

## Activity Plan & Guidance (KS3 & KS4)

### Learning Objectives

- Understand that canals and rivers are vulnerable to external threats.
- Explore how human and physical processes can impact local environments and ecosystems.
- Understand the key stages of eutrophication.

### Resources

- [Eutrophication PowerPoint Presentation](#)
- [Eutrophication Micro-lesson](#)
- [Eutrophication Storyboard Activity \(scene sorting and template\)](#)

### Activities

- |                |   |
|----------------|---|
| <b>Starter</b> | <ul style="list-style-type: none"> <li>• Use the 'Eutrophication PowerPoint Presentation' to introduce the topic of fertilisers and their purpose for farmers. Explain that all plants need nutrients to help them to thrive. Remind students that carbon dioxide, water and light are all required for photosynthesis. Photosynthesis produces glucose used by the plant to survive (sides 3 to 5).</li> <li>• Use sides 6 to 7 to explain the process of eutrophication.</li> <li>• Watch the '<a href="#">Eutrophication Micro-lesson</a>' to embed the learning.</li> </ul> |
| <b>Task 1</b>  | <ul style="list-style-type: none"> <li>• Use the 'Eutrophication Storyboard Activity' to ask students to arrange the stages of eutrophication correctly. Some students could use the images provided, others could create their own storyboard visuals.</li> </ul>  |
| <b>Task 2</b>  | <ul style="list-style-type: none"> <li>• Write a balanced letter to a farmer, explaining the impact that fertilisers are having on canals and rivers (slide 8). Encourage students to use persuasive writing techniques as well as key facts and terminology.</li> </ul>  |



### Suggestions

- Use the word bank and sentence starters on slide 9 of the presentation if required.
- Ask students to also consider the farmers' perspective. Why would they use fertilisers even if they are bad for the environment? You could hold a class debate – farmers v ecologists.

### Plenary

- Discuss ideas about what could be done to reduce or prevent eutrophication from occurring in canals and rivers. Encourage creativity – anything from government policies to futuristic inventions.

### KS3/4 Curriculum Links

#### KS3 Science (Structure and function of living organisms)

- The dependence of almost all life on Earth on the ability of photosynthetic organisms...

#### KS4 Science (Photosynthesis and ecosystems)

- Photosynthesis as the key process for food production and therefore biomass for life.
- Positive and negative human interactions with ecosystems.

