

Instructor Notes

Risk Communication: Media Presentation Exercise

Participants are given basic information about an environmental contamination scenario. Then, in groups, they prepare a brief broadcast or print news report from one of five possible viewpoints.



The activity is written for workshop participants and may need modification for classroom use.

Suggested Background Readings

- Principles of Environmental Site Assessment
- A Scientific View of Risk

National Science Education Standards for Grades 5–12

Science in Personal and Social Perspectives

- Risks and Benefits
Important personal and social decisions are made based on perceptions of risks. Students present different viewpoints of an environmental contamination scenario to demonstrate how various risk perceptions can affect personal and social decisions about the inherent threat of a contaminant.
- Personal and Community Health
Hazards and the potential for accidents exist. Students evaluate a hypothetical chemical spill to learn that humans use emotional, social, and technological mechanisms for reducing and modifying environmental hazards.
- Science and Technology in Local, National, and Global Challenges
Understanding basic concepts and principles of science and technology should precede active debate. Students preparing a news story about a hazardous waste spill begin their assessment by characterizing the waste, evaluating its potential pathways, and identifying nearby targets.

Procedure Notes and Outcomes

Divide participants into groups of 4–5 and assign each group one of the scenarios described in the Activity Instructions. Have them use the basic facts provided in the scenario to prepare a 1- to 2-minute broadcast news story.

Have all groups present their “broadcasts” to the class. As a class, discuss the biases of each perspective and how those biases affected both what information was chosen and how it was presented.

The information presented in the scenario could sound quite alarming if reported as is over a wire service. However, using site assessment principles, you can lead a class discussion about some of the additional questions that must be answered before the actual hazards posed by the spill can be evaluated. The following paragraphs can serve as a guide for this discussion. You can also use Table 1 in the “Principles of Environmental Site Assessment” Background as a guide.

Although information about the spill is limited, we know that a potential threat exists because we have a known hazardous substance, a release to the environment, potential pathways through the environment, and possible nearby targets (population drinking the water from the lake).

The first step is to characterize the waste. This might involve asking the following questions:

1. How did the spill occur? In other words, what is the source (tanker truck, illegal dumping, leak in tank or pipeline, etc.)?
2. What was the quantity of the chemical spilled?
3. How toxic is the chemical?
4. Which pathway does the chemical pose the greatest threat to? Is the substance volatile? What is its relative solubility in water?

In theory, these questions are answerable because if the chemical composition and exact time of the spill are known, then someone must have been around to report it. If someone witnessed it, then the origin of the spill, the approximate quantity of the spill, and (possibly) the responsible party are known.

The fact that the chemical causes cancer in laboratory animals may alarm the participants, but this fact alone is insufficient to evaluate the site. We must consider whether the chemical is acutely toxic when ingested or inhaled. For example, consider two different possible chemical releases: 1) saccharin, an artificial sweetener, which when ingested in high doses is also known to cause cancer in laboratory animals, and 2) phosgene—a gas with extreme toxicity in low doses. The entire town may need to be evacuated immediately in the case of a phosgene release, while a saccharin spill would have little notice.

Other characteristics of the chemical must also be considered. For example, the chemical may bioaccumulate and be more of a hazard to people eating fish from the lake. Perhaps the chemical is a threat to sensitive environments such as wetlands, endangered species, or nature preserves.

Next look at attribution and releases:

