



Title: EcoTravel Log

Grade Level: 5-8

Introduction: Students record their travel patterns over a four week period. In a journal or a notebook they record the mode of travel, how far they went and how long it took. After two weeks students review their diaries and identify trips that could have been made differently, either replaced by human powered travel or transit, combined with other trips or could have been a car-pool or ride share. For the second two week period students record their travel patterns with a goal of making changes in the ways they get around.

Objective: Students will keep a record over time, analyze the data collected and use the information to identify ways in which they can change their behavior to benefit their health and the environment.

Variation: Have students assign point values to changes they can make and score themselves during the second two week period. Have students record other lifestyle changes they can make (see bonus points page).

Related Lessons: Ecopoints Scorecard, Transportation Choices and the Environment, Greenhouse in a Bottle

Skill Set: collecting data, making estimations, analyzing data

Set Up: regular classroom

Duration: Minimum three class periods

Materials:

- journal or a notebook
- pens or pencils
- bike route and transit maps of the area with distance key (available from Safe Routes to Schools, chris@marinbike.org 415.453.3762)

Preparation:

- create a place for the map to be kept that students can easily reference it

Discussion:

- Acknowledge that kids may not have a lot of control over how they get around, but that this is an exercise which is designed to empower them to take control of their own transportation. Getting around on their own is a valuable life skill which will help them develop decision making and problem solving skills, increase their sense

of responsibility and build confidence, as well as expand their world and afford them new freedoms. Remind them that they have a lot of influence with their parents and have a responsibility within the family to make sure everyone is working together to live in such a way that our personal, community and

environmental health and safety are protected.

- Define a “trip” as every time you travel from place to place (home to school or the store, school to soccer practice, home to a friends house...)
- Have you (or your parents) ever changed the way you do something in order to “save the planet”?
(recycling, buying recycled products, car pooling, buying a hybrid car...)
- Why do we need to “save the planet”? What’s happening now that’s never happened before?
(We’re running out of natural resources, global warming, the holes in the ozone...)
- What natural resources are we running out of?
(water, fossil fuel, land for construction, agricultural land, forest products, plant and animal species...)
- Can any of these things be replaced/restored once they are gone?
(land can be restored in some instances, otherwise once a plant or animal is extinct it is gone forever)
- Won’t science/technology invent a solution?
(In some areas better technology already exists, we must choose to use it. One example would be the choice to buy a Hybrid vehicle instead of an SUV or build a home with a solar heating system. Many of our smaller purchases and practices concerning technology, particularly chemical technology also matter, such as buying paper made from recycled products and not using pesticides in our gardens.)
- What will life be like in the future if we continue to use and pollute the way we do?
(climate change, rising ocean levels resulting in the loss of islands and coastlines, sickness resulting from air and water quality, food and housing will become very expensive, we will lose our open spaces)
- What kinds of things can we do to help the situation?
(have student brainstorm, ideas include: human powered transportation and transit, recycling and buying recycled and reusable products, turning off lights, turning down the thermostat, using small fans instead of air conditioners and

clotheslines instead of dryers)

- One dangerous emission produced by cars is carbon dioxide (CO₂). This greenhouse gas is released in direct proportion to the gallons of gasoline consumed. The amount of carbon dioxide American cars emit into the atmosphere has been steadily increasing, from 1970 to 1999, the amount increased by 56%, culminating in an estimated 300 million metric tons of carbon being released last year.
- We also know that a five minute car trip is about 2.5 miles and would take about 30-45 minutes by foot or about 10-20 minutes by bike. Compare this to one hour of walking in the mall which covers about 5-6 miles. Many car trips are short errands (grocery store, post office...) which could be replaced by biking or walking, saving many tons of CO₂ pollution.

Instruction/Modeling:

- Relate a personal experience (commitment to human powered transportation, choosing to live close to work, buying locally grown and made food and goods to reduce the pollution generated by shipping)
- Does anybody in the class already make an effort to be less dependent on their parents car? How? What are other benefits of being less dependent on the car? (personal freedom, greater mobility, more time with friends, health benefits of exercise, saves time, chance to enjoy fresh air and sunshine, more fun...)
- Explain that students will be recording all of their trips over a two week period. This should take no more than a few minutes daily during regular homework time and can be recorded in an existing notebook or on scratch loose leaf paper and kept in a binder.
- The data we are after is 1) the distance of the trip (which can be calculated by looking at the cars odometer or estimated by referring to the map) 2) the time it takes to get where you're going and 3) the mode used.
- The key for recording modes is a= private automobile b= bike, w=walking, c=carpool, t=transit, cp=carpool, o=other
- At the end of two weeks review the record and identify:
 - 1) the private automobile trips that were under five minutes (or approximately 2.5 miles). Could any of these trips be replaced in the future by walking or biking?
 - 2) any trips that were on the bus, ferry, Caltrain or BART route. Was transit an option?

3) any trips which were repetitive. Do we go to the store several times a week when we could have combined errands?

4) any trips that could have been carpooled or shared. Why don't we make more of an effort to get together to share rides?

- For the next two weeks make an attempt to change your travel patterns by focusing on the trips identified as short, along transit lines, could have been combined or shared.
- After the final two weeks compare travel patterns with the first two weeks. Were students able to make changes on their own? Were they able to impact their families? What was easy to do? What was challenging? How could alternatives to the car be made more effective/appealing?

Assessment:

- Were records complete?
- Were students able to identify the trips that could be taken differently?
- Were they able to create any changes in the way they/their families get around?

Closing:

- Have a discussion about decisions they are going to make as adults which will affect their environment (buying a hybrid instead of an SUV, buying recycled products...)
- Have students brainstorm about ways they can help their families make changes today.