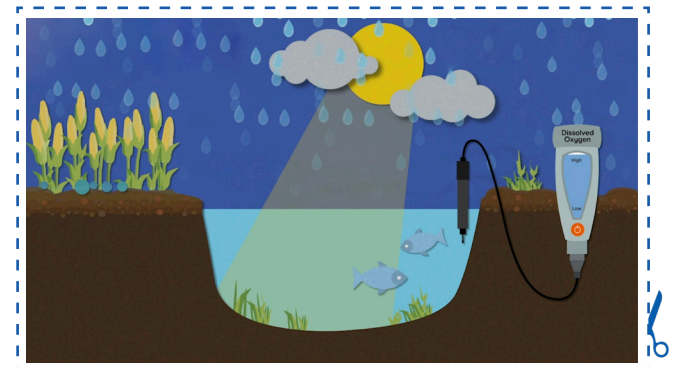
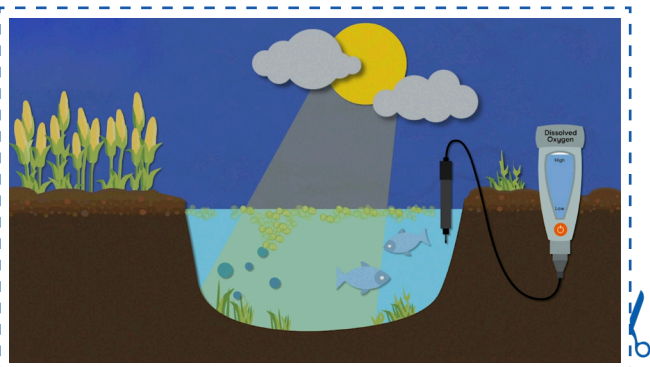
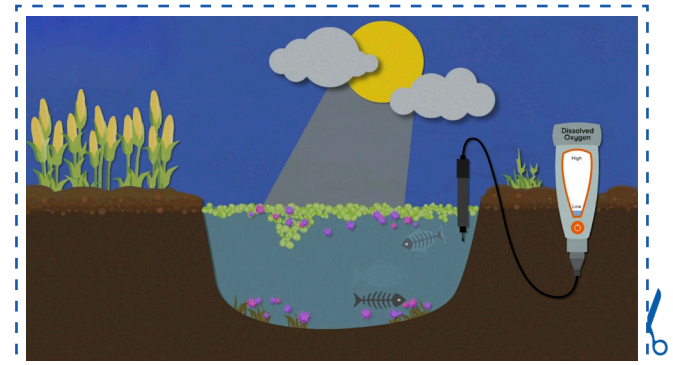
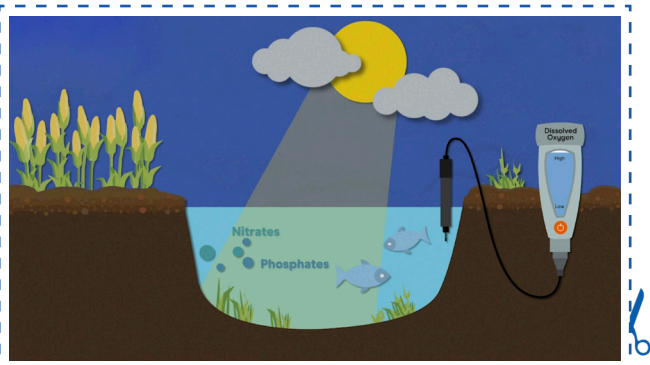
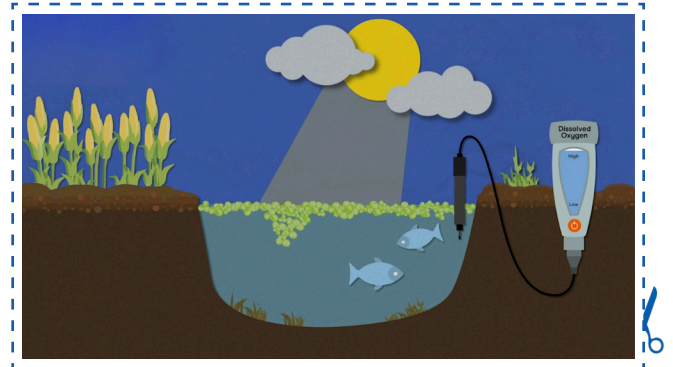
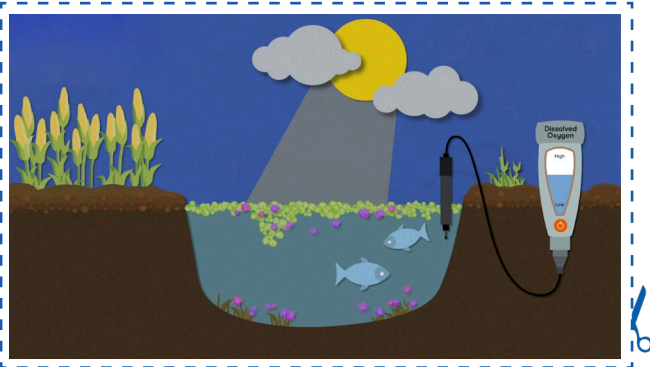
### Useful links/extra resources

- [Canal & River Trust STEM learning resources](#)

## Eutrophication Storyboard

How much do you know about the stages of **eutrophication**?

Cut out the 6 scenes below and arrange them in the correct order on the storyboard template.



**Top-Tip:** Use the animated micro-lesson to help:  
[canalrivertrust.org.uk/stem-learning-programme/micro-lessons](http://canalrivertrust.org.uk/stem-learning-programme/micro-lessons)

## Eutrophication Storyboard Template

Create a storyboard to describe the process of eutrophication. Try to explain what happens in **6** stages.

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