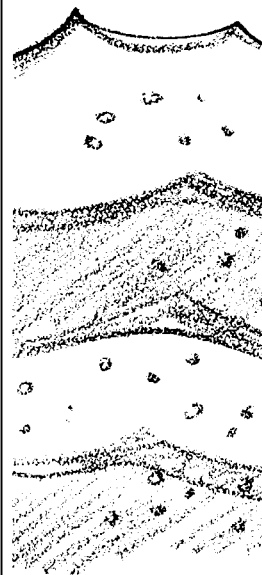


People and the Sea: Actions

Lesson by Susan Wertz, North Thurston School District, Lacey, Washington.
Based on work by John M. Ramsey (University of Houston) and Harold
Hungerford and Trudi Volk (Southern Illinois University at Carbondale) in the
publication: *A Science-Technology-Society Case Study: Municipal Solid Waste*.

Key Concepts

1. Issues affecting marine waters usually involve a variety of groups of people with varying beliefs and values and needs.
2. It is important together critical information about an issue before choosing a particular solution to the problem.
3. There are a variety of citizenship actions that may be effective in solving a problem. These actions include increasing awareness through education and choosing what products to buy and from whom to buy them from. The actions also may include gathering data to inform and persuade decision makers. Action may mean physical intervention in a problem such as revegetating a stream.



Background

From whaling to marine pollution, we face many complex challenges in maintaining the health of the oceans. Sometimes the problems seem so large that we might think we cannot have any personal role in solving them. In truth, each individual does have some power. “People and the Sea: Actions” provides students with the opportunity to explore and become involved in real world decisions.

Many ocean environmental issues are controversial and difficult to resolve because of the cloud of emotions, misconceptions, and prejudices that often surround and influence scientific facts and judgments. As a step toward helping students deal with controversial environmental issues more effectively, these activities provide a structured format so that students can work through difficult issues and attempt to understand different perspectives on the issues and the values that underlie those differences. This process should help students understand the choices and consequences of their actions.

In order for students to internalize citizenship action skills, they must practice these action skills. Students will need encouragement and support. The teacher will need to help find opportunities in the community and use

discretion in guiding students. Action does not have to be controversial to be beneficial. Mapping a wetland, for example, may provide valuable data for a proposed mitigation project.

Teaching Hints

“People and the Sea: Actions” provides students with a formalized approach to investigating an environmental issue leading to an action plan and the option of citizen involvement.

Reflecting this structure, the following student pages can be used to guide the students’ work. Choose the hand-outs you want to use and modify them as you see fit. The student pages are arranged in the following progression:

Setting expectations

Hand-out A: Issue Investigation Contract

Hand-out B: Requirements for Issue Investigation Assignment

Identifying an issue

Hand-out C: Brainstorm Worksheet- List of Problems

Hand-out D: Problems and Issues

In the preceding activity, “People and the Sea: Issues”, students identify a variety of marine related issues. Hand-outs A and B help them narrow the field to one they want to investigate. Another way to help students choose issues to investigate is to involve them in some field study, monitoring project, aquaculture project or laboratory research. The water quality monitoring work in the previous section may suggest local issues the students might want to pursue. There are two definite schools of thought on when laboratory or field research should or could be done. William Stapp’s model of community action research begins with a monitoring project or field research from which students identify a problem and solutions as a result of their research. Hungerford, on the other hand, has the students identify an issue, then collect the data and formulate solutions.

Identifying players and their beliefs, values and needs

Hand-out E: Issue Players and Their Positions

Hand-out F: Practice Identifying Players and Their Positions

Hand-out G: Beliefs and Values

Hand-out H: Analyzing Issues, Players and Values

Compiling information

Hand-out I: Gathering Information

Hand-out J: Making a Survey, Questionnaire or Opinionnaire

Brainstorming and analyzing potential solutions

Hand-out K: Solution Analysis Worksheet

Planning and taking action

Hand-out L: Planning for Action

Hand-out M: Guidelines for Analyzing the Proposed Action

Evaluation of the project

Hand-out N: Student Project Evaluation

Hand-out O: Self Evaluation

Hand-out P: Group Evaluation

There is no simple recipe for these kinds of projects. They tend to cross the boundaries of several academic disciplines and, therefore, are perfect for team teaching or interdisciplinary studies.

It is a good idea to carefully document your procedures and make sure that you are operating under your organization or school goals and procedures. There is a nationwide trend toward student community involvement, community service and field research, so you are not alone in involving students in their local community. *The Kid's Guide to Social Action* by Barbara A. Lewis is an excellent resource and can be modified for high school use. This book has specific directions and suggestions for implementing a wide variety of actions.

