Ethics Case Study for the Lead Module: With Liberty and Justice for All

Purpose
Environmental health issues are embedded in the values of a culture and addressed by policies and laws. In this module, students are property owners who learn that soil on their property is contaminated with lead. They are asked to consider the issues involved in addressing this problem so that further harm is avoided and a fair solution is developed and implemented.

Overview
The U.S. Environmental Protection Agency defines “environmental justice” as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (http://www.epa.gov/compliance/environmentaljustice/index.html).

In this lesson, students are confronted with the complex task of bringing environmental justice to life given different stakeholders’ interests. A past injustice, such as building highways through poor neighborhoods, results in lead contamination (from the leaded gasoline in automobiles) and lowered property values. Students are asked to assume the role of contaminated neighborhood residents who have just completed an education and intervention program and are being asked to advise policy makers on a fair course of action.

Time
2-3 class periods

Key Concepts
Different stakeholders often have different needs.
Ethical questions are about right and wrong, good and bad, just and unjust.
Policies are developed to protect people’s health, regardless of who they are.
Policies are collective decisions made by a society to enforce or support what is valued.
Past, present and future circumstances should be considered in ethical decisions.
Environmental effects on health are often the result of a chain of events or accumulation of actions that are not visible to us.
Moral decisions are based on what we value (fair treatment regardless of socioeconomic status, health, poor people’s property values).

Skills
Upon the completion of this activity, students will be expected to be able to:

1. Understand how policies affect their economic opportunities.
2. Describe how to develop a policy to address an environmental health issue.
3. Define environmental justice and how it is achieved.
4. Describe how different stakeholders’ interests influence decisions about policy.

Materials
The Case
Role Cards
Worksheets

Period 1: What's your perspective? What do you want to know?
Period 2: What are some possible solutions? (Group work)
Period 2: What are some possible solutions? (Individual Homework)
Period 3: Is your solution fair? (Group work)
Period 3: Is your solution fair? (Individual Homework)
Period 4: What needs to be done – the policy recommendation

Background

Connection to the Soil/Lead Module

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The Case

It is well known that some neighborhoods have more lead than others. Sometimes the lead is in the paint that was used on buildings and sometimes the lead is in the soil surrounding houses and in playgrounds.

For lead to harm health, it must find a way inside the body. One of the ways lead in the soil finds its way into the body is when people – usually children! – put items that have been in the dirt (toys, for instance) in their mouths. For this reason, many people urge the use of lead detection kits to identify lead in soil. Once one has determined that there is in fact lead in a backyard, for instance, then various preventive steps can be taken.

There is a problem, though. It might be that the presence of lead in the soil reduces the value of the house. It might be that others in the neighborhood will stigmatize those who live in the house.

Problem definition – Central question(s) or issue(s)

What if the family that owns the house wants to sell it? Does the presence of lead in the soil really reduce the value of the house? Should it be disclosed to prospective buyers? Should the government provide assistance to people who find themselves caught between the duty to reduce harmful lead exposure and the need to protect a family investment?

Analysis – What are the facts? What can be done? How do we understand the problem through reasoning? How do we uncover them? What is relevant? Who are the stakeholders?

Health Effects of Lead from http://epa.gov/lead/leadinfo.htm#health (May 2003)

In the United States, about 900,000 children ages 1 to 5 have a blood-lead level above the level of concern.

Even children who appear healthy can have dangerous levels of lead in their bodies.

People can get lead in their body if they:
  - Put their hands or other objects covered with lead dust in their mouths.
• Eat paint chips or soil that contains lead.
• Breathe in lead dust (especially during renovations that disturb painted surfaces).

Lead is even more dangerous to children than adults because:
• Babies and young children often put their hands and other objects in their mouths. These objects can have lead dust on them.
• Children's growing bodies absorb more lead.
• Children's brains and nervous systems are more sensitive to the damaging effects of lead.

If not detected early, children with high levels of lead in their bodies can suffer from:
• Damage to the brain and nervous system
• Behavior and learning problems (such as hyperactivity)
• Slowed growth
• Hearing problems
• Headaches

Lead is also harmful to adults. Adults can suffer from:
• Difficulties during pregnancy
• Other reproductive problems (in both men and women)
• High blood pressure
• Digestive problems
• Nerve disorders
• Memory and concentration problems
• Muscle and joint pain

What is interesting and difficult about this case is how many stakeholders have a keen interest in its resolution. Here are some possible solutions, differing in part by how they might satisfy the narrowest interests of the various stakeholders.

• Don’t check for lead any more.
• Check for lead but keep it a secret.
• Try to arrange to check entire neighborhoods for lead to reduce the effects of discrimination and stigma.
• Seek the support of social service and government entities, which can participate in ways ranging from providing educational programs to offering home sale price support.