5. Does company XYZ use the chemical in question?
6. Was the spill actually observed to enter the lake, 100 m away?
7. If not, what is the likelihood that the chemical reached the lake? In other words, did someone see the chemical enter the lake, or is there a direct overland path from the area of the spill to the lake (drainage ditch, stream channel, etc.)? If the spill occurred in a closed depression unconnected to the lake, then the likelihood of release to the lake via overland flow is relatively small.
8. What is the geology of the area? For example, did the spill occur in a karst (limestone) terrain where the likelihood of release to the lake via groundwater-to-surface-water flow is relatively high, or on impermeable glacial till, where the probability of release to the lake by this pathway is small?
9. Was the lake water sampled for the chemical in question? What were the results? It is unlikely that validated sample results would be available in the time frame presented in the scenario. Even if analytical results were available, what would they imply? Can you attribute the presence of the chemical in the lake directly to the spill? For example, is there a “normal background level” for the chemical in the lake? Was the concentration above the background level? Even if XYZ Corporation is responsible for the spill, how do you know the company is responsible for the lake contamination? Other industries in the area may also use this chemical.
10. How far away from the spill is the town’s water intake?
11. How persistent is the chemical in water? If the lake is very large (like Lake Erie) and the intake far away, then contamination of the water supply is unlikely to show up for a long time—maybe weeks, months, or even years. By this time the chemical will be very diluted. Insoluble contaminants may never reach the intake. Other contaminants may biodegrade or volatilize before reaching the intake.

Activity Instructions

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Imagine this scenario—you are a news reporter and as you walk into work Wednesday morning, you are presented with the following information:

- An undetermined quantity of a liquid contaminant, 2,4-dichlorodioxobenzene, was spilled in Small Town, Ohio.
- The spill occurred in close proximity to the XYZ Corporation yesterday at 3:00 p.m.
- The contaminant is known to cause cancer in laboratory animals.
- The contaminant was spilled within 100 m of a large local lake, which is the source of the city's water supply.
- XYZ Corporation employs more than two-thirds of the town's residents and has had a history of chemical releases during its 35 years in Small Town.

You must write a news story based on this information. You must complete your story by 5:00 p.m. today for the evening broadcast. The time now is 8:35 a.m.

Procedure

1. Given the information above, prepare a 1- to 2-minute broadcast or a short written story as determined by your group's assigned viewpoint. (Viewpoints are described below.)
2. Determine who in the group will present the story. The other members of the group should be prepared to talk about the factors that determined what kind of information went into their story during a class discussion.
3. Be prepared to discuss how you selected the facts you included in your presentation of this breaking story. What additional information would you try to gather before your deadline? (XYZ's phone is conveniently busy all day.)

Viewpoints

- You are a local news correspondent for Small Town's #1 TV station. (There are only two stations in town.) You live ½ mile from the area of contamination. You prepared soup (using tap water) last night for your family to eat with this evening's meal (while you report the news at 5:00 p.m.).

Did your group find it hard not to place a personal bias on the story? (By the way, you had no time to call your kids and warn them about the contamination, but they never miss a minute of your news segment.)

- You work for a tabloid magazine. Your boss loves to bedazzle the public with breaking, not necessarily factual, stories. She is an environmentalist with a personal vendetta against corporate contamination and grew up in Small Town. She has assigned you this story and wants to be the first to the newsstand. Your last story was, to put it delicately, less than satisfactory with your boss. This is your chance to really “wow” her.

Are there areas where your group feels it can “add” a few pieces of information? Did you uncover differences of opinion among your group?

- You are a regional news correspondent for NBC News. It is your assignment to cover the Small Town contamination in your “Midwestern” segment of the broadcast. You will have 2 minutes of air time to cover the story.

How did the national nature of your broadcast affect what you chose to include in your story?

- You are a local news correspondent for Small Town’s #2 TV station. (There are only two stations in town.) The VP (your boss) of your company used to be an environmental consultant for the XYZ Corporation but was let go during company cutbacks after working eight years on pollution prevention. He then changed fields entirely and pursued a successful career in media relations. He still holds an underlying hatred for large-scale industrial production, especially after his in-depth experience with XYZ Corporation’s environmental policies.

Does your boss’s viewpoint affect what information you will include?

- You are a news reporter for Channel X News. The Board of Education has just introduced Channel X to the schools and your supervisor wants this to be a strong factual piece that will convince the Board that this is a worthwhile part of their technology upgrades. Your report will be geared toward the student population. Present educational, scientific, geographic, and economic aspects along with other applicable topics.

Keep in mind your audience and their amount of education.