

2.5 LET'S BE GREEN



FOCUS QUESTIONS:

- In what ways may we help to create a sustainable environment?
- What steps can each of us take to help the planet?

STANDARD #3 PEOPLE, PLACES AND ENVIRONMENTS.

STANDARD #8 SCIENCE, TECHNOLOGY AND SOCIETY.

LESSON OVERVIEW:

“Seeing green” is a way of life for many Germans. The lesson will bring awareness to the issue of waste management and the current program that is used in Berlin. The students will gain an understanding of how deeply committed the German people are to reducing, reusing, recycling, and upcycling in order to create a sustainable environment.

TEACHER BACKGROUND INFORMATION:

In the 1970's an environmental consciousness developed in Germany. Germany is relatively small in area, but a densely populated country, so damages to the environment because of industrialization became visible faster than in larger countries like France or the United States.

The civil movements against the use of nuclear energy and against deforestation caused by acid rain were important steps on the way to environmental consciousness in Germany. In the beginning there were many local citizens' action committees against environmentally harmful projects.

In 1980 activists from the peace and environmental movements founded a new party: The Greens (*Die Grünen*). Soon after its establishment, the party was elected into the different state parliaments and in 1983, it also gained seats in the German *Bundestag* or the federal parliament.

Since the catastrophe of Chernobyl (1986) many people in Germany thought that nuclear energy could not be controlled properly. The former government of the Social Democrats (SPD) and the Greens (*Bündnis 90 Die Grünen*) decided in 2002 to gradually stop the use of nuclear energy and to promote renewable energy (mainly wind, solar, biomass). The current government of the Christian Democrats (CDU/CSU) and the Liberals (FDP) decided in 2010 to countermand that decision and use nuclear energy for a longer period of time. After the catastrophe of Fukushima, Japan in the spring of 2011, mainly in response to public pressure, the government reversed its position and enacted legislation to gradually stop the use of nuclear energy by the end of 2022.

By 1990, the German government had already launched the first program (the so-called 1000-Roof-Program) to promote and subsidize the use of solar panels on private homes. Between 1999 and 2003 the program was relaunched as 100,000-Roof-Program. In 1991 an extensive garbage recycling program began. In 1999 the



so-called eco-tax was introduced, and the tax regulations changed several times over the next few years to make the use of energy more expensive. The increased revenues were used to lower labor costs. This led to investment in more energy efficient technologies. In 2000, the German Renewable Energy Act (*Erneuerbare-Energien-Gesetz, EEG*) was designed to encourage energy efficiency, and more importantly it guaranteed fixed prices for energy from renewable sources in order to create greater investment in the field, and jumpstarted a tremendous boost of renewable energies.

The environmental movement initiated many of the above-mentioned processes and programs. Not only are rivers and air cleaner again and garbage is separated and recycled, but environmental consciousness is now deeply rooted in the minds of many Germans. Teaching about environmental protection is now compulsory in German school curricula.

Nevertheless, in Germany, despite all these efforts, the pollution and destruction of the environment continue, and one still hears sentences like “either economy or ecology”. Today, many ordinary German citizens and more and more German industries attempt to combine economy and ecology in order to build up a sustainable country.

Source: (2007) Orientierungskurs Deutsch, Bürgerpflichten, Umweltschutz – Recht und Pflicht. Berlin und München: Langenscheidt.

An example of Germany’s commitment to sustainability is “Trennstadt Berlin,” an initiative of the city of Berlin waste management company (*Berliner Stadtreinigung, BSR*) and its partners ALBA, Berlin Recycling and the Foundation for Nature Protection Berlin (*Stiftung Naturschutz*). The separation of waste is a central element of the campaign. Its aim is to gather as much potential recyclables as possible from Berlin waste. For instance, the equivalent of the amount of wood in the Grunewald forest in Berlin is saved annually because of paper recycling. But, there is still greater potential! If waste separation would become even more popular than it is now, the equivalent of the amount of wood in the Tegel forest could easily be saved, too. The campaign “Trennstadt Berlin” is designed to inform the people of Berlin about the advantages of waste separation and recycling and to encourage more active participation in waste avoidance. The city of Berlin already emits 403,000 tons of CO₂ less per year because of waste avoidance, waste separation and recycling. The name for the campaign “Trennstadt Berlin” is a word play with the words *Trend* (same meaning as the English word “trend”) and *trennen* (to separate). *Stadt* means city. Besides large scale advertising posters all over the city, the campaign started with the building of the world’s largest litterbin picture.