Note this especially interesting and difficult aspect of the problem. It turns out that lead generally occurs more frequently in the soil of homes in minority neighborhoods than in others. This is sometimes because years ago, when automobiles used leaded gasoline, highways were built through minority neighborhoods because it was cheaper to buy land for the project and because it was reckoned that poor people would not object to having a freeway built through their neighborhoods. Lead in the exhaust became a part of the soil near the highway.
Conclusions – What should be done? What do we value in a conclusion/solution? Appeal to values to choose the best option. Identifying what makes an option the best option.

This is another opportunity to weigh values. We rightly value health, but do not want to cause economic harm to the very people (residents of houses with lead in the soil) we’re trying to help! One of the ways of addressing problems like this is to include community members in education and intervention programs before soil testing begins. This way, the people who actually live in the houses get a say in how best to proceed. Another way is to identify sources of social and governmental support. Having that information at the outset will make the job of testing all the more easy.

Actions/Follow-up – policy, personal, advocacy, environmental justice. Who is responsible going forward? For what? Why? To what end?

The fact that minority neighborhoods have a disproportionate share of pollution, and polluting businesses and industries, is a topic of intense interest and importance. The U.S. Environmental Protection Agency defines “environmental justice” as the “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (http://www.epa.gov/compliance/environmentaljustice/index.html).

Another word for “justice” is “fairness.” How can the idea of environmental justice be incorporated into political and economic decisions? How should society balance the duty to be fair with other duties and rights, including those that govern property rights? Does past discrimination or injustice entitle people to future benefits or compensation?

Many of these ethical questions are resolved at the political level. This might be understood to impose a duty on all interested parties to take a more active and informed role in the political process.

Procedure
Since the focus of this series of lessons is on the importance of actively involving all interested parties (stakeholders) in taking a more active and informed role in the political process, students are asked to make policy recommendations that will encourage fair treatment.

If you are using activities from the lead module, students will have some background on the severity of the problem, especially for children, and the localization of the problem in poor neighborhoods.

The flow of the lessons is from considering the complexity of the problem of home owners who have lead contamination (through no fault of their own) who are being asked to test and report on that contamination, to the development of a policy to present to a funding agency.

The tension between wanting and needing to know about the contamination in order to protect themselves and the need to maintain their property values is at the initial core of the discussions. As students gain background, the discussion moves to how to work
together and get support to mitigate the effects of the lead contamination on health and property values.

**Period 1: What's your perspective? What do you want to know?**
Students read and discuss the scenario from the perspective of the homeowners, identify what they know and what they need to know and plan how to find out. ([www.epa.gov/lead](http://www.epa.gov/lead) [www.cdc.gov/nceh/lead/lead.htm](http://www.cdc.gov/nceh/lead/lead.htm)) If you would like to intensify student engagement at this stage, you may wish to take on the role of the education program coordinator for a social service agency and put them through an “educational program” about the lead in your homes. Use the following roles to “plant” different interests in the audience (cut them into role cards). Make enough copies so everyone has a role card (even though some will have the same role). This will make the discussion lively and give students an idea of the different interests people in the same situation might have.

<table>
<thead>
<tr>
<th>I want to move. I want a lot for my house to get out of this neighborhood. How big a deal is this REALLY?</th>
<th>I’m confused. I’m afraid to raise my kids in my house now. What should I do? Am I going to die if I don’t move?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to live here the rest of my life. I intend to no matter what. I care more about being healthy than getting a lot for my house. I want my taxes to stay low. What can I do now? Can I fix it?</td>
<td>A lot of people need to know about this and need help. We are a poor neighborhood. We need information and help fixing the problem. Who can help us get more money and information?</td>
</tr>
<tr>
<td>I think this is some kind of plot to take our houses again, just like they did for the highway. How do you know that this is bad for us? Can you prove it?</td>
<td>This is just one more problem that will be fine if we just don’t let our kids play in the dirt. Do we have to have lead testing? What will happen if we don’t?</td>
</tr>
<tr>
<td>I want to learn all that I can. I can help others to learn about this. Where can I find out more?</td>
<td>A lot of my family has lived here a long time. Who does this affect? How can we protect ourselves?</td>
</tr>
<tr>
<td>This isn’t fair. We didn’t cause this problem and we shouldn’t have to fix it. Who caused this? Aren’t they responsible?</td>
<td>We need to all work together on this. We can help each other. Could we all get our houses checked at the same time?</td>
</tr>
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**Homework:** Ask students to list the top 5 issues in the situation for their stakeholder.

**Period 2: What are some possible solutions?**
With the whole class, have them share their top 5 issues in stakeholder groups. Then create a web – grouping issues by role as you record them on the board (or a transparency).

