



High School Science Virtual Learning

Earth Science

Human Impact on Land

May 20, 2020



High School Environmental Science

Lesson: May 20, 2020

Objective/Learning Target:

Students will explore several impacts of humans on land.

Let's Get Started:

1. What is a toxic chemical?
2. Where is Times Beach, Missouri?
3. What does EPA stand for and what do they do?





Let's Get Started: **Answer Key**

1. Any substance that harms the environment and other organisms or is hazardous to your health.
2. 17 miles South of St. Louis, and 2 miles East of Eureka, Missouri.
3. United States Environmental Protection Agency. They work with the legislative groups nationally to ensure clean drinking water, air, and common places.
 - a. Can also mention in charge of waste management.
 - b. Regulates businesses to protect Americans' health.



Lesson Activity:

Directions:

1. Watch the video about the Times Beach Missouri contamination.
2. Answer the questions found on the next slide.

Link: Watch Video Here: [Times Beach](#)



Practice

Complete the following questions using the information you learned during the lesson activity.



Questions:

After watching the video answer the following questions:

1. What are some of the health concerns connected to Dioxin?
2. What connection does the Times Beach contamination have with the Vietnam War?
3. Many residents of Times Beach refused to leave for a long time. Would have stayed?
4. Research the cleanup measures that were taken in Times Beach. What did the EPA do? Was the cleanup successful?
5. How confident in the cleanup are you? Would you visit the park that now marks the location? Discuss your reasoning behind your answers.



Once you have completed the practice questions check with the **answer** key.

Pre- video question: Examples of plastic items possibly used include: shampoo bottles, hand soap containers, straws, shopping bags, dolls, water bottles, vacuum, television, toothbrush, etc.

Answers to questions:

1. See above for examples.
2. Students will determine this on their own, examples would be “11 of the 20 items.”
3. Students will determine this on their own, examples would be “9 of the 20 items.”
4. To find the answer: take your answer from number 3 times 330,000,000



More Practice: Plastics

1. Pre-video: Consider what plastic items you use daily. Make a list of these items.
2. Watch this [Video](#) about plastic then answer the questions found on the following slides.



More Practice: Plastics

Questions:

1. Look at your list from the pre-video question. Add any plastics products you use but didn't think to put on your list. Write "single use" next to anything that qualifies as a single use plastic.
2. How much of the plastics that you use do you recycle?
3. How much of the plastic you use could be eliminated by substituting it with something else? (ex: replace plastic bags with reusable shopping bags)
4. The USA population is approximately 330 million people. If every person in the country committed to eliminating that same amount of plastic, how much would be kept out of the environment?



Once you have completed the practice questions check with the **answer** key.

1. Deformity, cancer, reproductive issues, developmental problems
2. Dioxin is a chemical component of Agent Orange, which was used for chemical warfare in the Vietnam War.
3. Students should explain why they would or would not stay if this happened in their community.
4. People were evacuated and buildings were burned and buried. According to the EPA the area is now once again safe.
5. Students should state their level of confidence (complete, some, none, etc), weather they would visit the park or not, and explain why.



Additional Practice: Superfund sites (toxic incident locations)

Select the link from the bottom of this slide. Once you have seen the short clip you will be researching one superfund location. Write about one location that interests you from the video.

Include:

- When/where it happened?
- What caused the problem?
- How the contamination occurred?
- What were the effects on the environment and the community?
- Was there a cleanup effort (and if so was it successful)?
- Was there any kind of compensation for the people who were affected?

Link: [These types of places are more common than you might think.](#)