Choose issues and actions you feel comfortable tackling with your students. It is possible that you will encounter frustration, dead-ends, and blockades. You may feel overwhelmed. Even so, the students will benefit from exposure to issues, to time spent with community members outside their school and to participation in action that can make a difference. Build on the success of these activities in future classes. As you become more comfortable with this approach, you might consider trying some of the extension activities listed below.

Key Words

belief - in this case, an idea which a person holds to be true. The idea may or may not be true, but the person believes it is. In many cases, a person's beliefs are strongly tied to his or her values.

brainstorming - a conference technique for solving problems, amassing information, stimulating creative ideas, etc. by unrestrained and spontaneous participation in discussion

issue - in this case, when two or more people (or groups of people) disagree about an environmental problem and /or its solution

players - in this case, the individuals, groups, or organizations involved in an issue

position - in this case, a player's idea about what should be done in regard to an issue

problem - in this case, ocean environmental problems related to humans, the environment and the interactions between the two

value - in this case, the worth a person (or a group) places on something. Values guide people in the environmental choices they make and help them determine their position on an issue.

Extensions

Media Watch

Students read the newspaper for stories on marine conservation issues. They follow-up by collecting as much information on a topic as they can find, using the library and local resources such as subject matter experts. They follow the story in the paper for up to several weeks and watch TV news for further mention of it. Each student then reports orally to the class on their issue. The group discusses how the media responded to each issue. Possible topics might include inadequate evidence, biases, confusion of facts, opinions, or errors in logic.

Marine Environment Advertising

Students create posters to increase public awareness of environmental issues. Begin this art/writing project by discussing marine conservation issues. Ask the students to actually advertise a solution to a problem. The goal of effective advertising is to make someone want to do something and then actually do it. Students should:

1. Identify the issue.
2. Find an appropriate action.
3. Identify their audience and what that audience can do.
4. Write headlines and copy and do design work. (Encourage the students to be creative to get public attention. Also stress appropriateness.)
5. Obtain permission and display the posters in a public place which the intended audience frequents.

60 Seconds to Save the SEA

Many communities have educational TV stations and satellite distance learning channels that would welcome student produced public service announcements. Have your students create public service radio or TV spots to encourage public awareness and action on marine conservation issues. Public service announcements are usually 15, 30, 60, 90 or 120 seconds long. Students write scripts for their media spots (prewriting, writing, revising, and editing). Have the students vote on which scripts the class should record. Divide the duties: voices, music, equipment, lighting, costumes, props, etc.

Ocean Futures

Get students to begin imagining future scenarios by having them identify local and global ocean problems and issues. Have them label a problem which they think will be effectively solved, a problem which will NOT be effectively solved, a problem which will worsen, and a problem which may arise.

Then have student teams develop scenarios of what a better future for the world's oceans might look like. A "scenario" presents a specific possible future. The group's scenario should capture vividly what the ocean environment and situation would be like in 2000 if the present positive trends continue. The scenario should describe what it would take to bring about this better future. It might give a chronology of several imagined future events which could have happened to lead up to this future. Scenarios could be presented orally, through collage or video, or in a short play.

People and the Sea: Actions - Handout A

Issue Investigation Contract

Student _____ Teacher _____

Title of Issue Investigation _____

I hereby contract with my instructor that I shall use all my mental ability and skills to successfully investigate the issue chosen. Further, I guarantee that my investigation be conducted in a manner that I can be proud of while respecting the rights of other human beings.

I understand that my research will be evaluated on a point system and that my final grade will be based on the total number of points. I have read the following breakdown of criteria and understand how I will be evaluated.

	<u>Points possible</u>	<u>Earned Points</u>
Quality of research question(s)		
Seriousness of approach to research (time on task-work ethic)		
Techniques used in the investigation		
Quality of data collected		
Quality of inferences		
Accuracy and organization of final report		
Class presentation		
Action plan		
Action		
Total	_____	_____

Signature of Student _____ Signature of Teacher _____

Signature of Parent _____

People and the Sea: Actions - Handout B
Requirements for Issue Investigation Assignment

Your teacher will give you the exact details regarding the following parameters.

1. Group size.

2. What kind of data should be collected?

3. What are the parts of the final product?

4. In what format is the report to be written? (title page?, bibliography form?...)

Due Dates:

- _____ 1. Selection of issue topic

- _____ 2. Completion of secondary source search (magazines, books, newspapers etc.)