Divide students into groups of five. Since there are 10 perspectives, this means each group will come up with different solutions. Give them the task of coming up with a long list of possible solutions from their different perspectives. It is important at this point to
emphasize a LONG LIST of solutions without judging the quality or efficacy of them. Teach them the rules of brainstorming if you haven’t already:
• The more ideas the better
• Every idea is accepted without criticism or analysis
• Building on each other’s ideas (piggybacking) is a good way to get more ideas

Ask each group to appoint a facilitator (to make sure everyone contributes ideas from his or her perspective) and a recorder to get all the ideas down. If you can provide chart paper and markers, this is helpful to the group since they can review the list and add more. Some solutions they might come up with include:
• Don’t check for lead any more.
• Check for lead but keep it a secret.
• Try to arrange to check entire neighborhoods for lead to reduce the effects of discrimination and stigma.
• Seek the support of social service and government entities, which can participate in ways ranging from providing educational programs to offering home sale price support.

As you walk around to listen in on the groups you may need encourage them to think without constraints - money, current policy, prejudice – to come up with a long list of ideas. Remind them they are in an “anything is possible space.”

After no more than 6-8 minutes, or when the groups seem to wind down, ask them to vote on each idea from the different perspectives in their group. A stakeholder can vote for any solution that meets his or her needs. The solutions with the most votes are the ones they will continue to consider (usually 4-5 get the most votes).

Homework: Ask each student to write down what they think the problem is, and choose the two solutions from the list they like the best. For each solution, ask them to how it meets the needs of their stakeholder.

If time, continue to develop students’ ethical decision-making by considering environmental justice issues. You may skip this “Period 3” activity and go to “Period 4 activity on making the policy recommendation.

**Period 3: Is your solution fair?**
Ask students to share their homework in their groups. Have the group choose the top two solutions that best solved the problem and list the needs it meets for each stakeholder. The emphasis here is on understanding the limitations of any solution for meeting all the needs of each stakeholder.

Give students the definition of environmental justice to test their solutions further: 
_The U.S. Environmental Protection Agency defines “environmental justice’ as the “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”_ (http://www.epa.gov/compliance/environmentaljustice/index.html).
How well do their solutions provide for fair treatment and meaningful involvement? Ask them to add to their list – how does each solution meet the requirements of environmental justice?

Homework: Ask each student to choose one of the two final solutions and write about what they think the effect of that solution will be in the near future, in 1 year, in 5 years and in 10 years.

Period 4: What needs to be done – the policy recommendation
The key in this lesson is to get the group to really help each other understand the reasons that their solution should become policy. This is a pre-writing activity, scaffolding the thinking of the individual students. Although students are often reluctant to write individually, assure them that they will have a chance to revise and improve before submitting it for a grade.

Ask each individual student to write a letter to the policy board outlining what they think should be in a policy and why. Tell them you will be grading them on how convincing their information is that their policy recommendations will be fair, long lasting and meet at least some of the needs of all the stakeholders. Give them time to write in class, share with each other and revise their letters for homework.

Student Assessment
Since groups will have a daily product, grade them on a scale of 1-4 points, with 1 being “turned in” and 4 being “well done.” Each person in the group gets the points.

If you ask students to write up their ideas as homework, you will be able to check their participation, and more importantly, know they are prepared with information and thoughtful reasoning to make a policy recommendation. Again, you can grade the homework on a 1-4 scale so students know it is important to complete. Weight these twice the group score to get a better indication of individual achievement.

The individually written final policy recommendation letters provide a substantial portion of the grade as a good indicator of knowledge of the issues and the ability to present an argument for a position. If you are using rubrics with the students, ask them to identify what will make a good letter and use those criteria for grading.
The Case: With Truth and Justice for All

Your family has lived in this neighborhood for a long time. Your mother grew up two blocks over and your dad came from right over by the highway. Your dad's folks remember when the highway cut through and your great uncle Jim's house actually got torn down because it was in the way of the highway. They gave him some money but it wasn't very much, so he just rented mostly after that.

Now they are telling you that there is lead in the soil around here because of all the cars using leaded gasoline for so long. This is a problem because lead gets in the soil, and then children play in it. They put toys in their mouths or get their hands dirty and then rub their eyes. There are kits you can buy to tell if your soil is contaminated. The problem with lead is that it gets in your bones and makes you sick for a long time, because you have to get your body to replace it with things like calcium, and that takes time.

They've started an education program at the community center to let everyone know about how this affects them.

It just doesn't seem fair that this is happening in the neighborhood. First they put the highway through, and then the lead from the gas cars contaminates the soil. Nobody wants to live with that, so people are wondering if they should move, and if they could even sell their houses. Others want to stay so they are asking what can be done and who will pay for it.

