

MICROPLASTICS AND PLASTIC POLLUTION

GRADE 8 AND UP READING

Improve students' literacy skills

Sub Plan

Science Applicability



SCROLL
to take a look inside!

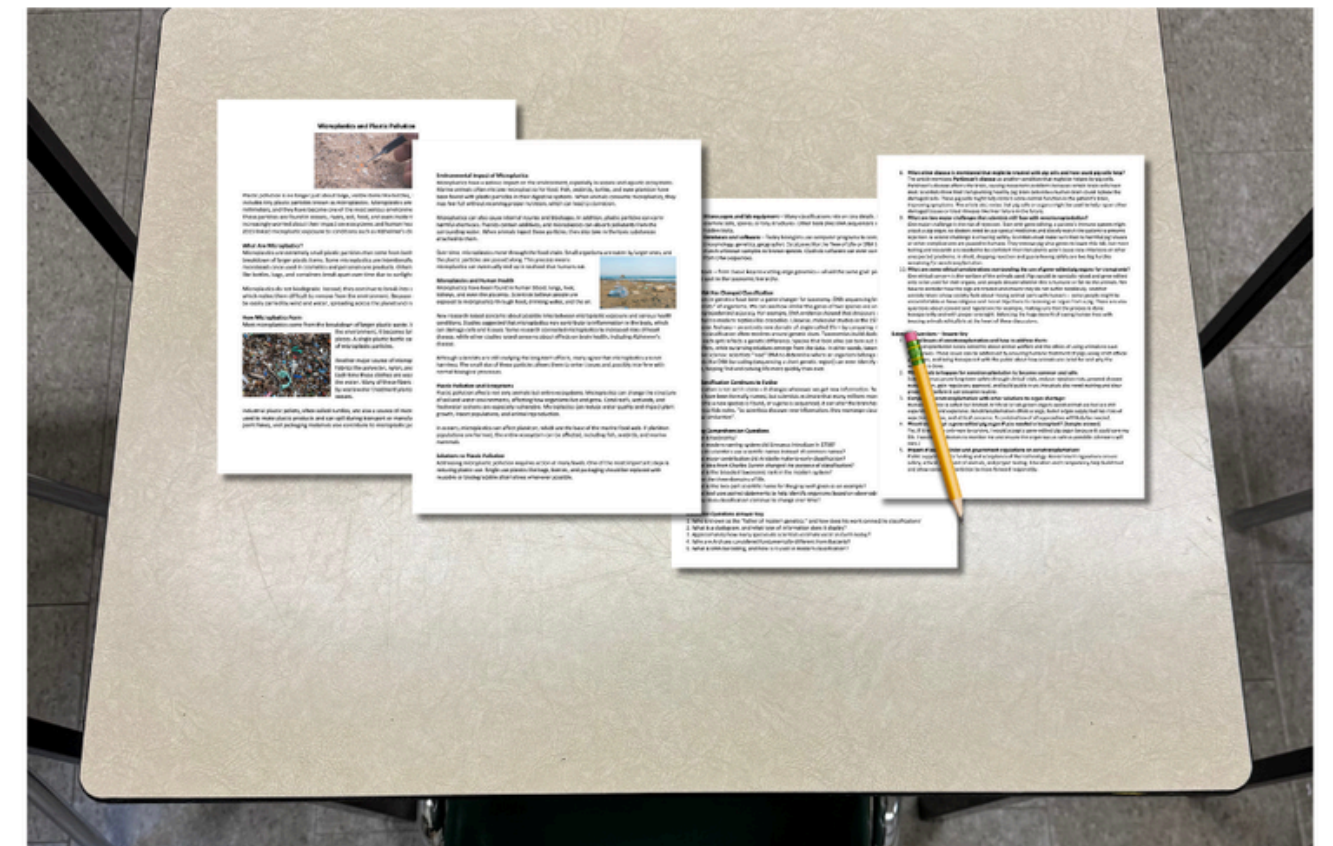


THE PROBLEMS YOU FACE

- 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.

