

Easy Breathers Video

Suggested Discussion Points for Students

Let the adventure begin. Students from high schools in Milwaukee, Wisconsin; Houston, Texas; and San Jose, California, working next to professionals from the media world, have partnered to develop and produce *Easy Breathers*. These discussion points will assist you in sharing the video with your students. We would enjoy hearing your comments on the video and hope you will return the evaluation card (enclosed in the video box) to us, or complete the feedback form on our Web site, www.easybreathers.org.

Note: If you're reading this document online, find out how to get the video by clicking on "About."

Car Choices

The story is based on the everyday transportation choices we make. The students see and hear about many different car options ranging from the Corbin Sparrow, an electric single passenger car, to hybrids, to fuel-cell vehicles. In the video, Wanessa and Jordan visit the Sparrow manufacturing plant in Hollister, California to see the cars first hand. Using the questions/ideas below, have your students do an inventory of how they move around their community. What choices do they have? How far do they travel using each?

1. Estimate the number of miles you drive in an average month. Keep a log for several weeks on how you use your vehicle (you can find a sample log in the *Auto Mania* activity on the Web site).
2. What does your car average per gallon? What factors impact gas mileage for a vehicle? Can you do anything about that? Could you reduce the trips in any ways? Shorten? Chain? Carpool? Transit? Not travel? If so, calculate your savings or losses based on the change.
3. How often do you drive with at least one other person in the vehicle?
4. Define the following terms: catalytic converter; evaporative emissions; hybrid car.
5. How often do you tune-up your vehicle? Manufacturer's recommendation? Do you check your tire inflation? Change your filters?
6. If you were looking to purchase a new car, what features would be most important? Price, color, size, style, safety, gas mileage, others? Would you drive a Sparrow? Why or why not?
7. As of 2001, auto manufacturers are required to have an average fleet mileage rating of 27.5 miles per gallon for passenger cars, and a lower rating of 20.7 miles per gallon for light trucks (pickups and SUVs). Should the government require manufacturers to attain a higher fleet mileage rate for cars? For light trucks? Why or why not?
8. Over the years, advances in technology have made many changes to the car. Cleaner fuels, design, materials, and emission controls are just a few examples. Will new technology solve the environmental and social problems faced by cars today? What are some of the "concept" cars being shown today at auto shows? What will the new features be like?

Air Quality

Over 100 million Americans live in non-attainment areas that do not meet the standards established for the 6 criteria pollutants (ozone, nitrogen oxides, sulfur oxides, particulate matter, lead, and carbon monoxide). In the video, students visit Houston and observe first hand some of the air quality problems that this region has. Houston had the most exceedances of the Clean Air Act Standards in 2001. Your students should investigate their community and what is being done to address air quality.

1. Is air quality an issue in your community? Is your community a non-attainment area? Where is the nearest non-attainment area?
2. Why did the students visit Houston? What issues made Houston one of the sites to visit?
3. What is ground-level ozone? How does it form? What are Ozone Action days?
4. What is the role of government in setting and enforcing air quality and transportation rules? Are the rules working? Should the rules be changed? Less strict? More strict?
5. What populations of people are most impacted by poor air quality?

Mass Transit

The students in the video visit and ride the light rail system in San Jose, California. Why are mass transit systems working in some communities and not in others? Your students should investigate mass transit options in your community.

1. Think of the infrastructure required for a transportation system. What was needed for the horse and buggy? The train? The car? For planes? How many years did it take to develop these systems?
2. Are improvements for the car system still occurring? Are more required? What are the costs of these improvements and what are the costs to the environment?
3. The students ride the light rail system in San Jose. Does your community have a mass transit system? If yes, is it working? Could it be improved? If you don't have a mass transit system, should your community consider building one? Why or why not?
4. What will the transportation system of the future be in your community or other places on the globe?

Global Issues: Air Quality and Transportation

Building on their knowledge from the video, students should examine global transportation issues. With more than 6 billion people living on the earth, how will they be moved around? How will that impact the environment?

1. Car sales in many developing countries are rising rapidly. What impact will that have on the global economy and environment?
2. Based on what you've already learned about how transportation systems in the past have been established, what types of changes will need to be made to handle more cars in these regions?
3. What are other transportation options in these regions? What are some examples?
4. What does the term "megacity" refer to? What are the largest "megacities" in the world today? What types of transportation systems do they have? What transportation challenges do these cities face?
5. In learning about global cities and countries, is there a city/country that you think is handling air quality and transportation issues better than most? Which one? Why?
6. How will the choices made by the U.S. and other countries impact the global community? What emission controls and other standards do countries outside the U.S. use to protect the environment? Will global agreements like the Kyoto Protocol be possible?

Connections: from the Video to the Web site

Now that you've seen and discussed the video, there are resources for both students and teachers on the *Easy Breathers* Web site. For example, at the end of the video, Ray tips you off to hidden clues found throughout the video. What clues connected to air quality and transportation were your students able to list? See how you did using the game "Get a Clue" in the "Play/The Rec Room" section of the *Easy Breathers* site, and find out the significance of each clue.

You probably also noticed the factoids at the beginning of the video. Air quality and transportation issues like these are described in depth in the "Explore/The Library" section.

Your students can submit writing, project descriptions/results, art, photography, and other work to *Easy Breathers* to be considered for publication on the site, and/or read the works of other students. Find out how in the "Speak UP!" section.

You can collaborate with other teachers and educators using "The Teacher's Lounge," an interactive, real-time bulletin board - the brainchild of a teacher from Brazil who was looking for a resource that would help connect educators across the globe.

Finally, if there are terms or concepts in the video and/or in these discussion questions with which you aren't familiar, the "Explore/The Library" section of the site can answer most of your questions.

Visit "The Classroom" for a complete introduction to the site, including classroom activities and ways to engage your students. Click on the "first visit" link in The Classroom for a virtual tour.

We would like to thank the U.S. Environmental Protection Agency for their support of the Easy Breathers project.