

2.4 LET'S CYCLE



FOCUS QUESTIONS:

- How can students become more physically active and independent, and at the same time still be safe in their environment?

STANDARD #3 PEOPLE, PLACES AND ENVIRONMENTS.

STANDARD #8 SCIENCE, TECHNOLOGY AND SOCIETY.

LESSON OVERVIEW:

The students will learn that in German society cycling is not only recreation, but also a means for transportation, a component of a healthy life style, and a way to use clean energy. Statistics show that about 8 times as many cyclists are injured in the United States when compared to Germany. What can the U.S. do to teach more about cycling safety, while encouraging cycling as a healthy activity and a way to conserve energy? Bicycle safety education is an excellent opportunity to engage students in interdisciplinary lessons and activities that merge health, science, social studies, math, ELA, and physical education.

The lesson is based on a successful component of the fourth grade German elementary school curricula. It provides the teacher with a foundation to develop a bicycling unit that will enable students to be more physically active, independent, aware of traffic dangers and be safe, responsible riders. At the same time, students will learn that bicycling culture in Germany is based upon values related to responsibilities to sustain and conserve global resources. Students will learn about traffic rules, traffic signs, and how to handle a bicycle in all situations. They will be asked to demonstrate their knowledge on written tests and their cycling skills on a road test. This model closely follows the procedures carried out in all 16 *Länder* in Germany.

(Note: Prior to the lessons not only should the parents of the students already be informed and involved, but the success of the project depends on the support of the school and district administration, school security and the local police department.)

Sources: Danish Ministry of Transport (2007); Department for Transport (2007); German Federal Ministry of Transport (2007); Netherlands Ministry of Transport (2007); U.S. Department of Transportation (2007)



TEACHER BACKGROUND INFORMATION:

Bicycling is an integral part of German daily life. Regardless if people live in the countryside, in small towns or large cities, they cycle. Germans do not only cycle in their free time for fun, but many of them use bicycles to commute on a daily basis to their work places. Even winter doesn't stop people from cycling as long as there is no snow or ice. In the larger cities, bicycle traffic and public transportation are well integrated. In front of most underground, tram or train stations one can find proper bicycle stands to park and lock one's bicycle, and bikes can be taken into the underground, tram or train. In Germany, bikes are not allowed on busses because of the limited space inside and the lack of racks attached outside.

Most local, state and federal authorities actively promote cycling. Meanwhile many cities have commissioners for the improvement of bicycle infrastructure and safety. There are also state and national strategies for the promotion of cycling and the improvement of bicycle infrastructure. Because bicycle traffic has zero emissions, it's seen as a major part in Germany's effort to reduce its carbon dioxide emissions and to become a sustainable country.

Germany uses officially marked cycling routes that connect the different cities or regions. These routes are frequently used by Germans during their vacations. It's not uncommon to cycle for a weekend or even a week or two from place to place. Whole families like to go on this active, healthy and environmentally friendly kind of vacation. Therefore, most parents in Germany place a lot of emphasis on the bicycle education of their children. Most of the time parents will buy their children so-called walking bikes as soon as they can walk, and at the age of three or four most children get their first small bicycle, the *Kinderbike*.

Because cycling is so widely spread, bicycle education is also a mandatory part of German elementary school curricula. Normally in fourth grade children will learn extensively about the danger of traffic, all the street signs, all major traffic rules and how to handle a bicycle safely. In the end, they are required to pass both a formal written exam and a practical test under the supervision of teachers or the school administration and the local police. Often the parents are actively involved, too. When the children have successfully proved to be able to cycle and cope with the traffic they are awarded with a "bicycle license".



This lesson was inspired by the Bremen school bicycling curriculum. The traffic signs and traffic rules in the USA differ from those in Germany; only the setup and the "bicycle license" are modeled after the German example. The teaching materials and quizzes are adapted or available from various bicycling resources in the U.S. Nevertheless, it is recommended that each teacher reviews the materials with local police or other experts on traffic and safety in order to provide accurate materials. It might be necessary to adapt the materials to the local needs.

The teacher should check with his/her own state department of motor vehicles regarding bicycle safety rules.

