from products and industrial sources.
10. Protecting source water is usually better because it is generally easier, cheaper, and safer to prevent pollution than to remove it after it has spread through rivers, lakes, or groundwater.

Extension Answer Key

1. Answers will vary. A strong answer should describe a real event, identify the pollutant involved, explain the health or ecosystem effects, and note at least one policy or infrastructure change that followed.
2. A strong answer should explain that treatment plants usually remove solids first, then use biological processes to break down waste, and may add advanced filtration or chemical treatment to remove more contaminants before discharge.
3. A strong answer should explain that wetlands slow water flow, trap sediment, absorb nutrients, and support microbes and plants that help filter pollutants.
4. A strong answer should name a real runoff-reduction method such as cover crops, buffer strips, precision fertilizer use, reduced tillage, or manure management, and explain how it lowers nutrient loss.
5. Answers will vary by location. A strong answer should name a real utility report and identify some contaminants commonly tested for, such as bacteria, nitrate, lead, copper, arsenic, or disinfection byproducts.

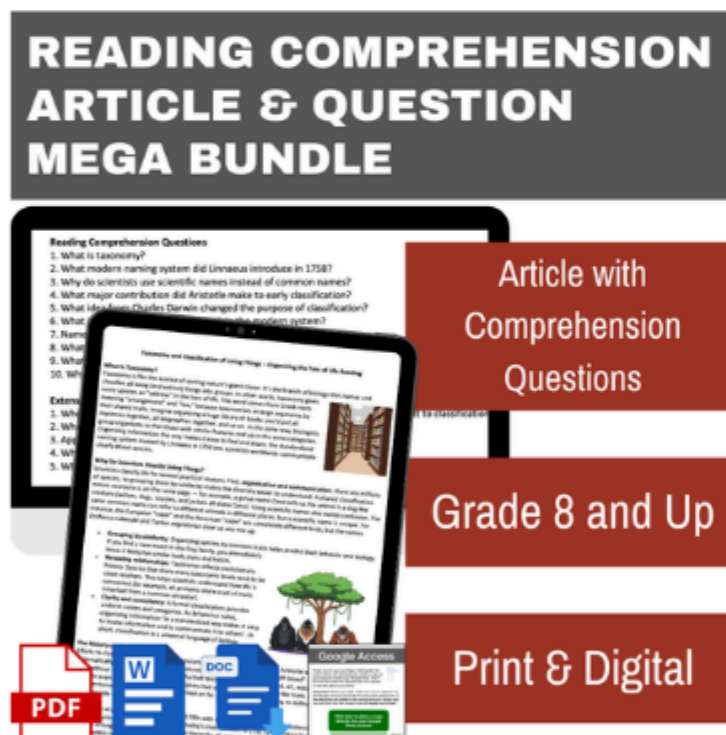
Full Answer Key

Comprehension and Extension Questions



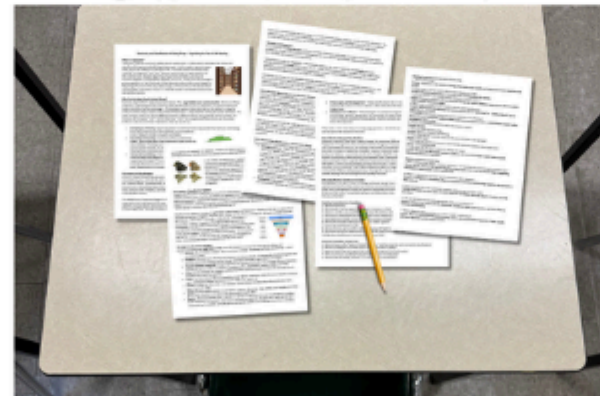
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CLASSROOM READY

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★★★★★ Extremely satisfied - It is a good supplemental activity either for review and at the same time introducing some concept. I also use this for sub plan. It is well presented, organized and interesting.

★★★★★ Extremely satisfied - This a great resource. I used this for a sub plan. It was fun and engaging for my students.

Grade 8 and Up Scientific Reading Comprehension Article Mega Bundle

ALL my current and future grade 8 and up readings, covering the following subject areas:

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Health
Natural Disasters
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