ACTIVITY:
Estuary Issues

Estuaries, like any wetlands, are controversial. The controversy arises when people have divergent viewpoints over the use of these areas. As the population grows toward coastal regions, coastal wetlands and estuaries are changed to provide needed facilities. This may become a problem in areas where wetland use is not agreed upon by the community. Each of us, once recognizing a problem exists, must take a stand!

The following is a scenario which contains several points of controversy. By identifying the problems and working toward mutually beneficial solutions, people on different sides of the issue feel validated and satisfied.

SCENARIO:
FISHING RODEO

A red and blue banner hung across the entrance to the park “Fishing Rodeo Today.” Hannah flipped her baseball cap around to get a better view of the competition. Yes, Jamal and Roberto had shown up, but so had Darryl, Brandon, and Mai Ling. All of the most avid fishers in the sixth grade had plumped down $3.00 each to compete in “The Biggest Fish Caught” event at the park near the shore of Lake Pontchartrain.

The sun was just peaking through the clouds while various bait was being passed around. Hannah brought her special bait: a new shiny hook, shrimp aged just so, and a container of fresh worms, just in case. Hannah loved to fish. She had a trophy from the same rodeo, winning either the biggest or the smallest fish in her age class. Almost everyone got some kind of prize. The local Saltwater Fishing Club sponsored the annual event.

As the morning lengthened, the sixth grade group grew discouraged. Not only Hannah, but Jamal and Roberto and all of the others were unable to catch a fish, any fish! The members of the fishing club murmured, “No good fishing today. Fishing's been poor since the new subdivision was built.” Hannah looked closely at the water. The water which was once moderately clear lake water was now milky with sediment washed from the graded new lots. Algae, green and stringy, was clinging to the rip rap and logs in the water. As she walked she noticed paint cans, rags, bits of insulation, tar and cans of wood preservative dotted the shore. Why was this development so important?

Hannah ran back to join her sixth grade friends. Their discouraged faces greeted her. Roberto called, “Hey, Hannah, where ya been?” Hannah echoed back, “Down to see the edge of the development!” Jamal said, “That's where my Dad works, Hannah!” Hannah exclaimed, “Your Dad works at the new development. You should see the mess there, and I'll bet all of that has something to do with our not being able to catch fish!”
Hannah, Jamal, Roberto, Darryl, Mai Ling and Brandon all started talking at once. They remembered their teacher, Ms. Morrison, telling them about how jobs in the area were important and how wetlands (the lands adjacent to waterbodies, which are wet during certain times of the year) are important to fisheries such as crabs, oysters, juvenile fish and other species. Mr. Martin, president of the Fishing Club, saw the animated group and came over to join them. He explained that the shore of the Lake has changed over the last few years due to the demand for land for development and that local environmentalists in the region suspected it had an impact on fishing in the area. “Yet,” said Mr. Martin, “all communities need businesses and industry because of the jobs they provide.”

After a day in the sun with her friends, Hannah gathered her special fishing gear and walked under the shady oaks toward home. A fancy sign from the development site caught her eye, “A Special Home Can Be Yours”... but not for the fish!, thought Hannah.
ACTIVITY: Creative Problem Solving

Materials:
- Fishing Rodeo scenario, (Pages 72-73)
- Creative Problem Solving Worksheets, (Pages 76-77)

Process:

1. Have students read the “Fishing Rodeo” scenario.

2. In order to fully comprehend the problems involved in the scenario, students will need to investigate the situation further. Gather information about development companies, tourism in coastal areas, and revenues brought in by the purchase of fishing licenses. Guest speakers and field trips should also be valuable. Students might interview residents of communities bordering on lakes or other water bodies and gather information about lifestyles and concerns.

3. Have the class brainstorm problems related to the scenario such as land use and development, fishing rights, recreation, and the estuarine ecosystem. Accept all suggestions without criticism.

4. After the brainstorming session, select one problem. In stating the problem:
   - Use guidelines in writing the problem:
     - How might we...
     - In what ways might we....
   - Use a descriptive main verb in the active voice.
   - Include qualifying statements such as why, who, or under what conditions.
   - Use a positive approach with a minimum of words.
   An example in the scenario above might be: “How might development companies build without harming the estuarine environment?” or “In what ways might Hannah and her friends investigate the effects of development on animals and plants in the Lake?”

5. Brainstorm the possible solutions to the stated problem. Welcome all ideas during this session. Attempt to fill in information by supplying the answer to questions such as who, what, when, where, why and how? Using these questions develop positive proposals for the solution presented.
Once these proposals have been formulated, it is important to reexamine the problems as well as the solutions. This may be done with the use of criteria. Brainstorm criteria for solutions to the problem. Examples of criteria questions include:

- Which solution will impact the environment least?
- Which solution is most cost effective?
- Which solution will be best for the community?
- Which solution will provide jobs?
- Which solution will be easily accepted by the community?
- Which solution will take the longest time to implement?
- Which solution is most equitable?
- Which solution is most ethical?
- Which solution will enhance the environment?
- Which solution will have an impact on the fewest people?
- Which solution might have an impact on the future?
- Which solution will be most visibly successful?
- Which solution will change attitudes in the community?
- Which solution has the potential to do the most harm?

7. Discuss the list of criteria and choose five which will be used to consider the solutions to the problem.

8. Discuss and select five solutions that have the potential to solve the problem. Use the ranking system suggested in the worksheet (Page 77, Section V) to rank each solution. Total up the points given to each solution. The solution with the highest total points appears to be the best solution to the problem based on the criteria developed.