

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	<p>At the end of this lesson, students will be able to:</p> <ul style="list-style-type: none"> ● 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	<p>Science Standards: L.C.5 Disruption of ecosystems (habitat destruction) and extinction (e.g., causes human and effects)</p> <p>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.</p>
STEM Focus	<input type="checkbox"/> Science <input checked="" type="checkbox"/> Technology <input type="checkbox"/> Engineering <input type="checkbox"/> Mathematics


Before you begin this Air Science lesson:


- **Go to File > Make a copy**
- **Change the name to: <your name> Water Technology**
- **Begin working in your document**


Read the left-column to learn more about water in our environment, then on the right-column complete the reflections or activities.

	Engage	
	<p>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></p> 	<p>Respond: Click the link below to respond to the following question:</p> <p><i>In a few words, explain why you think that the lake is green?</i></p> <p>Lake Erie Response Padlet</p>


	Explore	
	<p>Watch: Click here to watch a video: Lake Erie Algae Blooms (7:20)</p>	<p>Respond: After watching the video, what are you thinking about? Is the algae bloom issue more complicated than you anticipated?</p> <p>Click here to enter your response to the video</p>


	Explain	
	<p>Find Out: What exactly causes Algae Blooms? Click here to watch a video by OSU Professor Jay Martin: <i>What Causes Algae Blooms on Lake Erie</i> (2:54)</p>	<p>Quiz activity: Click here to access quiz entitled Algal Blooms</p>

	Elaborate	
	<p>Read: Click the link to read: Harmful Algae Blooms Affect on Humans?</p>	<p>Study vocabulary: Click the link to study the Effects of Algae Blooms on Humans</p>
	<p>Watch: Click the link to watch: Video : Harmful Algae Blooms Affect on the Environment: <i>Eutrophication</i> (3:28)</p> <p>Watch: Video: <i>Eutrophication and Dead Zones</i> (6:35)</p>	<p>Explain: In your own words, in the box below explain the term Eutrophication:</p> <div style="border: 1px solid black; height: 60px; margin-top: 10px;"></div> <p>Create: Tik Tok Video explaining Eutrophication</p>

	Collaborate	
	<p>Watch: What technologies are being used to protect Lake Erie from Algae Blooms:</p> <ol style="list-style-type: none"> Toxic Algae and the Climate Conundrum (9:42) 	<p>Partner activity: Toxic Algae and The Climate Conundrum Partner Activity</p>

	<p>2. Sensor Measures Toxicity of Lake Erie Algal Bloom in Near Real-Time (2:06)</p>	
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	<h2>Evaluate</h2>	
	<p>Review: Ohio Brochure on Algal Blooms</p>	<p>Respond: Click here to respond to what you have learned about Algal Blooms Guest password: Algalbloom!</p>

	<h2>Extend</h2>	
	<p>Watch: Click here to Watch Video: The Great Lakes Now-Lake Erie Algae (8:03)</p> <p>Watch: Video The Story Behind: Algal Blooms (9:21)</p>	<p>Read: Dangerous Lake Erie Algal Bloom is Eight Times The Size Of Cleveland</p> <p>Read: HABs</p> <p>Read: The Fight for the Lakes-Eutrophication in Madison Waterways by Owen Tsao (medium.com) -The Climate Reporter</p> <p>Read: National Institute of Environmental Health Sciences</p> <p>Review: Harmful Algal Bloom Satellite Monitoring System</p>

		Ohio EPA Harmful Algal Blooms
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