You and your neighbors are being asked to advise policy makers on what would be fair. A policy says how people will be treated, and/or how they should act in situations like this. When your great uncle Jim got bought out so the highway could go through, there was a policy that said he had to sell, but that the state would buy him out at a fair price for his property. Policies say what duties institutions like the government and individuals have to each other in different situations. In your great uncle Jim's case, the state has a duty to pay him a fair price.

In the situation you are in, you have to decide what is needed (education, testing, money, buy outs, relocation help, counseling, clean up, a say in the decision, open meetings) and who has a duty to provide it. Your policy has to have lasting effects, not just fix things in the short run.
Currently, CDC funds are awarded to 40 state and 16 local health departments to develop and implement comprehensive lead poisoning prevention efforts. See Key Contacts (PDF, 416 KB) for whom to contact regarding lead poisoning prevention in your state.
Health Effects of Lead from [http://epa.gov/lead/leadinfo.htm#health](http://epa.gov/lead/leadinfo.htm#health) (May 2003)

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- Children's brains and nervous systems are more sensitive to the damaging effects of lead.

If not detected early, children with high levels of lead in their bodies can suffer from:
- Damage to the brain and nervous system
- Behavior and learning problems (such as hyperactivity)
- Slowed growth
- Hearing problems
- Headaches

Lead is also harmful to adults. Adults can suffer from:
- Difficulties during pregnancy
- Other reproductive problems (in both men and women)
- High blood pressure
- Digestive problems
- Nerve disorders
- Memory and concentration problems
- Muscle and joint pain
Period 1: What’s your perspective? What do you want to know?

What is your stakeholder’s position?

What do you need and want to know? (list your questions here)

What are your main issues about the lead in the soil in the neighborhood? (list at least 5 here to share with your neighborhood team)

1.
2.
3.
4.
5.
Period 2: What are some possible solutions?

Group work

Group members  Role card

________________  ________________
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________________  ________________
________________  ________________
________________  ________________

Create a long list of possible solutions from your different perspectives. Use brainstorming to get a really long list. Give your best, favorite, ideal solutions, and your off-the-wall crazy ideas. There is no evaluation and all ideas go on the list.

How to brainstorm:
- The more ideas the better
- Every idea is accepted without criticism or analysis
- Building on each other’s ideas (piggybacking) is a good way to get more ideas

Appoint a facilitator who will make sure everyone gets to say their ideas, and a recorder to write everything down.

Write the group’s ideas here. Use the back if you need more space.

When your teacher calls time, hold a vote to get the top four or five for your group. A stakeholder can vote for any solution that meets his or her needs (so everyone can vote as many times as they want). The solutions with the most votes are the ones that are your top choices. Circle them!
Period 2: What are some possible solutions?

Individual Homework

When time is up for brainstorming, write your two favorite solutions here:

#1 idea:

#2 idea:

What do you think the real problem is? Say it in one or two sentences.

How does each of your solutions meet the needs of your stakeholder?

<table>
<thead>
<tr>
<th>Idea #1 – how it helps me</th>
<th>Idea #2 - how it helps me</th>
</tr>
</thead>
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**Period 3: Is your solution fair?**

**Group work**
Take time to hear the reasons the different stakeholders in your group chose particular solutions. List them all, then vote again. What are your top two solutions? How do they meet the needs of each stakeholder?

Write them here:

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>How it meets the needs of this stakeholder</th>
<th>How it meets the needs of this stakeholder</th>
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Are they fair?

*The U.S. Environmental Protection Agency defines “environmental justice’ as the “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (http://www.epa.gov/compliance/environmentaljustice/index.html).*

How well do your group’s top two solutions provide for fair treatment and meaningful involvement? Ask them to add to their list – how does each solution meet the requirements of environmental justice?

<table>
<thead>
<tr>
<th>Idea #1 – how it is fair</th>
<th>Idea #2 - how it is fair</th>
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</table>
Period 3: Is your solution fair?

Individual homework

Now you choose one of the two final solutions and write about what you think the effect of that solution will be in the near future, in 1 year, in 5 years and in 10 years.

My first choice for a solution is:

Here’s how I think it will make a difference now and in the future

<table>
<thead>
<tr>
<th>In the near future</th>
<th>What I think will happen</th>
</tr>
</thead>
<tbody>
<tr>
<td>In one year</td>
<td>What I think will happen</td>
</tr>
<tr>
<td>In 5 years</td>
<td>What I think will happen</td>
</tr>
<tr>
<td>In 10 years</td>
<td>What I think will happen</td>
</tr>
</tbody>
</table>
Period 4: What needs to be done – the policy recommendation

From your group’s discussion, what are the key points you want included in the policy and why. It is important that you are clear about:

1. What you think should be done – the needs and duties of different groups

2. How the policy will meet the needs of the different stakeholders

3. Why it is fair from an environmental justice perspective

4. What the effects of the policy will be in the future