Its creation was featured in public announcements in movie theatres in order to raise awareness for sustainability, and appears in the Guinness Book of World Records. It depicts the world famous polar bear, Knut, from the Berlin zoo. (Knut died in 2011.) The teacher might wish to read the students *Knut: How One Little Polar Bear Captivated the World*, by Craig Hatkoff (Scholastic Press, 2007).

Source: Trennstadt Berlin (n.d.) Retrieved 1.7.13 from <http://www.trennstadt-berlin.de/ueber-uns.html>



TIME:

3 (45-minute Class Periods)



INSTRUCTIONAL RESOURCES:

- Guinness World Record: Largest Litter Bin Mosaic (**Handout 2.5 A on Resource Disc**).
- Let's Be Green PowerPoint (**PowerPoint 2.5 B on Resource Disc**)
- Trash Bin Template (**Handout 2.5 C on Resource Disc**)
- Recycling Cards Template (**Handout 2.5 D on Resource Disc**)
- "Waste Master Award" (**Handout 2.5 E on Resource Disc**)
- Definitions: German Recycling Bins (**Handout 2.5 F on Resource Disc**)
- Green Construction Paper
- Crayons, Markers or Colored Pencils



PROCEDURE:

DAY 1:

- **Anticipatory Set:** At the beginning of this lesson, the teacher may show the 50-second YouTube video in class without prior introduction to the general topic:

http://www.youtube.com/watch?v=VaR07sy42MM&feature=player_embedded

(The sentence at the end of the spot says: "Waste separation in Berlin annually saves 403,000 tons of CO₂. Thank you.")

After viewing the teacher should ask the following questions:

- What are the people carrying around? (trash bins)
- Do all of them carry the exact same thing around? (No, they carry different colored bins)
- Do you think the color indicates a difference? (Yes, these are bins in order to separate waste, which later will be recycled. The different colors indicate where different items have to go)
- What do you think the purpose of carrying the bins might be? (To participate in an event)
- What's made from the bins? (A large-scale picture)
- What can you see on the picture? (A polar bear)
- Why do you think they picked this image? (Because human made pollution endangers polar bears, especially CO₂ emissions, which lead to the melting of the polar ice which is the main living space of polar bears)
- Do you think there might be another reason, a special Berlin reason, to pick the polar bear? (Yes, because the world famous polar bear, Knut, used to live in the Berlin Zoo)
- Have you ever heard of him? (Yes, tell what you know about him. No, he became famous because his mother refused to raise him and therefore a zookeeper raised him. Unfortunately he died in 2011 because of an undetected virus)
- Do you have an idea where in Berlin the picture was made? (On the airfield of the closed world famous Tempelhof Airport. The teacher may remind the students of the airlift if this was already a topic in class or tell them the story very briefly)
- Why might people want to use trash cans to create such a picture? Can there be a deeper meaning? (The deeper meaning is to raise more awareness for waste separation and recycling by this unusual and unexpected event)

The teacher may wish to share a blog report of the actual event, Guinness World Record: Largest Litter Bin Mosaic (**Handout 2.5 A on Resource Disc**).

- The teacher should ask students to fold a piece of notebook paper in half vertically. In the left column have students make a list of everything they threw away the day before. In the right column they should draw pictures of what receptacles they used to dispose of these items, then draw a line from the picture to the item.



