Environmental Decision Making

Subject Areas: Science, Language Arts, Social Studies
Setting: Classroom.
Duration: One to three class periods
Skills: research, critical thinking, decision-making, writing, public speaking, cooperating, listening
Vocabulary: bias, framing, stakeholder, value, want, need, perception, feelings, perspective, negotiation, bias, collaboration, compromise, conflict, competition, public policy

Correlation to Core Curriculum Standards:
Science: 5.1 (A,B), 5.10 (A,B);
Language Arts: 3.1(A,B,E,G,H), 3.2 (A,B,C,D), 3.3 (A,B,C,D), 3.4 (A,B), 3.5 (A,B,C);
Social Studies: 6.1 (A), 6.2 (A,C,D), 6.4(L), 6.5 (B), 6.6 (E);
Life Skills: 9.2 (A,B,C,D)

Objectives:
1. Students will develop critical thinking skills
2. Students will understand biases that affect decision making
3. Students will learn the steps involved in solving an environmental problem
4. Students will understand multiple viewpoints while advocating a certain position.

Materials: Case study information, access to media sources

Background:
Both the New Jersey Environmental Education Commission and the National Association of Environmental Educators have put forth guidance suggesting that the
complex, multidisciplinary nature of environmental issues should be stressed. In addition, students should be developing critical thinking skills and learning about inherent biases and decision-making. Our water resources are under great stress from multiple uses, as well as the effects of land-based activities. Understanding and solving these issues requires the ability to see diverse perspectives, and bring many different stakeholders together to make a decision. This activity seeks to combine a current local watershed issue with an exercise to understand the complexity of environmental problems, and provide students with an opportunity to attempt to solve a problem using multiple perspectives and decision-making skills. It also serves as a reinforcement of civic responsibility and the applicability of government process to our daily lives.

**Procedure: Understanding an Issue**

Select a current water quality/watershed issue, particularly one related to the bay. Have students summarize the issue from provided information (media/ teacher presentation) Discuss understand inherent biases and framing. Assign students to issue “stakeholder” groups. Have students think about/research the issue from new perspective. See the supplemental material at the end of this lesson for suggested water quality/watershed issues and common “stakeholder” groups.

**Procedure: Activity - Short Term/Younger Grades**

Have each student “stakeholder groups” prepare a report on the issue, including the following:

- A brief factual statement of the issue
- Identification of biases present in the material
- A position paper summarizing their group’s perspective
- Acknowledge whether researching changed their opinion
- Have each group read their papers to the class

Discuss different alternatives that might satisfy different perspectives
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**Procedure: Activity - In-Depth/Older Grades**

Have each stakeholder group prepare a factual summary of the issue and an “official” position. Hold a class debate, having all stakeholder groups participate, and the media “cover” it. You may want to involve language arts instructors in the debate preparation. Have the class try to decide what should be done about the issue as a result of the debate. Include drawing out the objectives they are trying to meet, and what actions would satisfy them – generate a list of steps that can be taken to meet everyone’s needs. Have students individually summarize their experiences about the debate and how it affected their opinion on the issue.

**Extension: Taking it Further**

Have students present a summary of the issue and stakeholder perspectives to a “Town Council” student group or group of instructors for consideration. Have the “Town Council” call a public meeting, where each stakeholder group presents their position, then have the Council decide on an appropriate action. Have the ‘general public’ at the meeting make comments on the action. Have the Council vote on the issue after public comment. Have the all students participate as appropriate (i.e. Vote if it’s a ballot issue, etc.). Have students summarize their experiences, what most shaped their viewpoint, what was most frustrating, did the outcome meet their expectations?

**Assessment:**

Comparison of initial and post discussion issue summaries
Stakeholder group reports
Debate performance and participation
Vocabulary/understanding of concepts

**Also see:**

Bringing Values to the Surface, Options, Growing Together as a Group from Beneath the Shell, NJDEP.
Supplementary Information

Possible Water Quality/Watershed Issues

Specific Recent New Jersey Issues
- Ciba-Geigy Superfund Cleanup
- Pinelands Protection Act
- No Discharge Designation (Category 1 Waters)
- Proposed Livestock Manure Management Rules for Small Farms
- Phase II Stormwater Rule Implementation
- Depuration of seafood harvested from less than approved waters

General Issues
- Coastal zoning and development
- Stream buffer development restrictions
- Open Space Preservation
- Who should pay for water management?
- Native/invasive species management
- Endangered species/development cases

Common Stakeholder Groups
- Local Government
- Environmental Agency staff
- General Public
- Research Scientists
- Non-Profit Environmental Groups
- Industry Advocates
- The most affected population
- The media
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What’s the Issue? Worksheet
Read the article you were given, and answer the following questions.

What person or group is this article about?

What larger group do they represent?

What are their interests in this issue? Identify which are needs and which are wants.

What values do their concerns show?

What do they want to happen?

Who benefits if their alternative happens?
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Discussion worksheet

Answer these questions to discuss with the group.

Who is your stakeholder?

Which perspectives conflict with those of your stakeholder?

Can you think of alternatives that meet everyone’s needs?

Who would be responsible for implementing these ideas?
Rank the alternatives by how well they meet all stakeholder needs.

Discuss your “best” specific alternative from your stakeholder perspective & everyone’s overall interests.

Extra: With your group/class, draw out the problem you are trying to solve. In the center list the key objectives you are trying to reach to meet stakeholder needs. Then draw in the actions that can be taken to reach each of those objectives.