

Going Green

The foundation of national parks in the United States and around the world is based on the desire to preserve natural resources for future generations. Environmental conservation or “going green” has become a pressing need as the world gets more crowded and natural resources are in shorter supply. This lesson plan is designed to help your students understand and work with these concepts in their schools and communities through the creation of an action plan. Completing all of the tasks will probably take three or more class periods; suggested extension activities will require additional class periods.

Level: Intermediate to high intermediate

Focus: Skill-integrated language learning, contextualized practice, developing problem-solving skills, cooperative group work

Materials: large paper and markers for poster session (optional)

Task 1: Building background (approximately 1–2 hours total)

1. Research the topic

- a. Divide the class into teams of three to four students.
- b. Using the Internet or a library, have students research the topic of preserving the natural environment.
- c. Tell each team that they must write their own definition of environmental conservation or “going green” and must produce a list of 10 to 20 new vocabulary items, along with definitions for these items.
- d. Remind students to record the sources of all their information (websites, books, magazines).
- e. Optional: Before students begin their research, you can share with them the glossary that accompanies this lesson. Ask students to sort the words in the glossary into the categories of “problems” and “solutions.” Have teams compare with other teams how they categorized the words. What words and phrases are the same and different?

2. Strategize

- a. Ask the student teams to decide what aspect of environmental conservation they want to focus on (water, air, waste, etc.).
- b. Have the students strategize how they will gather information about environmental issues at their school or in their community. Will they interview people, distribute a questionnaire, gather information through observation, or a combination of all three? Can they think of other ways to gather information?
- c. Tell students that they will have to decide on:
 - the method of information gathering
 - the division of labor
 - the timeframe for the project
 - potential problems

3. Create information gathering tools

- a. After students have outlined their information gathering plan, tell them to write a questionnaire or interview questions based on the topic they chose.
- b. Here are some examples in case they have trouble thinking of questions:
 - Water: How do you use water? How do you contribute to wasting water? How do you contribute to water pollution?
 - Air: What actions do you take that pollute the air? What can you do to lessen your contribution to air pollution? Do you think you have control over solving the air pollution problem?
 - Waste: What do you throw away? How are you being careless with the land? What can people do to help clean up the land?

4. Strategize, again

- a. Finally, have students decide together who will do what tasks. Who will they speak to? Where will they go to do their interviews? How will they capture the information (written notes, recording, video)?
- b. At this point, students should have discussed possible solutions to anticipated problems in information gathering.

Task 2: Getting the information (homework assignment)

1. School: Students can interview and give questionnaires to students in other English classes in the school as a way to practice English. Students can conduct the rest of their information gathering in their native language. Who can they speak to? Other students, teachers, administrators, school staff.
2. Community: Instruct students to conduct as many interviews as possible in English. Of course, this may not be possible. Let them know that it is okay for them to use their native language for this task. Who can they speak to? Family, neighbors, friends, shopkeepers, and local business owners.
3. Note: Remind students to ask the same questions of each interviewee so they can measure their data quantitatively.

Task 3: Creating an action plan (approximately 2–3 hours total)

(Note: An action plan defines a problem or challenge, identifies possible solutions, and outlines the steps to implement those solutions.)

1. Report findings

- a. Put students back into their teams to report their findings to each other.
- b. Have students work in their teams to compile and summarize their information.
- c. Ask students whether they want to summarize their data in numbers (quantitatively) or through a summary of the ideas (qualitatively). They may want to do both.

2. Brainstorm possible actions

- a. Have students brainstorm possible actions to help make their school or community “greener” based on what they learned from the interviews.

- b. Ask each team to make a list of possible actions.
- c. After teams finish their lists, ask them to review their lists and pick the best ideas.

3. Create an action plan

- a. Tell students to take their best ideas and create an action plan that they could implement in the school or their communities.
- b. Example of an action plan:
 - i. Students identify litter as a major problem in their school.
 - ii. They form teams from their class and other classes to clean up the litter.
 - iii. A group of representatives goes to the principal to ask for time in the school day to clean the school environment.
 - iv. A group of representatives goes to the custodial staff to ask for cleaning tools and supplies.
 - v. Students create awards for the team that did the best job of cleaning up.
 - vi. On the appointed day, the students clean the school.
 - vii. The awards are given out at a school assembly.
- c. Give each team a large piece of paper and markers (if you have them) to make posters of their findings and of their ideas for action.

4. Present in a poster session

- a. When the teams have finished their posters with their findings and their action plans, have them take turns giving 5–10 minute presentations to the whole class. Each member of the team must say something.
- b. In order to encourage listening from the other students, have the class take notes and ask questions of the presenters when they are done.