- Then the teacher may ask students to volunteer to draw a variety of different waste receptacles on the board large enough so that other students may write what they tossed into the correct container. The teacher should lead a discussion about the waste management program found in the community. This will help determine the students' awareness of the program and their understanding of sustainability. Depending on the depth of their knowledge, the teacher may need to discuss the concept of sustainability in greater detail. Students should realize that waste management programs are different across the US.
- For homework, the teacher should assign the students to make a list of the recycling and waste avoidance efforts they are making at home. On the back of the paper, students should create a list of ways they could improve.

DAY 2:

- The teacher may explain to the students that waste avoidance, separation, and recycling are important in Germany and taken very seriously. Once again the teacher should ask the students if they and their families separate waste in order to recycle. In case they do, let them explain what and how they separate by referring to their homework paper.
- Prior to viewing the Let's Be Green PowerPoint (**PowerPoint 2.5 B on Resource Disc**) the teacher should have the students create their own "Let's Be Green" notebook. To create the booklet, each student will need a piece of green construction paper for the cover and the Trash Bin Template (**Handout 2.5 C on Resource Disc**). They'll need 7 bins, so the teacher should print the template pages back to back if possible so that each student has multiple pages. Students may fold the template papers in half inside the green paper and then staple to create a notebook. The cover should read: "Let's Be Green!" During the Let's be Green PowerPoint (**PowerPoint 2.5 B on Resource Disc**), the students should color the bins in their books and list the items that go into them. The teacher will need to pause during the PowerPoint so that students may take notes, by writing the words or drawing pictures of the items.
- While the teacher presents the PowerPoint, the students should take notes in order to be able to remember the German way of recycling and to be able to play the Recycling Game the next day. The teacher should divide the class in groups of five and ask the students to bring empty food cans or small cartons that will be sorted into different trash bins for the game the next day. Explain that a team can only win if they have enough "trash bins" in order to recycle the German way.
- For homework, the students should review their "Let's Be Green" notebook to be prepared for the Day 3 activity: Being "green" like a German!

DAY 3:

- To help the students recall the German way of recycling and which items go where, the teacher may cut out and display the cards on the Recycling Cards Template (**Handout 2.5 D on Resource Disc**). Each card should be held up one by one or the pictures may be projected so that as a class the students may practice their knowledge. If necessary, they may use their "Let's Be Green" notebook. This may not be used during the game. As a modification for special needs students, they may use their notebook.
- Next, the teacher should direct the students to get into their groups and label/color their 7 different "trash bins." Each team will receive a set of cards with pictures of different kinds of waste on them (**Handout 2.5 D on Resource Disc**). These will need to be cut out and placed upside down in a pile. The students have to sort the "waste" in the correct bin as fast as possible. The teacher may set a time, e.g. two or three minutes, as the maximum time. Afterwards the teams have to exchange their bins, so another team checks if the waste was sorted correctly. They should use their "Let's Be Green" notebook to check for accuracy. If the students think an item was not placed in the correct bin, they may put it in front of the bin where they found it inside. Then they count the items that were placed correctly. Before they announce the number of the correct items they should explain to the others where the incorrectly placed items should have been placed and why. The team with the most correct placed items is the winner and gets awarded with the "Waste Master Award" (**Handout 2.5 E on Resource Disc**). The game can be played more than once.

DAY 4 (Optional):

Students have already learned about the German people's commitment to protecting the environment by their extensive waste management program. This activity continues to emphasize the German people's awareness of and interest in their natural environment through the love of the garden gnome! Students should not be surprised that gardening is another way for the Germans to enjoy nature, but why is a gnome found in most German gardens? Students will enjoy learning about the garden gnomes as they research Garden Gnomes on the Internet. After students visit various sites on Garden Gnomes (a suggested site is: <http://www.zwerglignomes.com/index.shtml>), the following activity may be completed:

Create your favorite gnome. Fold a piece of white construction paper in half to make a book. On the cover, draw, color, and name your gnome! On notebook paper write a story about your gnome. Pretend that he lives in your garden, backyard, or green area near where you live. While you are asleep he has adventures, perhaps with some of the other gnomes. Write about one of these adventures. Be sure to:

- go through the steps of the writing process,
- use descriptive words,
- and keep your gnome in "gnome character"!

