



Civics Education: Flint Water Crisis Lesson Plan

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Lesson Background	NRS Levels
Civics Education: Flint Water Crisis Lesson Plan	High Intermediate Basic Education to Low Adult Secondary Education

Recommendations for Direct Instruction
Although standards are identified, there are no directions for explicit instruction. The instructor is suggested to choose the right College and Career Readiness Standards level and then add in the direct instruction of the standards where appropriate.

Project Title	Approximate Instruction Time
Research Task Chart	1 hour and 30 minutes

Instructional Objectives <i>(written in teacher language primarily derived from content standards and includes evidence of mastery):</i>	Learning Target Statements <i>(written in student-friendly language and helps learners reflect on what they are able to do as a result of the project) for learners' exit tickets, learning logs, or reflection:</i>
After watching video clips or reading the information on lead exposure and then discussing the issues, ABE/ASE students will be able to: • Use the key details from the text/video to explain • the environmental sources of lead exposure, • how lead gets into drinking water, • and five or more ways lead exposure affects health. • Synthesize information from multiple sources in order to explain the issues that led to water contamination in Flint, Michigan. • Expand their interpersonal skills by collaborating to research and present information on the Flint water crisis.	• I can explain how lead gets into drinking water and why this is harmful to our health. • Before I could ...; now I can ...

Lesson Area	Lesson Information
ELA/Mathematics/EL P Standard(s) Addressed:	College and Career Readiness Anchor Standards: • SL1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively. • W8: Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. R8: Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
Central Skills Taught:	☒ Adaptability and Willingness to Learn ☒ Communication ☒ Critical Thinking ☒ Interpersonal Skills ☐ Navigating Systems ☐ Problem Solving ☒ Processing and Analyzing Information ☒ Respecting Differences and Diversity ☒ Self-awareness

Lesson Area	Lesson Information
Language Demands: (Include academic language, language skills, etc.)	Academic Language Functions: • Describing cause and effect • Elaborating on others' ideas Content-Specific Vocabulary: • Lead • Emergency manager • Corrosion • Public health • Leach • Infrastructure • Solder • Stakeholder • Toxic and toxins • Contamination • Community crisis

Lesson Area	Lesson Information
Assessing Mastery of the Objective(s) and Central Skills: Indicate <u>when</u> and <u>how</u> assessment – formative and/or summative - will occur during the project.	Proof of Learning: ☐ Via observation of a team task (e.g., discussion, work on project) ☐ Via team self-assessment ☐ Via individual self-assessment ☒ Via team product ☐ Via individual product ☐ Other (Please list): Proof of Learning Tools: ☒ Rubric ☒ Checklist ☐ Quiz ☐ Other (Please list): Ongoing Formative Assessment ☐ Nonverbal responses to comprehension questions (e.g., answer cards, Kahoot!) ☐ Peer-to-peer quizzing ☐ Exit/admit tickets ☐ KWL charts ☒ Other (Please list): T-Charts or team research chart

Lesson Area	Lesson Information
Adaptations and/or Accommodations How will you increase access to the content of the project? Identify differentiation strategies.	For lower-level learners, preview key vocabulary, adapt the text in the reading materials on the infographics, use visuals and guiding questions to convey complex content, and adjust the research task sheet questions to the appropriate level (e.g., using active voice). Have students focus on the visual and caption in an infographic. They can write single words in a graphic organizer. For higher-level learners, use visuals and guiding questions to convey complex content. Students can read the “small print” in addition to the visual and caption in an infographic. They should use phrases and sentences in a graphic organizer

Procedure	Description	Central Skills	Materials
Introduction: How will you introduce the lesson objective and how it fits into the unit/LOI? Identify its relevance to learners’ needs and goals. Timing: 15 minutes	Warm-up Show pictures of examples of community issues—image of child with measles, homeless tents, graffiti/vandalism, trash dumping, pot holes, etc. Teacher (for each picture): <i>What do you see in this picture?</i> <i>Who has seen or experienced this issue in your own community?</i> Teacher: Have you been in a situation when city or state services were not provided well? Think about utilities, road and highway maintenance, school systems and school buildings, natural disaster cleanup, and so on. Small groups with one T-chart per group: Heading 1: Issue/situation you encountered Heading 2: Effect on you, your family, or your community	• Communication • Critical Thinking • Processing and Analyzing Information	Relevant readings: Readings from EPA website: • How lead gets into water: https://www.epa.gov/groundwater-anddrinkingwater/basicinformationabout-leaddrinkingwater#getinto • Health effects of exposure to lead in drinking water:

Procedure	Description	Central Skills	Materials
	After the students complete the T-charts, the teacher asks the following: • <i>How did you, your family, or your community try to solve this problem or improve the situation?</i> • <i>What were the results when you, your family, or your community tried to solve the problem or improve the situation?</i> Teacher: <i>Today and in other lessons in this unit, we are going to focus on Flint, Michigan, where the city water system was not working properly. Citizens were exposed to lead and other toxins and bacteria in their drinking water. We are going to discuss (1) the reasons this happened, (2) the effects on the citizens, (3) the strategies that are being used to solve the problem, and (4) how we can use this situation in Michigan to think about our own communities.</i> The teacher asks the students to record any new vocabulary words in their vocabulary journals. Some terms will be defined together in class; the students may need to look up others on their own. Teacher: <i>What do you already know about lead? Work in teams of three to record anything you already know.</i> What is lead? _____ Where does it come from? _____ What are the ill effects of lead? _____		• https://www.epa.gov/groundwater-and-drinkingwater/basicinformationabout-leaddrinkingwater#health • Timeline of events: https://www.msnbc.com/msnbc/flint-water-crisis-timeline-msna782891 • Lasting effects: https://www.washingtonpost.com/news/wonk/wp/2017/09/21/flints-lead-poisoned-water-had-a-horrifyingly-large-effect-on-fetal-deaths-study-finds/?hpid=hp

