



Lesson Plan: Raise Awareness About Potentially-Dangerous Attic Insulation

OVERVIEW:

This lesson plan is designed to be used in conjunction with the film *Libby, Montana*, a film that details the tragic struggle of a small town whose residents were exposed to a toxic form of asbestos from its local mine. This same form of asbestos is estimated to be present in the attic insulation of approximately 35 million homes across the United States. This lesson mobilizes students to reach out to members of their community to educate them about the potential health risks associated with this insulation and safety precautions that should be observed.

P.O.V. documentaries can be recorded off-the-air and used for educational purposes for up to one year from the initial broadcast. In addition, P.O.V. offers a lending library of DVDs and VHS tapes that you can borrow anytime during the school year — FOR FREE!

OBJECTIVES:

By the end of this lesson, students will:

- Use viewing skills and note taking strategies to understand and interpret video clips.
- Study information from the U.S. Environmental Protection Agency (EPA) about vermiculite attic insulation that may contain dangerous asbestos fibers.
- Work in a group to develop a community outreach campaign and justify its strategy.
- Develop and distribute communications that educate the community about safety precautions related to vermiculite attic insulation.

GRADE LEVELS: 6-12

SUBJECTS: Current Events, U.S. History, Civics, Geography, English, Health

MATERIALS NEEDED:

- Method (varies by school) of showing the class online video clips
- Map showing the location of Libby, MT

ESTIMATED TIME OF COMPLETION: One 50-minute class period to set up the project, plus additional class time at your discretion to sign off on project components, allow time for group work, etc.

SUGGESTED CLIPS:

Clip 1: Working at the Mine (length: 12:12)

The clip begins at 14:38 with the line, "I'll now go ahead and swear in the witness." The clip ends at 24:46 after the line, "I just got a death sentence."

Clip 2: Little League Baseball (length: 1:32)

This clip is available online at:

http://www.pbs.org/pov/pov2007/libbymontana/special_01.html

BACKGROUND:

Libby is a small town located in the northwest corner of Montana. The town's main industries are lumber, mining, tourism and recreation. In Libby, 70 years of strip-mining an ore called "vermiculite" exposed workers, their families, and thousands of residents to a toxic form of asbestos, creating what the Environmental Protection Agency (EPA) has called the worst case of industrial poisoning of a whole community in American history. This poisoning continued for more than 30 years after W.R. Grace, the industrial giant who owned the mine, knew of the dangers. By the time the EPA began screening Libby residents in 2001, more than 1,200 of those tested, or roughly one-quarter of the town's population, were found to have lung abnormalities associated with asbestos exposure — 10 times the national average. Hundreds have died from asbestos-related lung disease. While cleanup efforts are underway in Libby, MT, an estimated 35 million homes in the U.S. today contain insulation made from vermiculite.

ACTIVITY:

1. Using a map, show students where the town of Libby is located in the northwest corner of Montana. Explain that in Libby, 70 years of strip-mining an ore called "vermiculite" exposed workers, their families, and thousands of town residents to a toxic form of asbestos, creating what the Environmental Protection Agency (EPA) has called the worst case of industrial poisoning of a whole community in American history.
2. Play the video clip, "Working at the Mine" (length: 12:12) and ask students to take notes on how mine workers came to learn about the dangers of the asbestos-filled dust they had been breathing. At the end of the clip, tell students that the man at the end of the clip died in January 2007.
3. Next, explain that mine workers were not the only ones exposed to this toxic dust, but the children of Libby were unknowingly exposed to the dangers of asbestos as well. The waste product of the mine was used for the track at Libby High School, so toxic dust with dangerous asbestos fibers were kicked up every time someone ran on the track. There were also dangers around the Little League baseball fields that poisoned the town's children without anyone's knowledge. Show students the clip, "Little League Baseball" (length: 1:32) with EPA official Paul Peronard describing what happened at the Little League fields in Libby.
4. Tell students that, like the children of Libby, they and other Americans may not be aware that they could have asbestos-laden vermiculite in their environment. The vermiculite mined in Libby was used in attic insulation for an estimated 35 million homes across the country. The EPA warns that disturbing this insulation in your attic could potentially spread asbestos fibers throughout your home, putting your family at risk of breathing them in. People need to know important safety precautions to take in order to avoid this danger. Please emphasize to students that they should not go look at the insulation in their attics since doing so could stir up toxic particles if asbestos is present. Students should ask their parents if they have vermiculite insulation, and if so, their family should follow the safety guidelines outlined by the EPA resources listed in step #5.

5. Break students into small groups and point them to the following EPA documents:

- EPA's Pilot Study to Estimate Asbestos Exposure from Vermiculite Attic Insulation (<http://www.epa.gov/asbestos/pubs/vaipilotstudy.pdf>)
- Current Best Practices for Vermiculite Attic Insulation (<http://www.epa.gov/asbestos/pubs/verm.html>).

6. Challenge students to use these and other resources to develop a community outreach campaign to help educate local residents about the potential risks associated with vermiculite attic insulation. Each group should develop a written plan and rationale for its campaign strategy, and create the actual message they will share in a medium of their choice (e.g., podcast, editorial, news story or press release, visual display, fact sheet, etc.).

7. Assign appropriate deadlines for you to sign off on each group's plan, message, and completed distribution of its message.

