



MICROPLASTICS



Scan to review worksheet

Expemo code:
19QG-G1L9-7QAN

1

Warm-up

Can you name the items in these pictures? What do you think they have in common?



1. _____



2. _____



3. _____



4. _____



5. _____

Put the words in order to find the answer to the question above:

all cause environment in items plastic pollution the These

How do you think the items in the pictures are responsible for this situation?



2 Reading for the main idea

You are going to read the article, "Microplastics have even been blown into a remote corner of the Pyrenees".

The first time you read the article, you should read quickly to understand the main ideas and how the information is organised. Put these points in the same order as they appear in the article.

What are microplastics? 1

What kind of plastic pollution are governments focussing on at the moment, visible or invisible?

What should we do about microplastics?

Where are we finding microplastics?

Where do microplastics come from?

Why might microplastics be dangerous?

**YOUR TRASH
IS MY HOME**





THE CONVERSATION

Microplastics have even been blown into a remote corner of the Pyrenees

Adapted from TheConversation.com, by Dr Sharon George, Carolyn Roberts

Microplastics are **particles** of plastic which are smaller than 5 mm. They have been found in a **remote** and **pristine** region of the French Pyrenees mountains, after travelling through the atmosphere by wind, says a new study.

This is just the latest example of the "hidden **risks**" presented by plastics that humans cannot see with the naked eye. For now, governments and activists are focused on avoiding plastic **litter** in the environment, mainly because of concern for wildlife and worries over **unsightly** drinks bottles or fishing nets on beaches. Plastic bag use has been reduced in many parts of the world, and various projects are exploring how to collect the plastic waste in oceans. But not much has yet been done to find and remove invisible polluting plastic particles.

There is, however, growing concern about these microplastics. These come in part from manufactured sources, such as cleaning materials and cosmetic products, but also from secondary sources, such as the wearing down of car tyres, or from washing and drying artificial fibres like polyester. We are becoming increasingly aware of them in the environment, but we know very little about how much plastic is out there and what its effects on human and animal **well-being** will be.

As more studies publish their findings, we are learning that microplastics are more **widespread** than we imagined, and that they are found in every environmental system investigated. Plastic particles have been found in large quantities in river sediments in the UK, while a study in Paris found plastic fibres in wastewater and the air.

This is to be expected in polluted **urban** environments, but the new findings from the Bernadouze research station in the Pyrenees are different. This part of the mountain range is not somewhere scientists would expect to find **contamination**. But when the researchers collected

samples over a five-month period, they found lots of tiny particles of **airborne** microplastics. While their exact source is a mystery, they may have travelled up to 95km.

Particles have also been found on the deep ocean floor, far from sources of pollution, carried there by ocean currents. Other research has identified some surprising ways microplastics can move between one environmental system and others. In addition to the obvious route of direct **ingestion** by animals who become **prey** for others higher in the food chain, it is now clear that there are other routes, such as mosquitoes ingesting plastics in water that then stay in their bodies. As the adult insects fly, particles are released into the atmosphere, allowing them to float for thousands of miles, or to be breathed in.

Should we be worried?

The amount of plastic in the environment has increased and we are still making lots more. Microplastics are going to be with us for a while yet, since plastic has many beneficial uses. Unfortunately, the risks of microplastics are not yet fully understood.

In addition to the dangers of ingesting of large amounts of plastic material without any nutritional value, there are other hidden risks. Microplastics could carry organic pollution, eg disease. Since microplastics are present in drinking water and food, we need to do more work to understand the risks to health and identify ways to manage this risk. A study that found microplastics in the **liver** of a fish raised concerns that plastic can enter the body if ingested.

