

# 8 Water pollution and biomagnification – Part 1

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

| English           | 中文   | Write it 3 times (English) |
|-------------------|------|----------------------------|
| eutrophication    | 富营养化 | _____                      |
| Thermal pollution | 热污染  | _____                      |
| Bioaccumulation   | 生物累积 | _____                      |
| Biomagnification  | 生物放大 | _____                      |

## Recall

You already know water can be polluted:

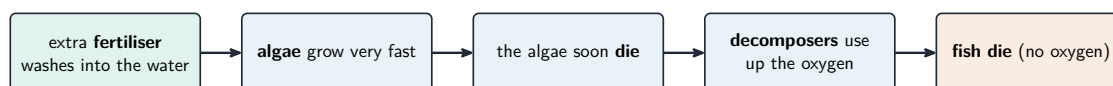
- Sewage, fertilizer, and factory waste can enter rivers and seas.
- Too much fertilizer can cause a green bloom of algae in a pond.
- Some poisons build up in animals over time.

This sheet lines up water pollution. Each idea has a short worked example.

## New ideas

### ■ 1 Eutrophication

When extra nutrients (from fertilizer or sewage) enter water, they cause **eutrophication** 富营养化: algae bloom, then die and rot, using up the oxygen, which suffocates fish.



## ■ 2 Thermal pollution

**Thermal pollution** 热污染 is warm water released by power plants; warm water holds less oxygen, stressing aquatic life.

## ■ 3 Bioaccumulation and biomagnification

**Bioaccumulation** 生物累积 is the build-up of a toxin **inside one organism** over its life. **Biomagnification** 生物放大 is the increase in concentration **up the food chain**, so top predators end up with the most.

## ■ 4 Biomagnification in numbers

*Worked example.* If water holds a toxin at 0.01 ppm, plankton might reach 0.5 ppm, small fish 2 ppm, and a top predator 25 ppm – about 2500 times the level in the water.

**Watch out:** because toxins **biomagnify**, a top predator (like an eagle or a large fish) can be poisoned even when the water itself is only lightly polluted.

## Practice

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Try these in order. The methods are all above.

**2.1** Explain the steps of eutrophication, from fertilizer runoff to dead fish. [3]

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**2.2** State why warm water from power plants harms aquatic life. [2]

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**2.3** State the difference between bioaccumulation and biomagnification. [2]

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**2.4** A toxin is 0.02 ppm in water and 40 ppm in a top predator. Find how many times

more concentrated it is in the predator.

[2]

**2.5** Explain why top predators are most affected by biomagnification.

[2]