Suggested extension: Deepening the language learning

(for homework or additional lessons)

Writing: Create an environmental magazine

In order to extend the learning from the “Going Green” project, ask students to do some creative writing on the topics that interested them most. They could write essays, narratives from their lives, fictional stories, or poems.

1. Set aside time in class, or give the assignment as homework. Then have students share their writing in groups to get feedback from their peers.
2. Continue this pattern for several sessions until each student has three or four finished pieces.
3. Ask each student to choose his/her two favorite writings for publication.
4. Gather the students’ writing into one file. You may also want to ask the students to find pictures and illustrations for the magazine or to do some drawings of their own.
5. Print up the final product and make enough copies for all.
6. With the students’ permission, you may want to distribute the magazine in the school or post it on a bulletin board.

GLOSSARY OF ENVIRONMENTAL TERMS

acid rain – rain that mixes in the air with industrial pollutants, primarily sulfur dioxide and nitrogen oxides.

air pollution – toxic gases or other materials in the atmosphere, usually as a result of human activity.

alternative energy – energy produced from clean sources such as the sun, water, and wind.

biodiversity – a wide range of different species of animals, plants, and other living beings which contribute to the development of all living things.

carbon dioxide (CO₂) – a naturally occurring gas in the atmosphere resulting from the burning of coal, oil, natural gas, and organic matter.

climate change – change in temperature and weather patterns caused by the burning of fossil fuels.

ecologist – a scientist concerned with the interrelationship of organisms and their environment.

ecology – a branch of science concerned with the interrelationship of organisms and their environment.

ecosystem – an interdependent group of animals, plants, and other living things.

endangered species – species of animals and plants in danger of extinction.

energy conservation – using energy efficiently and wisely; saving energy.

fossil fuel – a fuel, such as coal, oil, or natural gas, produced by the decomposition of ancient (fossilized) plants and animals.

global warming – increase in the average temperature of the earth’s surface.

greenhouse effect – the process that raises the temperature of air in the lower atmosphere due to heat trapped by greenhouse gases.

Lesson Plan

continued

GLOSSARY...*continued*

hydropower – energy or power produced by moving water.

litter – waste such as paper and cigarette butts, which is thrown on the ground thoughtlessly.

managed growth – urban or industrial growth that is controlled so as not to be harmful to the environment.

nuclear energy – energy or power produced by nuclear reactions.

oil spills – the harmful release of oil into the environment, usually in the water, which sometimes kills animals and plants.

over-development – expansion or development of land to the point of damage.

ozone – gases in the upper atmosphere that form a layer which protects the earth and its inhabitants from ultraviolet radiation.

recycling – collecting, sorting, and processing used materials (such as paper, plastic/glass bottles, and aluminum cans) into usable materials.

renewable energy – energy resources such as wind power or solar energy that can keep producing indefinitely without being used up.

smog – a dense, discolored fog containing large quantities of soot, ash, and toxic gases such as sulfur dioxide and carbon dioxide.

solar energy – energy derived from sunlight.

sustainable communities – communities that can maintain their present levels of growth without damaging the environment.

wildlife refuge – land set aside to protect certain species of fish or wildlife.

wind power – power or energy derived from the wind.

Debate: Examine the issues

You may find that the students have come up with some topics that could be debated. Set up a separate lesson to debate one topic in environmental conservation. Example: community development vs. environmental preservation.

1. Divide the class into two groups. If your class is large, you may want to have several debates with several groups.
2. Each group should take time either in class or as homework to research their topic. Remind students that their arguments will be more persuasive if they can present facts or research to support them.
3. After students complete their research, give them some time in class to practice their initial presentations.
4. On the day of the debate, choose which team will go first. Give them a set time to present their side of the issue (10–15 minutes). The other team then does the same. Tell students that they must take notes while listening to the team that is presenting.
5. Give the teams some time to prepare their responses to the other team's first presentation.
6. The teams then present their rebuttals. Again, these should be timed and are usually shorter than the first presentations (5 minutes).
7. If your students are competitive, you may want to award points to each team as they speak and declare a winner when the debate is over. If there are other students observing, have them vote for the team they think made the strongest case.

Green Fair: Share information with others

In order to share your students' learning, organize a "Green Fair." This will help raise awareness of environmental conservation beyond just your classroom. It also gives students the opportunity to interact with their schoolmates around their learning.

1. Ask teams of students to take one aspect of environmental conservation and explore it deeply. They should use the resources available to them through books, magazines and the Internet.
2. Each team will set up a display table to illustrate the aspects of their chosen topic. The table can include informational handouts, samples from nature, interactive activities and games, and discussion topics for those visiting the table.
3. The green fair could possibly happen at lunchtime. Set up the tables around a public area in the school, such as the cafeteria. Then have the teams staff the tables and talk to other students about the topics they researched.

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