Once your story is in final draft form, staple it with the cover. Students should then read their stories aloud to the class or to other younger students.

WHOLE GROUP REFLECTION:

- The teacher should lead a class discussion on the question: "What more can we do to help with waste management- in small ways and in ways to promote sustainability in our community?"

MODIFICATIONS:

- During the viewing of the Let's Be Green PowerPoint (**PowerPoint 2.5 B on Resource Disc**), a modification for special needs students would be to have the items listed on the bins, and the student just highlight or color the words as the teacher discusses the bin.
- All students may receive the Definitions: German Recycling Bins (**Handout 2.5 F on Resource Disc**) and cut and paste the words into the bin as a form of note taking.
- The local waste management authorities could be asked to give a presentation on the recycling program found in the area.

EXTENSIONS:

- The teacher will direct the class to design a Whole Class Green Action Plan with 2 major goals for "Going Green" in the classroom and school. The action plan should include specific phases for planning, implementing, monitoring, and evaluating the goals.
- The teacher will direct the class to design a generic template for an Individual Green Action Plan for their home. The students will then select a goal with family members and monitor the results. The students should document their plans and periodically report back to the class.
- The teacher may have students conduct research on the Schreber Gardens. These are small garden communities that are typically found along railway tracks, canals, or other land areas that might be considered unsuitable or undesirable for homes or businesses. These small, rented plots of land provide the people with a green area to grow vegetables and to enjoy nature. Students may write an expository essay depicting the history of the Schreber garden, explaining how Germans use them today, and how they might be instituted in their community. This extension could be expanded into a community service project if students are interested in pursuing this form of community greening.

- Earth Day is celebrated on April 22nd and is probably better known than America Recycles Day (ARD), which is celebrated on November 15th. This is the only nationally recognized day dedicated to encouraging Americans to recycle and buy recycled products. After completing this lesson the teacher may find that students are inspired and may wish to raise awareness in the school community about recycling and buying recycled products. Students may make posters in art and write scripts for the daily announcements in English class making this effort interdisciplinary.
- The *Grün Macht Schule* initiative assists with the ecological redesigning of school fields and playgrounds for the children of Berlin. They disseminate information to the schools to help them develop ecological projects and provide the motivation and assistance to encourage the participation of students, teachers, and parents. If “Making Schools Green” is an initiative that teachers would like to coordinate they could peruse the website for this model at www.gruen-macht-schule.de and contact the group for further information at gruenmachtschule@web.de.
- Felix Finkbeiner is a German youth who has found international fame because of his campaign to plant trees. It began as a class assignment when he was only 9 and has grown to international proportions. The teacher may wish to show the YouTube video and share the recommended links to inspire students to create their own campaign for a greening movement. The assignment would be for the students to prepare a poster with a logo and a 3-minute speech explaining the cause and how others can help the plan come to fruition. *Felix Finkbeiner the 13-year-old tree ambassador* on CNN (2:37) <http://www.youtube.com/watch?v=KJxECiafB1U&feature=related>
Felix's Timeline: http://www.plant-for-the-planet.org/sites/plant-for-the-planet.org/files/article/download/background_information_plant-for-the-planet.pdf
Article: <http://www.care2.com/greenliving/boy-inspires-planting-of-one-million-trees.html>
- Students may research the German political party, The Greens (*Die Grünen*), and write an essay explaining their platform regarding the environment.
- Government students may review the Basic Law for the Federal Republic of Germany: Article 20a. In a report they may 1) interpret Article 20a, 2) theorize the Article's far-reaching effect on the daily life of the people, and 3) search for similar if any US legislation that is equal to Article 20a.

Basic Law for the Federal Republic of Germany:

Article 20a: Protection of the natural foundations of life and animals

Mindful also of its responsibility toward future generations, the state shall protect the natural foundations of life and animals by legislation and, in accordance with law and justice, by executive and judicial action, all within the framework of the constitutional order.