ASSESSMENT SUGGESTIONS

Students can be assessed on:

- Their written outreach plan and rationale for its strategy.
- The quality of their outreach materials. Consider using the following rubrics for scoring purposes:
 - Podcasts (<http://www.uwstout.edu/soe/profdev/podcastrubric.html>)
 - Editorials (<http://www.sdcoe.k12.ca.us/score/actbank/editorialrub.html>)
 - News Stories (http://www.howard-winn.k12.ia.us/eblue/rubrics/news_rubric.html)
 - Displays (http://www.saskschools.ca/~aboriginal_res/evaluation/disrub.htm)

EXTENSIONS & ADAPTATIONS

- Watch the film, *Libby, Montana* in its entirety. Then, do one or more of the following activities:
 - Develop a collection of case studies of past and present "Superfund" sites. (See the EPA's Superfund site (<http://www.epa.gov/superfund/>) for more information. See also details of the benefits and limitations of the EPA Cleanup in Libby, MT at the P.O.V. Web site.) Compare and contrast these sites and develop a list of recommendations for how the process of addressing hazardous waste sites can be improved.
 - Identify the most significant sources of pollution in your community. (You can type in your zip code at [Scorecard.org](http://www.scorecard.org) to get an in-depth pollution report for your county, covering air, water, chemicals, and more. Or visit the Web site for your state environmental agency). Divide students into groups of four and ask the members of each group to take on the roles of "citizen," "health professional," "polluter" (perhaps a business like W.R. Grace), and "politician." Groups should then work together to craft a cleanup plan that best meets the needs of each stakeholder. Students can simulate a mediated town hall meeting where each stakeholder makes a presentation of their view on the situation.
 - Engage students in an open classroom discussion that addresses a corporation's responsibility in protecting the health and environment of its

workers and surrounding communities. What could W.R. Grace have done to both prosper as a company and mitigate the damage to Libby and its people?

- Track news coverage of the legal proceedings involving Libby, MT and the W.R. Grace Company. Begin with the details outlined in P.O.V.'s W.R. Grace update and continue by following events of the Fall 2007 criminal trial of W.R. Grace executives.
- Explore why it is so difficult for people in Libby, MT to find appropriate and affordable health care. The P.O.V. feature, Health in Libby, explains some of their frustrations. The W.R. Grace site, Libby Issues & Answers (<http://www.libbyissues.com>) explains what the company is doing to help. What role, if any, should government play in ensuring that Libby residents get the care they need?
- Read "Breaking the Story of Libby's 'Dirty Little Secret'" on the P.O.V. Web site to find out the steps journalist Andrew Schneider followed to investigate and break the story about what was happening in Libby, MT. What does it mean to be an investigative reporter? How is investigative reporting different from other kinds of reporting? What is the role and responsibility of the press in a situation like that in Libby, MT? What was the result of Schneider's reporting?
- Delve deeper into themes of the environment, corporate power and accountability with the P.O.V. films, *The Fire Next Time*, *Thirst*, and *Maquilapolis*.
- Follow the efforts of U.S. Senator Patty Murray (D-Washington), who since 2002 has introduced a bill every year to address the use of asbestos-containing products in the U.S. See the P.O.V. Asbestos update for a summary of her 2007 bill and Thomas.gov for the bill's text and related Congressional actions.
- Study the physical and chemical properties of tremolite (a form of asbestos that naturally occurred in the vermiculite ore mined in Libby) at the molecular level. (The CDC provides a PDF file with details. (<http://www.atsdr.cdc.gov/toxprofiles/tp61-c4.pdf>) How is it chemically bonded? What properties of asbestos make it appealing for commercial applications? You can find a list of asbestos-containing products (<http://www.epa.gov/Region06/6pd/asbestos/asbmatl.htm>) at the EPA Web site.
- Investigate the potential health impact of the World Trade Center collapse after the 9/11 attacks, when airborne dust containing asbestos and other dangers blanketed Lower Manhattan. Compare and contrast this situation with that in Libby, MT.

RESOURCES:

EPA Action in Libby, MT

<http://www.epa.gov/region8/superfund/libby/>

This Environmental Protection Agency Web site provides information on current cleanup efforts in Libby as well as general information on asbestos and vermiculite.

W. R. Grace

<http://www.grace.com/About/EHS/Libby/Default.aspx>

W. R. Grace's Web site includes a detailed explanation of events in Libby from the company's perspective, including official denials of wrongdoing.

STANDARDS:

These standards are drawn from "Content Knowledge," a compilation of content standards and benchmarks for K-12 curriculum by McRel (Mid-continent Research for Education and Learning) at <http://www.mcrel.org/standards-benchmarks/>.

Civics

Standard 13: Understands the character of American political and social conflict and factors that tend to prevent or lower its intensity.

Standard 28: Understands how participation in civic and political life can help citizens attain individual and public goals.

Geography

Standard 14: Understands how human actions modify the physical environment.

Health

Standard 2: Knows environmental and external factors that affect individual and community health.

Language Arts

Standard 4: Gathers and uses information for research purposes.

Standard 8: Uses listening and speaking strategies for different purposes.

Standard 9: Uses viewing skills and strategies to understand and interpret visual media.

U.S. History

Standard 31: Understands economic, social, and cultural developments in the contemporary United States.

ABOUT THE AUTHOR:

Cari Ladd, M.Ed., is an educational writer with a background in broadcast journalism, secondary education, and media development. Previously, she served as PBS Interactive's Director of Education, overseeing the development of curricular resources tied to PBS programs, the PBS TeacherSource Web site (now PBS Teachers), and online teacher professional development services. She has also taught in Maryland and Northern Virginia.

Background Sources

2000 U.S. Census

"Uncivil Action: A Town Left to Die." Andrew Schneider. *The Seattle Post-Intelligencer*. November 18, 1999.