CLASSROOM READY

- Questions and Answer Key
- **No Prep, Ready-to-Use:** Print or assign digitally with Google Docs, Microsoft Word, and PDF formats for flexible classroom use
- **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 Are Microplastics?
- How Microplastics Form
- Environmental Impact of Microplastics
- Microplastics and Human Health
- Plastic Pollution and Ecosystems
- Solutions to Plastic Pollution
- The Future of Plastic Pollution

Comprehension Questions

1. What is xenotransplantation?
2. Why is there a need for organs from sources like pigs? In other words, what problem is xenotransplantation trying to solve?
3. What is rejection in the context of organ transplants, and why does it happen?
4. What is gene editing and which tool is commonly used to edit genes? How does this tool work in simple terms?
5. How do scientists use gene editing to make pig organs more suitable for human transplantation? What are the two challenges with using pig DNA?
6. What are the recent developments in using pig organs for transplantation into a human?
7. How do you think these developments will impact the future of organ transplantation?
8. What are the ethical concerns surrounding xenotransplantation?
9. What are the potential benefits of xenotransplantation?
10. What are the potential risks of xenotransplantation?

Extension Questions

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2. What are the potential benefits of xenotransplantation?
3. What are the potential risks of xenotransplantation?

Microplastics and Plastic Pollution



Plastic pollution is no longer just about large, visible items like bottles, bags, and packaging. It also includes tiny plastic particles known as microplastics. Microplastics are pieces of plastic smaller than 5 millimeters, and they have become one of the most serious environmental concerns in recent years. These particles are found in oceans, rivers, soil, food, and even inside the human body. Scientists are increasingly worried about their impact on ecosystems and human health, especially as new studies link 2025 linked microplastic exposure to conditions such as Alzheimer's disease and heart disease.

What Are Microplastics?

Microplastics are extremely small plastic particles that come from both manufactured sources and the breakdown of larger plastic items. Some microplastics are intentionally created at a small size, such as microbeads once used in cosmetics and personal care products. Others form when larger plastic items like bottles, bags, and containers break apart over time due to sunlight, heat, wind, and waves.

Microplastics do not biodegrade. Instead, they continue to break into smaller and smaller pieces, which makes them difficult to remove from the environment. Because of their size, microplastics can be easily carried by wind and water, spreading across the planet and reaching even remote locations.

How Microplastics Form

Most microplastics come from the breakdown of larger plastic waste. When plastic litter is exposed to the environment, it becomes brittle and fragments into tiny pieces. A single plastic bottle can eventually turn into thousands of microplastic particles.



Another major source of microplastics is synthetic clothing. Fabrics like polyester, nylon, and acrylic are made of long, thin fibers. Each time these clothes are washed, tiny fibers are released into the water. These fibers are too small to be caught by filters and end up in the ocean.

Microplastics are also found in the air. Wind can pick up tiny plastic particles from the ground and carry them into the atmosphere. These particles can then be inhaled by humans and animals.

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Your Reading

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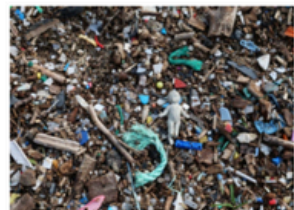
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Another major source of microplastics is synthetic clothing. Fabrics like polyester, nylon, and acrylic are made from plastic. Each time these clothes are washed, tiny fibers are released into the water. Many of these fibers are too small to be filtered out by wastewater treatment plants and end up in rivers and oceans.

Industrial plastic pellets, often called nurdles, are also a source of microplastics. These small pellets are used to make plastic products and can spill during transport or manufacturing. Tire wear from vehicles, paint flakes, and packaging materials also contribute to microplastic pollution.

