



What Is That Green Stuff On Lake Erie?

Environmental Study of Water - Technology

Essential Question	<i>What is an algae bloom and what technologies are available to manage algal blooms?</i>
Outcomes	At the end of this lesson, students will be able to: ● Explain what an algae bloom is ● Describe what causes algal blooms ● List algal blooms affect on humans and the environment ● List ways to protect yourself, your family and the environment from harmful algal blooms ● Define Eutrophication ● Identify what technologies are being used to manage algal blooms on Lake Erie
Standards Benchmarks identified in RED are priority benchmarks.	Science Standards L.C.5 Disruption of ecosystems (habitat destruction) and extinction (e.g., causes human and effects) ELA Standards R.5.3. Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them. R.2.9. Identify the main purpose of a text, including what the author wants to answer, explain, or describe. R.2.10. Distinguish their own point of view from that of the author of a text.
STEM Focus	☐ Science ☒ Technology ☐ Engineering ☐ Mathematics

TEACHERS: this content was designed for ABE/ASE students. Instructional scaffolding used in this lesson can be beneficial for multilingual students.

Because adult classrooms are multi-level, teachers will want to differentiate this HyperDoc by accommodating the different ways that students learn by using scaffolding strategies and appropriate leveled materials. Teachers will want to vary the instructional activities based on their student's needed skills.

For more information about collaborating and sharing on Google Drive, check out videos 36-45: [Google Junior Training series - YouTube](#).

STUDENTS: Before you begin this lesson



- Go to File > Make a copy
- Change the name to: <your name> Water Technology
- Begin working in your document
- When completing an activity, make a copy of the document and save with your name and the title of the activity

Be sure to read carefully. The green text is a prompt for reflection or activity.

Engage	
	Read: <i>On a summer day, you and your family headed out to a local lake for some fun in the sun! You expected a day filled with lounging, swimming, boating and fishing, but when you arrived you see this (see picture below):</i> 
	Respond: Click the link below to respond to the following question: <i>In a few words, explain why you think that the lake is green?</i> Lake Erie Response Padlet



Explore

Watch:

[Click here to watch a video: Lake Erie Algae Blooms](#) (7:20)

Respond:

After watching the video, what are you thinking about? Is the algae bloom issue more complicated than you anticipated?

[Click here to enter your response to the video](#)



Explain

Find Out:

What exactly causes Algae Blooms?
[Click here to watch a video by OSU Professor Jay Martin: What Causes Algae Blooms on Lake Erie](#) (2:54)

Quiz activity:

[Click here to access quiz entitled Algal Blooms](#)



Elaborate

Read:

Click the link to read:
[Harmful Algae Blooms Affect on Humans?](#)

Study vocabulary:

Click the link to study the [Effects of Algae Blooms on Humans](#)

Watch:

Click the link to watch:
[Video : Harmful Algae Blooms Affect on the Environment: Eutrophication](#) (3:28)

Watch:

[Video: Eutrophication and Dead Zones](#) (6:35)

Explain:

In your own words, in the box below explain the term Eutrophication:

Create: Tik Tok Video explaining Eutrophication

	Collaborate	
	Watch: What technologies are being used to protect Lake Erie from Algae Blooms: 1. <i>Toxic Algae and the Climate Conundrum</i> (9:42) 2. <i>Sensor Measures Toxicity of Lake Erie Algal Bloom in Near Real-Time</i> (2:06)	Partner activity: Toxic Algae and The Climate Conundrum Partner Activity
	Evaluate	
	Review: Ohio Brochure on Algal Blooms	Respond: Click here to respond to what you have learned about Algal Blooms Guest password: Algalbloom!



Extend

Watch:

[Click here to Watch Video: *The Great Lakes Now-Lake Erie Algae* \(8:03\)](#)

Watch:

[Video The Story Behind: *Algal Blooms* \(9:21\)](#)

Read:

[Dangerous Lake Erie Algal Bloom is Eight Times The Size Of Cleveland](#)

Read:

[HABs](#)

Read:

[The Fight for the Lakes-Eutrophication in Madison Waterways by Owen Tsao \(medium.com\) -The Climate Reporter](#)

Read:

[National Institute of Environmental Health Sciences](#)

Review:

[Harmful Algal Bloom Satellite Monitoring System](#)

[Ohio EPA Harmful Algal Blooms](#)