How to Use This Module

This module is designed to extend and enhance the other four content modules in the AMBIENT curriculum. The activities can also be used alone in Science, Social Studies, Law, or English classes to develop critical thinking, discourse, and presentation skills and strategies.

Activities are provided in three areas:

1. Basic background in ethics
2. Key concept development
3. Case studies in ethical decision-making on the four key areas of AMBIENT: soil, air, water, and food.

1. The **background activities** can be used to introduce your students to ethical decision-making:

- Issues, Players and their Positions
- Issue Analysis

2. The **Key Concept** activities may be used at any point to develop student understanding of the thinking tools used in ethical decision-making. We suggest these key concepts be developed inductively.

- Acceptable compromise
- Sustainable development
- Environmental justice
- Risk communication
- Cost/benefit analysis

3. We recommend you use the content modules to develop students' background knowledge and then use the **case studies** to extend and deepen their understanding of the importance of these environmental health issues. The case studies are:

- *Lead in Soil: With truth and justice for all*
- *Water: Well, well, well*
- *Air: Dirty air and bright lights*
- *Farm to Fork: How is your food grown?*

Developing Background

Two activities are provided to develop an understanding of the fundamental ideas of how reasonable people can reasonably disagree about important issues, and make decisions about them.

In **Issues, Players and Their Positions**, students learn to identify Environmental Health Problems caused by both living and nonliving things. Students will also learn to summarize Issue Components (event, problem, issue, players, and positions) involving Environmental Health Issues.

Students will be introduced to environmental health problems and issues. They will learn the importance of human values in these issues. Examples of environmental contamination (in air, soil, water, and food) will be used to help students understand the

various players involved and their positions as they relate to environmental health issues.

In the activity, **Issue Analysis**, students develop issue analysis skills and apply them to issues associated with environmental health.

In the previous activity, students were introduced to the concepts of events, problems, and issues. With this knowledge, students are now able to begin analyzing environmental health issues with respect to the players, their positions, and associated values. Students will apply the skills of issue analysis to environmental health issues using a number of secondary source articles.

Developing Key Concepts

To develop key concepts in environmental health ethics, multiple cases are provided to use with your students. We suggest an inductive approach to developing them in which students study the different examples to develop an understanding of the key concept. You may wish to have students keep a journal specifically for developing their understanding of these key concepts over time.

The inductive concept development process begins with students studying examples of the concept, then identifying commonalities and developing a definition. Students then reflect on the concept and how they see it in their lives.

A basic concept development process to use with students is:

1. Provide students with scenarios and the key issues and questions to consider.
2. Ask them to read through the scenarios, underlining important points, and then listing what they have in common.
3. In pairs, have them discuss what they think the concept means.
4. Have pairs meet together and compare definitions, developing one that incorporates all their ideas.
5. Each group of four posts their definition, walk around to review each other's, then meet again to refine their definition.
6. Finally, each group posts a final definition for the whole group, and you lead a discussion about any key differences you note, and come up with a definition that incorporates the best thinking from each group.
7. Ask students to reflect on their own lives and when they have, or could, use the concept of acceptable compromise.
8. Ask students to write down a definition with their application of it to their own lives.

Acceptable compromise

The situations that give rise to environmental health issues are often complex and involve competing interests. An acceptable solution for one group of stakeholders does not meet the needs of another group or the best solution is not scientifically, economically, or physically viable. Between these "endpoints" is a compromise that meets some of the needs of some of the groups. It is almost an oxymoron to talk about a compromise as acceptable since in backs off from what has been determined to be ethically acceptable in the situation.

Sustainable development
Sustainable development is a compromise between the demands of economic development for the present and near future and the demands of sustaining the resources necessary to ensure future viability.

Environmental justice
EPA defines Environmental Justice (EJ) as the "fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies."

Risk communication
Environmental health concerns must be communicated to the public. Health risk communications reach the public through the mass media in advertisements, news programs, newspapers, and magazines. The medical community, the CDC, and the EPA are also responsible for communicating health risks as they become known. The ethical concerns of risk communication involve the complexity of severity assessments, public response, balancing informing the public and public panic.

Cost/benefit analysis
Cost/benefit analysis is a decision making tool for evaluating the effects of a decision over time. The value in the present is weighed against the environmental health cost to the future.

Developing Skills and Strategies for Ethical Decision-Making
Four scenarios are presented in the areas of Soil, Air, Water, and Food with 2-5 day lesson plans. Students work collaboratively to use the tools of ethical decision-making around environmental health issues. A connection to the content modules is provided for each case since teachers may choose to do the ethics case after students have developed some background knowledge. Teachers may also use the ethics case to build interest in the topic and create the need to know more before doing the related content module.

A basic ethical reasoning and discourse process is presented in the background for the teacher. Then for each case, individual and group activities are provided to scaffold student thinking through these steps.

1. Present students a case with a role for them to play in a specific context with a task to complete.
2. Ask them to read the scenario, identify what they know, need to know and think about the context.
3. Ask them to develop a problem definition
4. 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?
5. 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 options.
6. Actions/Follow-up – policy, personal, advocacy, environmental justice. Who is responsible going forward? For what? Why? To what end?

Air: Dirty Air and Bright Lights

Purpose

Students are asked to think about their use of electricity, particularly around the holidays, and how it affects their quality of life and the lives of all of us. Students explore the issue by tracing the connections and discussing how and why we consider the consequences (near and far in time or space) in the decisions we make in our daily lives.

Overview

Students are presented with the relationship of bright lights, holiday lights and other intense uses of electricity in terms of the effects on air quality, and the subsequent effect on human health. If dirty air makes people sick, what can be done to reduce air pollution from electricity production? Students are asked to consider this question and develop recommendations for personal, policy, and advocacy actions.

Lead: 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 with lead contamination through no fault of their own. 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 “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 these lessons, students are confronted with the complexity 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 play the roles 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.

Water: Well, Well, Well

Purpose

Students will consider a case of potential water contamination by using a process of reasoned discourse about the definition of the problem, the relevant information, and the values behind different solutions.

Overview

Students are presented with a case of an individual who is faced with making a decision about repairing a broken well pipe that is too close to a septic tank drain field to meet current restrictions under the law. The case is less than obvious because the well driller offers to fix it anyway for a bribe. Students are challenged to consider the role of

regulations in preventing harm, the ethics of sidestepping the law, and the potential health issue.

Farm to Fork: Food, Health and Social Responsibility

Purpose

Students are asked to consider the impact of the use of chemicals in agriculture on the workers, the residents of agricultural areas, and consumers in terms of what morality requires of them and society.

Overview

Students are presented with data about farm workers who are exposed to chemicals that make them sick in the normal course of their work. They are asked to consider their individual and our collective responsibility to reduce or eliminate exposure, identify alternatives to the dangerous chemicals or even change our diets to eliminate foods that can only be grown with harmful chemicals.