Environmental Impact of Microplastics

Microplastics have a serious impact on the environment, especially in oceans and aquatic ecosystems. Marine animals often mistake microplastics for food. Fish, seabirds, turtles, and even plankton have been found with plastic particles in their digestive systems. When animals consume microplastics, they may feel full without receiving proper nutrition, which can lead to starvation.

Microplastics can also cause internal injuries and blockages. In addition, plastic particles can carry harmful chemicals. Plastics contain additives, and microplastics can absorb pollutants from the surrounding water. When animals ingest these particles, they also take in the toxic substances attached to them.

Over time, microplastics move through the food chain. Small organisms are eaten by larger ones, and the plastic particles are passed along. This process means microplastics can eventually end up in seafood that humans eat.

Microplastics and Human Health

Microplastics have been found in human blood, lungs, liver, kidneys, and even the placenta. Scientists believe people are exposed to microplastics through food, drinking water, and the air.



New research raised concerns about possible links between microplastic exposure and serious health conditions. Studies suggested that microplastics may contribute to inflammation in the body, which can damage cells and tissues. Some research connected microplastics to increased risks of heart disease, while other studies raised concerns about effects on brain health, including Alzheimer's disease.

Although scientists are still studying the long-term effects, many agree that microplastics are not harmless. The small size of these particles allows them to enter tissues and possibly interfere with normal biological processes.

Plastic Pollution and Ecosystems

Plastic pollution affects not only animals but entire ecosystems. Microplastics can change the structure of soil and water environments, affecting how organisms live and grow. Coral reefs, wetlands, and freshwater systems are especially vulnerable. Microplastics can reduce water quality and impact plant growth, insect populations, and animal reproduction.

In oceans, microplastics can affect plankton, which are the base of the marine food web. If plankton populations are harmed, the entire ecosystem can be affected, including fish, seabirds, and marine mammals.

Solutions to Plastic Pollution

Addressing microplastic pollution requires action at many levels. One of the most important steps is reducing plastic use. Single-use plastics like bags, bottles, and packaging should be replaced with reusable or biodegradable alternatives whenever possible.

Improving recycling systems is also critical. Many plastics are not recycled properly and end up in landfills or the environment. Better recycling programs and clearer labeling can help reduce waste.

Scientists are developing bioplastics made from plant-based materials that can break down more easily than traditional plastics. While these are not a perfect solution, they can reduce the amount of long-lasting plastic entering the environment.

Governments and organizations are also working to limit plastic pollution through bans, regulations, and clean-up programs. Some countries have banned microbeads and single-use plastics. River and ocean clean-up projects aim to remove plastic before it breaks down into microplastics.

Individuals can help by reducing plastic use, recycling correctly, choosing products with less packaging, and participating in community clean-ups. Small changes, when multiplied by millions of people, can have a large impact.

The Future of Plastic Pollution

Microplastics and plastic pollution are global problems that will not disappear overnight. However, awareness is growing, and new solutions are being developed. Scientists, governments, and communities are working together to reduce plastic waste and protect the environment.

The choices people make today will shape the future of the planet. By reducing plastic use, supporting sustainable products, and encouraging responsible policies, it is possible to limit microplastic pollution and protect ecosystems and human health.

Reading Comprehension Questions

1. What are microplastics?
2. How do microplastics form in the environment?
3. Name two sources of microplastics.
4. Why are microplastics dangerous to animals?
5. How do microplastics move through the food chain?
6. Where have microplastics been found in the human body?
7. What health concerns are linked to microplastic exposure?
8. How does plastic pollution affect ecosystems?
9. What are two solutions to reduce plastic pollution?
10. Why is it important to address microplastic pollution now?

Extension Questions

1. How might microplastics affect future generations if pollution continues?
2. What role do governments play in reducing plastic pollution?
3. How can new technologies help solve the plastic pollution problem?
4. Should single-use plastics be banned worldwide? Why or why not?
5. What changes could schools make to reduce plastic waste?