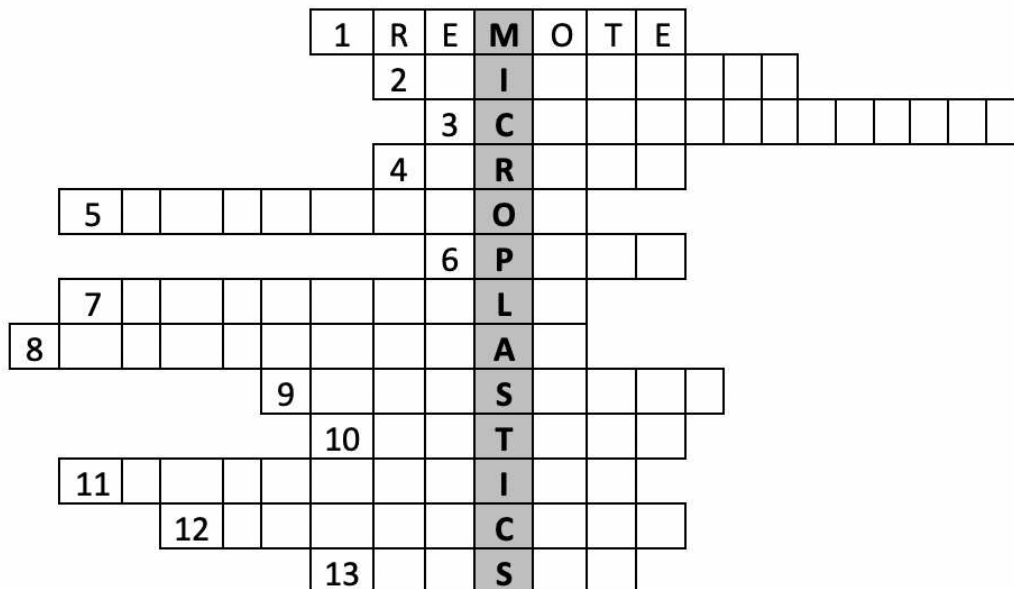
The trouble is, these plastics are so small they are not easy to remove from the environment. The solution is preventing their escape into the environment in the first place. Focusing on the bigger plastics we can see, like plastic bottles, may remove our attention from the larger problem of microplastics in the air we breathe and the food we eat. Solving the problem at the source could help to prevent more damage.



3 Vocabulary from the text

Write a bold word from the text next to the number of its definition to complete the crossword on the next page - the first one has been done as an example. One word is extra - can you guess what it means?

1. Far away from cities and other people (adjective)
2. Carried by the wind (adjective)
3. Pollution which makes something dirty or poisonous (noun)
4. Related to cities or living in cities (adjective)
5. Taking something into your body as food (noun)
6. An animal which is hunted, killed and eaten by another animal (noun)
7. Unattractive, ugly, offensive (adjective)
8. Common over a large area (adjective)
9. Clean and pure (adjective)
10. Rubbish that has been left in the wrong place (noun)
11. The state of health and happiness of an animal or person (noun)
12. Tiny pieces of something (noun)
13. Dangers, the possibility of something bad happening (noun)





4

Reading for detail

Look at this example of an 'odd one out' exercise:

Example: black / panda / white

Panda is the odd one out (= different from the others) because it is an animal; the other two are colours.

Which item in each list below is the odd one out ACCORDING TO THE INFORMATION IN THE ARTICLE. Why is one item different? How are the other two the same?

1. nets / tyres / bags
2. British rivers / Pyrenean air / French wastewater
3. humans / fish / mosquitoes

Read the last paragraph of the article again and answer the questions.

1. How can we stop microplastics from causing problems in the future? Why is this the best way?
2. What negative result might there be if we put all our energy into cleaning up plastic litter?

5

Homework

Choose ONE of these tasks to complete for homework (or in the next session).

1. Make a poster about microplastics to display in your school or workplace
2. Prepare a 2-3 minute speech about microplastics to deliver to your school or workplace

For either project, use at least 5 words from the vocabulary exercise and include this information:

- what microplastics are
- where microplastics come from
- why microplastics are dangerous
- what we could do to solve the problem