Sources: Verkehr Und Mobilität (n.d.) Retrieved 1.7.13 from http://www.bmvbs.de/DE/VerkehrUndMobilitaet/Verkehrsteilnehmer/Fahrradfahrer/fahrradfahrer_node.html?view=renderDruckansicht

Teaching Material provided by the Deutsche Verkehrswacht, Landesverkehrswacht Bremen

http://www.bmvbs.de/DE/VerkehrUndMobilitaet/Verkehrsteilnehmer/Fahrradfahrer/fahrradfahrer_node.html

TIME:

4-6 (45-minute Class Periods)

INSTRUCTIONAL RESOURCES:

- Bicycle Statistics Worksheet (**Handout 2.4 A on Resource Disc**)
- Road Sign Explanation Sheet (**Handout 2.4 B on the Resource Disc**)
- Road Sign Flashcard Game (**Handout 2.4 C on the Resource Disc**)
- Let's Cycle PowerPoint (**PowerPoint 2.4 D on Resource Disc**)
- Bicycle License Template (**Handout 2.4 E on Resource Disc**)
- Local Police Officers
- Volunteers



Further Electronic Resources from Various Sources



- Sample Parent Letter from the League of Illinois Bicyclists
<http://bikelib.org/wp-content/uploads/2009/11/ParentLetter.pdf>



- An Organizer's Guide to Bike Rodeos from Cornell University
http://www.bike.cornell.edu/pdfs/Bike_Rodeo_404.2.pdf



- Activity Learning Sheets from the League of Illinois Bicyclists
<http://www.bikelib.org/safety-education/kids/bike-safety-sheet/>

- Bikeability Checklist from the National Highway Traffic Safety Administration
<http://www.nhtsa.gov/people/injury/pedbimot/bike/bikeability/>

- Kids Health: Bike Safety
http://kidshealth.org/kid/watch/out/bike_safety.html



PROCEDURE:

One month prior: Before initiating this lesson the teacher should gain the support of school administration, the parents, and local police. Each group can be of tremendous help and add knowledge and assistance to this project. A letter to parents may suffice to inform them of the lessons' content, or the teacher and school administrator may wish to provide an after school informational meeting. A link for a sample parent letter from the League of Illinois Bicyclists can be found under the Electronic Resources above. The participation of the local police to conduct a simulated road test would provide the students with a more authentic experience. If the local authorities are unable to assist, parent volunteers or other faculty may help.

DAY 1:

Anticipatory Set: The teacher may poll the students on who can ride a bicycle, who owns one, how they learned to ride, and how old they were when they learned. The teacher may share personal information about learning to ride a bike as well.

Next, the teacher should ask the students to share the first thought that comes to mind when they hear the word "bicycle." The teacher may list these ideas on the board into 5 columns without giving the columns a heading. One list should reflect the bicycle's use as recreation, the second list should reflect the bicycle's use as transportation from one location to another for a purpose other than fun, the third list should include parts of the bicycle, the fourth list should include references to bike safety, and the fifth list refers to environmental awareness and healthy living.

When the suggestions are exhausted the class may infer what topic each list reflects. At this time the teacher may share the information about the use of bicycling in Germany. By referring to the Teacher Background, the teacher may share how the Germans may have completed the chart. For example:

Recreation	Transportation	Parts of a Bicycle	Bicycle Safety	Environment / Healthy Living
Ride on marked paths in the fields and forests	Ride to school	Bell	Hand signals	Clean energy Exercise

The teacher should tell the students that the culminating activity is to participate in a bike riding proficiency road test, and that they may need to ask parents or family members to borrow a bike for the day if one is needed. The teacher may also wish to begin sending out requests to borrow bikes for the event via emails to faculty, families, and the community. The teacher should distribute the Bicycle Statistics Worksheet (**Handout 2.4A on Resource Disc**) (optional) for homework.

DAY 2:

If homework was given, the teacher may review this first and discuss the inferences that can be collected from the statistics (**Handout 2.4 A on Resource Disc**).

Many children may be familiar with bike riding and have preconceived ideas about the rules and safety associated with cycling. The teacher may wish to review the electronic resources about bicycle safety with the students. Then, the teacher should distribute the Road Sign Explanation Sheet (**Handout 2.4 B on the Resource Disc**) and review the signs with the students. The teacher should then hand out the Road Sign Flashcard Game (**Handout 2.4 C on the Resource Disc**). The teacher needs to duplicate the game on cardstock so that the descriptions appear behind the symbols/signs (there should be enough cards for each pair of students in the class). Either the teacher or the students should cut the paper to create the flashcards. The students should then practice with a partner and trade cards.