Procedure	Description	Central Skills	Materials
	Teacher: <i>What have you heard about lead in the news related to Flint, Michigan, or another location in the United States?</i> <i>Why is having lead in our water, air, and soil an important issue for Americans to think about?</i> The teacher provides the following definition of lead from the Agency for Toxic Substances and Disease Registry as a handout or projects it using a PowerPoint slide. The teacher reads the definition aloud, responds to questions and clarifies unfamiliar terms or asks students who know the terms to explain them. <i>Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing. Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. Source. Centers for Disease Control and Prevention (CDC): https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=93&toxid=22</i>		https://www.michiganradio.org/health/2019-04-24/tracking-the-flint-water-crisis-health-effects
Explanation and Modeling: What type of direct instruction do	Teacher: <i>Is the water coming from the water plant contaminated with lead or does the contamination happen at a different point? Where does the lead in our water come from? What went wrong in Flint? How does lead affect our health? These are questions you will explore through some research.</i>	• Critical Thinking • Processing and Analyzing Information	• Research Task handout (Appendix A)

Procedure	Description	Central Skills	Materials
learners need? Are there ways for learners to access the new content independently? What types of models will you provide and when? Timing: 35 minutes	Team Topics (see the Research Task handout [Appendix A]) A. How does lead get into drinking water? See available online resources and the information graphic from the Environmental Protection Agency (EPA): https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=500025PW.txt B. What happened in Flint, Michigan? See available online resources and available videos; use this simple timeline at http://www.msnbc.com/msnbc/flintwater-crisis-timeline C. What are the ill effects of lead on our health? See available online resources and the fact sheet from the Clean Water Action website: https://www.cleanwateraction.org/sites/default/files/Lead%20and%20Drinking%20Water%20Fact%20Sheet_0.pdf Working together, teams explore their resources and make notes in their section of the chart. Each student team creates its own infographic, capturing the main points of the topic it will present to others in the class. The teacher scans or makes copies of the infographic and distributes one to each team member.		• Paper and markers or an online infographic template (e.g., Visme) • Student-created infographics

Procedure	Description	Central Skills	Materials
Guided Practice: Which tasks and learning activities will you use to engage learners with the content and skills? How will you structure the tasks or other learning activities to support learners' success? Timing: 25 minutes	Formation of New Groups Each team presents its infographic while others make notes in the appropriate sections of the Research Task handout (Appendix A). To synthesize what they have learned so far, teams fill in the first four columns of the Community Problem Strategy sheet (Appendix B) for the water crisis in Flint. They can refer to this sheet throughout the unit and add to it as they learn more. In preparation for the subsequent lessons on what actions the community took, have the students look at both the Research Task chart and this chart to think about how their ideas might compare with what their continuing research will show.	• Communication • Interpersonal Skills • Respecting Differences and Diversity	• Research Task handout (Appendix A) • Community Problem Strategy handout (Appendix B)

Procedure	Description	Central Skills	Materials
Student Reflection on Learning Targets, Closure, and Connection to Future Learning Timing: 10 minutes	Have the students complete a short checklist based on the questions from the introduction task. - I can tell someone what lead is and where it comes from. Yes ☐ No ☐ - I can describe five ill effects of lead. Yes ☐ No ☐ - I can explain what happened in Flint, Michigan. Yes ☐ No ☐ Wrap-up Questions on Wall Chart for Exit Cards (if time allows) The teacher hands out index cards, one to each student. The students write their name on their index card, followed by the question numbers and their responses to the questions. Teacher: <i>Write your name on your index card. The questions are on this chart. Write your answers by labeling them 1, 2, and 3.</i> - Why do you think we discussed these topics today? - List three facts that you learned today from the video, reading, and group discussion. - What is one question that you have? Or is there something that you found confusing about the information we read or discussed today? The teacher can begin to observe and take notes in preparation for completing the Reading Comprehension rubric over the course of the entire unit.	- Processing and Analyzing Information - Self-awareness	

Appendix A. Research Task

Step I: Each team is responsible for gathering information about one aspect of the Flint, Michigan, water crisis. Explore the assigned materials and take notes in your section of the chart below.

Team A: How does lead get into drinking water?	Team B: What happened in Flint, Michigan, to create a crisis?	Team C: What are the ill effects of lead on our health?

Step II: Create a simple infographic representing the key points for your question.

Step III: Present your infographic and enter notes in the chart above as you learn about the two other questions explored by your classmates.

Appendix B. Community Problem Strategy

Complete the chart below based on today's discussion about the Flint, Michigan, water crisis.

What is the community problem?	Who is most affected by this problem (which stakeholders) and how are they affected?	What caused the problem (which institutions, organizations, people, events, etc.)?	What has been done to solve the problem? If actions were taken, who took them and how effective have they been?	Who should be involved in solving the problem (which people, institutions, organizations, etc.)?	Describe two ideas for how to solve this problem. Give <i>at least</i> one reason you think each idea will work.



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