- _____ 3. Approval of research question

- _____ 4. Approval of letters for information

- _____ 5. Approval of interview questions/format or field study

- _____ 6. Approval of data collection plan

- _____ 7. Approval of instrument or experimental design

- _____ 8. Approval of data collection techniques

- _____ 9. Approval of charts, tables, graphs

- _____ 10. Approval of conclusions, inferences and recommendations

- _____ 11. Action plan

People and the Sea: Actions - Handout C

Brainstorm Worksheet-----List of Problems

Maybe you already know a problem you want to solve. Or maybe you're unsure. Here are four rules for brainstorming:

1. Brainstorming is most fertile if you do it with someone else: a friend, your family, a group, or a class.
2. Everyone tries to come up with as many ideas as possible, from silly to serious, and everything in between.
3. All ideas are acceptable during brainstorming. Analyze later. No one criticizes anyone else's ideas. Period. No exceptions.
4. You may choose to use the categories below or, if that is too structured, you may want to just free-flow write.
 - a. Marine problems associated with organisms.

 - b. Marine problems associated with non-living things.

 - c. Local marine problems

 - d. Global marine problems

Questions:

Which idea do I like the best?

Which idea might be the most possible to do?

Which idea might help the most people?

Which idea might cost the least for the team?

Which idea might help us learn the most?

People and the Sea: Actions - Handout D

Problems and Issues

Ocean environmental problems are related to humans, the environment and the interactions between the two. Earthquakes, floods, and hurricanes are all natural events, but they become problems when they threaten some part of human physical or economic well-being.

A problem becomes an issue if two or more people (or groups of people) disagree about the problem and /or its solution. In the summer of 1993, there was tremendous flooding along the Missouri, Des Moines and Mississippi Rivers. Everyone agreed that flooding is a problem since it affects crops, water supplies, homes and whole towns. Flooding is also an issue, however, because different groups propose conflicting solutions. Some people maintain that the rivers should be subdued by extensive channelization and an expanded system of dikes and levees. Others believe that flooding is a natural process that richens the soil and humans should not build on flood plains.

List a problem within your school.

Is this also an issue? Why or why not?

Global warming: is this an issue as well as a problem? Explain.

List three of the ocean resources problems that are issues and tell why they are an issue.

Issue

Disagreement

People and the Sea: Actions - Handout E

Issue Players and Their Positions

Players are the individuals, groups, or organizations involved in an issue. Environmentalists, farmers, climatologists, insurance companies and engineers are some of the players in the Mississippi watershed flooding issue. Each of the players has a specific idea about what should be done about the issue. A player's idea about what should be done is called the player's position.

Take your environmental issue and fill out the chart below.

The Event (what's happening?)

The Environmental Problem (Why is that a problem?)

The Environmental Issue

The Players

People and the Sea: Actions - Handout F

Issue Analysis Worksheet- Practice

Issues involve differing beliefs and values which, in turn, lead to differing positions regarding the solution to the issue.

Choose an article about an environmental issue far removed from your locale.

Complete the following worksheet:

1. What is the environmental problem(s) stated in the article?

2. What is the environmental issue in the article?

Identify three players in the article and summarize their positions and solutions regarding the issue.

Issue Player

The player's position and solution

A.

B.

C.

People and the Sea: Actions - Handout G

Beliefs and Values

A belief is an idea which a person holds to be true. The idea may or may not be true, but the person believes it is. In many cases, a person's beliefs are strongly tied to his or her values. A value is the worth a person (or a group) places on something. People's values guide them in the choices they make.

Values provide the guides for individuals to determine what is important to them. They help determine that individual's position on that issue. For instance, drift-netters value the money they receive more than they value the seabirds, whales, sharks, and sea mammals that are accidentally caught in the net. That is, an economic value is more important than an ecological value for the drift-netters. On the other hand, many wildlife and fisheries experts make different value judgments. They believe that the preservation of the seabirds, whales, sharks and sea mammals is more important than the monetary gain of the fishery.

List the players involved in an environmental issue you have read about. List what each believes to be true about the issue. List what each most values in this issue.

Player

Beliefs

Values

People and the Sea: Actions - Handout H

Analyzing Issues, Players, and Values

My issue is: _____

Complete the chart below. Include information on all possible players associated with your oceans issue.

Player

Beliefs

Values

People and the Sea: Actions - Handout J

Making a Survey, Questionnaire, or Opinionnaire

Variables are factors or conditions associated with issues for which data are to be collected. The information below summarizes some of the types of variables that you should consider during the planning of an issue investigation in which you are going to collect information through surveys, questionnaires or opinionnaires.