DAY 3:

The teacher may wish to begin the class by quizzing the students on their knowledge of road signs by using the flashcards from Day 2. The teacher should present the Let's Cycle PowerPoint (**PowerPoint 2.4 D on Resource Disc**) and allow for discussion during the presentation. Then return the papers from Day 2. Allow students to review their answers and make changes if needed. Review the answers as a group.

DAY 4 (Optional):

Prior to the road test, perhaps the local cycling club, bike store owner, and/or police officer could give a presentation that would help to reinforce the previous days' instruction.

DAY 5-6:**WHOLE GROUP REFLECTIONS:**

- Hopefully the local police department has agreed to team up with the school to have a bicycle road test simulation like those held in German schools. In German schools, students normally go out several times and practice on the school ground and/or a quiet nearby street how to turn right and left and how close to cycle along parked cars, etc. The teacher should create an obstacle course to simulate an actual road test that could take place in the school parking lot or local streets that have been cordoned off. Perhaps the local cycling club and bike stores would be willing to assist during this event by conducting helmet checks and a safety inspection of the bikes that may include checking tires, frames, handlebars, chain guards, and reflectors, and parents could receive a checklist for each bike indicating if anything needs to be repaired.
- After students complete the bicycle road test and show proficiency, they may be awarded the Bicycle License (**Handout 2.4 E on Resource Disc**) that is modeled after the German bicycle license. The License Template may be filled out by the teacher, with help from the student. If students need more time to practice, they may be given the license but "learner's permit" could be written across it so that all of the children may have a positive experience.
- For additional details for planning the event, it is suggested that the teacher review the additional electronic resources listed above, specifically the Organizer's Guide to Bike Rodeos from Cornell University. This can serve as a model to help prepare for the road test. Bike Rodeos are held throughout the US and can be a useful tool for learning bike safety. This bicycle road test allows students to put into practice the bike safety lessons they have learned and hopefully will bring more families outside to learn, practice and enjoy safe biking together.



MODIFICATIONS:

- Instead of using the Bicycle Statistics Worksheet (**Handout 2.4 A on Resource Disc**), the teacher may have students collect data on bicycle riding among class members and then graph the information. Suggested questions:
 - How many own a bike?
 - How many times a week do they ride it?
 - How many students can ride a bike?
 - How many students ride a bike to school?
- The Bicycle Road Test could be conducted on a Saturday in the community rather than only at one school.
- The teacher may want to ask a local cycling club and/or bike shop to offer a presentation on the rules and safety of cycling.
- For younger children, the teacher may wish to use the Activity Learning Sheets from the League of Illinois Bicyclists as additional review.

EXTENSIONS:

- Younger students may enjoy learning about the walking bike. Instead of using training wheels, German children are given this bike to help them develop balance. Students may use the Internet to research information and write an expository essay which they may share with the class.
- As an ELA activity, the students may prepare a “Go Green Tour” of the community. This could either be a map or a brochure listing the community greenways for biking and walking. Older students may even wish to investigate potential “greenways” that are not yet available, but with community effort and support they could become viable biking and walking areas. The “future” sites can be listed to make others aware of potential sites. The “Go Green Tours” could be placed on the school website or published in the community newspaper.
- The teacher may reference the Bikeability Checklist from the National Highway Traffic Safety Administration and facilitate a class discussion on how well the community is designed for bike riding. If the class feels that the community could improve on or create better biking lanes and trails, perhaps they could begin a letter writing campaign to local politicians and community leaders. This activity would require students to use ELA skills to write a persuasive letter.
- An after school Bike Club could be formed.
- Students who are interested in history may enjoy researching how the former “death zones” in Berlin and areas along the Iron Curtain are now used for biking paths, general recreation, and wildlife havens. The following sites may help students begin their research as they compose an expository essay to share with the class.

<http://courses.umass.edu/latour/Germany/Csaccone/index.html>

http://www.europeangreenbelt.org/001.route_ce.html

