

# SCIENCE AND CIVICS OF THE FLINT WATER CRISIS

Est. Time: 60-90 minutes

Subjects: ELA, General Music, HSS, Science, SEL

Age Range: Middle & High School

See the full lesson [here!](#)


★ *TEACHROCK* ★





How did the water become polluted in Flint, Michigan, and what has been done to fix the problem?


In this lesson you will:

- Explore what happened to the drinking water of Flint
  - Discover the health risks of lead exposure
  - Find out how artists and activists responded to the Flint Water Crisis
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The city of Flint, Michigan has not had clean drinking water since 2013. The water that comes out of faucets in Flint is so filthy that it often looks like the image to the right.





The background features a dark blue gradient. In the upper portion, several water molecules are depicted as ball-and-stick models, with light blue spheres representing oxygen atoms and smaller purple spheres representing hydrogen atoms. In the lower portion, a dark grey horizontal line represents a surface, with several yellow, arrow-shaped shapes pointing to the right, suggesting flow or movement.

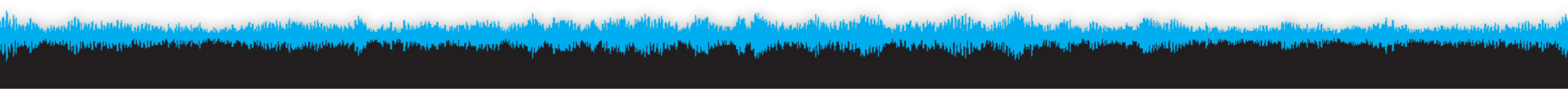
Water (H<sub>2</sub>O)

## CORROSIVE CHEMISTRY

Watch [this video](#) to discover why the water in Flint, Michigan became contaminated.



Consider or ask a friend:

- When did the Flint Water Crisis begin?
  - What is “Orthophosphate?” What role does it play in water treatment?
  - Based on the clip, what might “corrosion” be?
  - Why did lead end up in Flint’s drinking water?
  - How did chloride get into the water? What did it do?
  - Why is lead so dangerous for people?
- 




The water in Flint contained lead, which is extremely harmful, especially to children. Examine **this infographic** from the World Health Organization to better understand the health risks related to lead exposure.





Consider or ask a friend:


- What are some ways lead exposure harms your health?
  - What bodily systems does lead affect?
  - What kinds of people seem most vulnerable to lead exposure?
- 





Examine **this diagram** to see how water is typically treated and purified.

Consider or ask a friend:

- Where does drinking water come from? How many steps are required to purify drinking water?
  - What step of the water treatment process keeps lead from entering the water?
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Many people spoke out about water contamination in Flint.

Pediatrician Dr. Mona Hanna-Attisha was one of the first to announce increased lead exposure in Flint's drinking water.

Initially, the Michigan Department of Environmental Quality under Governor Rick Snyder dismissed Dr. Mona's research and accused her of causing "near hysteria."


Watch [this video](#) of Dr. Mona explaining the cause of the Flint Water Crisis.







Consider or ask a friend:

- According to Hanna-Attisha, why did the city officials of Flint decide to switch water sources? What new source of water was chosen?
  - What caused lead to get into the water? Was lead present in the Flint river, or did get into the water in another way?
  - Hanna-Attisha mentions the government did not include anti-corrosion treatment to the water from the Flint River. Why?
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Vic Mensa is a rapper from Chicago who commonly addresses social issues in his creative work.


In 2016 he released “Shades of Blue,” which addresses the Flint Water Crisis. Read a portion of the lyrics to the song [here](#). You can also watch a video of Mensa explaining the song in [this video](#) (warning: some strong language present).







Consider or ask a friend:

- Do you think Mensa has described the Flint Water Crisis accurately and effectively in the song? Why or why not?
  - What further aspects or considerations of the Flint Water Crisis does Mensa introduce?
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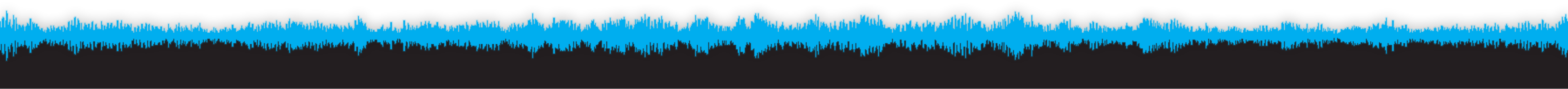


Amariyanna “Mari” Copeni, also known as “Little Miss Flint,” is a community activist in Flint, Michigan.

After the Flint water was deemed contaminated, Copeni organized a successful crowdfunding campaign to get water bottles to the citizens of Flint.

She regularly advocates for the people of Flint and greater social justice issues through her social media accounts.

**Read the letter Copeny wrote to President Obama, and his response here.** Copeny’s advocacy contributed to Obama’s decision to allocate \$100 million to repair Flint’s water system.





After hearing about the Flint Water Crisis, 12 year old Gitanjali Rao invented a faster method to identify lead in water. She has been named “America’s Top Young Scientist” and was awarded \$25,000 to develop the technology.

Learn more about Rao’s invention in [this video](#).





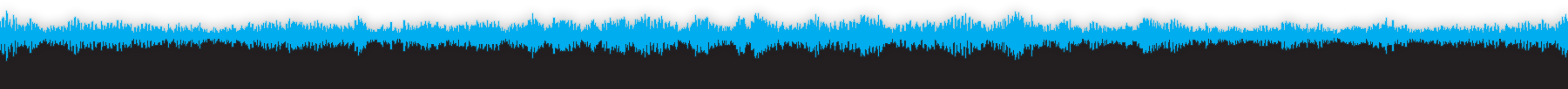
# SUMMARY

- The Flint Water Crisis occurred because the city's emergency manager, among other government officials, didn't include anti-corrosive chemicals to the treatment of the Flint River as a way to save money
- Without anti-corrosion chemicals, lead from pipes seeped into the drinking water
- Despite warnings from doctors and scientists such as Mona Hanna-Attisha, the Michigan government under Rick Snyder ignored the issue for many months
- Young artists such as Vic Mensa, activists such as "Mari" Copeny, and scientists such as Gitanjali Rao responded to the Flint water by creating new art, advocacy campaigns, and technology

# BE CREATIVE

In August 2020, the state of Michigan reached a \$600 million dollar settlement to compensate residents in Flint, Michigan for their exposure to lead in their drinking water. Read more about the settlement in [this NPR article](#), then write a short response on whether you feel the settlement is an appropriate response for what occurred in Flint.

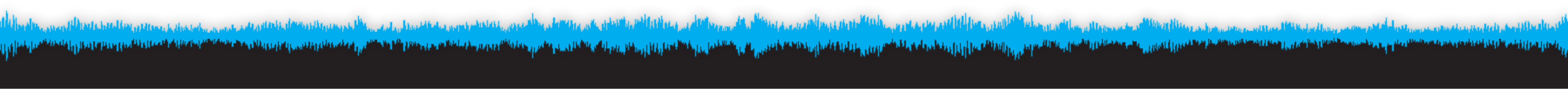
Using Vic Mensa, Mary Copeny, or Gitanjali Rao as inspiration, write a song, outline a social media campaign, or design a technological invention that addresses an environmental issue.





# CONNECT

Share with us! Either you or an adult in your life can share your song, social media campaign, or invention with TeachRock on **Instagram** or **Facebook**, email to **info@teachrock.org**, or Tweet it to **@TeachRock**







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