Factual Information

Respondents' knowledge

Respondents' perceived knowledge

Respondents' opinions

Respondents' behavior

1. What environmental issue has your group or class chosen to investigate?
2. What are the research questions related to this issue which you want to have answered?
3. Exactly what information (data) will be collected by this instrument (survey, questionnaire, opinions)?
4. Is this to be a ____survey ____questionnaire ____opinionnaire?
5. If this is to be an opinionnaire, what are the exact beliefs and/ or opinions being investigated?
6. In what geographic area will the data collection take place?
- 7 a. What is the exact population from which the data are to be collected?
 b. How large do you think the sample will need to be to represent the entire population?_____ Explain:
 c. How will you go about selecting your sample?
8. Which data collection technique will you use (e.g., telephone survey, mail survey, etc.)?
9. What are the exact procedures necessary to collect data with this survey?
 a. Who will collect the data?
 b. How will it be recorded?
 c. During what time periods will it be collected?
10. How can all the collected data be recorded and organized in a Data Summary Sheet? You need to design one for your survey. Show the rough draft on the back of this paper.

People and the Sea: Actions - Handout K

Solution Analysis Worksheet

One should not approach taking action on an issue without carefully thinking through the action. The activity below is designed to identify the possible positive and negative consequences of a proposed solution.

What is the issue?

What is the proposed solution?

Identify the consequences of the solution in each of the following categories. Try to think of all the consequences, both positive and negative.

Ecological Consequences

+

-

Political/legal consequences

+

-

Social/cultural consequences

+

-

Economic consequences

+

-

Others: educational, recreational, technological, etc.

Summarize

Significant Benefits

Significant Losses

People and the Sea: Actions - Handout L

Planning for Action

Name of Issue _____

Your position and beliefs regarding this issue:

Identify the most desirable solution based on your previous solution analysis.

List the possible appropriate actions which might be taken to achieve the solution in each of the following categories:

Persuasion

Consumerism

Political Action

Physical Intervention/Ecomanagement

What action or set of actions have you chosen as the most effective way to help resolve this issue?

People and the Sea: Actions - Handout M

Guidelines for Analyzing the Proposed Action

Many people take environmental action, both negative and positive, without thinking through what the true results of their actions will be. It is common at public hearings about specific topics for people to vent their anger at EVERYTHING. This destroys their credibility and they are not likely to make much impact in later hearings. Do your homework. Know what the procedures/laws/regulations are before you act.

Review and answer this list of questions:

1. Is there sufficient evidence to warrant action on this issue? Explain.
2. Have you reviewed all sides of the issue? What evidence have you collected and reviewed from opposing sides? List.
3. Are your primary and secondary sources reliable? How do you know?
4. Are there alternative actions available for use? List them.
5. Are there legal consequences of this action? If so, what are they?
6. Will there be social consequences of this action? If so, what are they?
7. What are the economic consequences of this action?
8. What are my personal values that support this action?
9. What are the procedures necessary to take this action?
10. What are the skills needed to complete this action?
11. Do you have the courage and time to complete this action?
12. What are the other resources needed to make this action effective?

People and the Sea: Actions - Handout N

Student Project Evaluation

Evaluation code:

- Not at all = 0
- Poorly = 1
- Slightly = 2
- Fairly Well = 3
- Very Well = 4

Student

- _____ 1. Identifies marine-related environmental and economic issues.
- _____ 2. Identifies the people (players) involved in an environmental issue.
- _____ 3. Identifies the beliefs and values that underlie the players' positions in an environmental issue.
- _____ 4. Identifies (clarifies) his/her own attitudes and values toward an issue or the environment.
- _____ 5. Demonstrates knowledge of more than one way to resolve an environmental issue.
- _____ 6. Communicates that difficulties in resolving environmental issues are often due to differing attitudes and values of the people involved.
- _____ 7. Outlines the ecological costs and benefits of solutions/actions to environmental problems and issues.
- _____ 8. Recognizes the ecological costs and benefits of solutions/actions to environmental problems and issues.
- _____ 9. Identifies a variety of potential environmental actions.
- _____ 10. Takes individual and/or group action on an environmental problem he/she has identified and analyzed.

People and the Sea: Actions - Handout O

Self Evaluation

1. What did you learn from this activity? academically?

2. What did you learn from this activity personally?

3. How can you measure the success of your action plan?

4. Was your action plan successful? Why or why not?

5. How would you do things differently next time?

People and the Sea: Actions - Handout P

Group Evaluation

1. What have you learned about the ways in which a group works best together?
2. What have you learned about yourself as a group member?
3. What did you like best about working in a group?
4. What was most frustrating?
5. When you work in groups from now on, how will you behave differently, if at all?