Answer Key – Comprehension Questions

1. Microplastics are tiny plastic particles less than 5 millimeters in size.
2. They form when larger plastics break down and from manufactured sources like fibers and pellets.
3. Clothing fibers, plastic bottles, microbeads, tire wear, and industrial pellets.
4. Animals mistake them for food, which can cause starvation, injury, and toxin exposure.
5. Small organisms eat microplastics and are then eaten by larger animals.
6. Blood, lungs, liver, kidneys, and placenta.
7. Inflammation, heart disease, and possible links to Alzheimer's disease.
8. They harm plants, animals, and water quality and disrupt food webs.
9. Reducing plastic use, improving recycling, bioplastics, bans, and clean-ups.
10. Because microplastics affect the environment and human health.

Answer Key – Extension Questions

1. Continued pollution could increase health risks and environmental damage.
2. Governments create laws, bans, and regulations to limit plastic use and waste.
3. Technologies like biodegradable plastics and clean-up devices can reduce pollution.
4. Answers will vary.
5. Reducing bottled water, using reusable containers, and minimizing packaging.

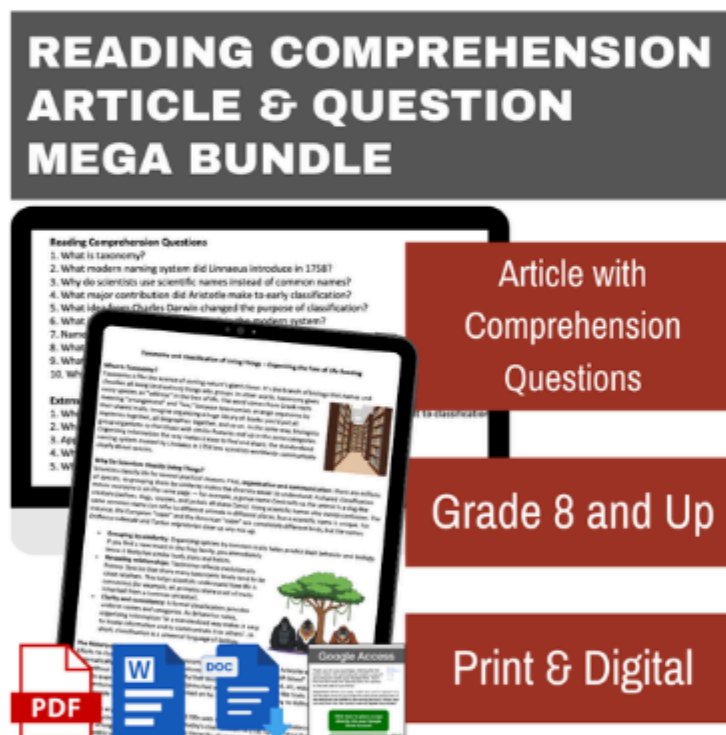
Answer Key Included

Comprehension and Extension Questions



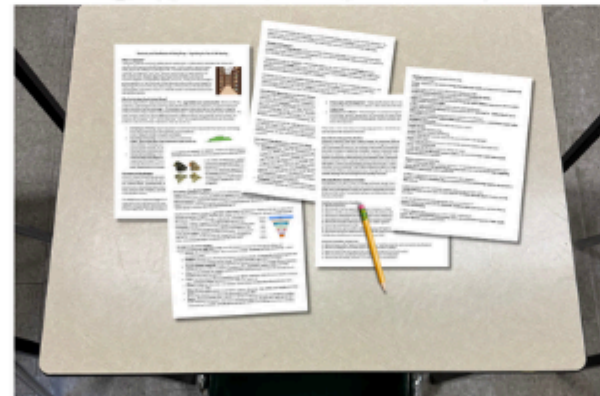
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Includes over 130 readings for students in grades 8 and up. The bundle covers all science topics and will save you over 75%.



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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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