



## **Transportation Efficiency Assignment**

This project is designed for use with the following episodes:

- **e<sup>2</sup> transport — Paris: Vélo Liberté and Portland: A Sense of Place**

Objective: To analyze the efficiency of different modes of transportation and write a research paper with recommendations for the most efficient system in your own community.

TIMING: 1 – 3 class periods (not including episode discussions); students will have 2 – 4 weeks to complete the assignment

### THE ASSIGNMENT:

- 1) Follow the teacher’s guide for discussion of **e<sup>2</sup> transport** episodes “Paris: Vélo Liberté” and “Portland: A Sense of Place” (Both are recommended, but only “Paris” is necessary.)
- 2) Each student, or pairs or groups of students, will write a 5 – 7 page research paper to include the following:
  - a. Research the current transportation options available in your community
  - b. Analyze the efficiency of the available options based on your own criteria.
  - c. Make recommendations based on your analysis to improve the efficiency of the current transportation system or to create an entirely new system that is more efficient than what exists now.

### FOR THE TEACHER

Post-viewing questions No. 6 and No. 7 of the “Paris: Vélo Liberté” episode are meant as a lead-in to this assignment. Below are more questions that can assist students as they try to determine their own criteria for examining the efficiency of the transportation methods in their community.

### **Efficiency Criteria (50 minutes)**

Students must determine their own criteria for how they will judge the efficiency of each mode of transportation. Teachers can put students in groups to consider the following questions, then facilitate a structured full-class discussion to share responses. Following



the discussion, the students can use the rest of the class period to start choosing their own criteria to be used for their paper.

Questions to consider:

1. How does distance affect the efficiency of a mode of transportation?
2. Is the solution that is most efficient for the city necessarily most efficient for every consumer? In other words, should the method that serves the most people be considered the most efficient? Why or why not?
3. In what ways might the opinions of the city planners differ from those of consumers when it comes to the efficiency of a particular type of transportation? Is some compromise necessary?
4. If you spend time walking to and from work or school instead of driving, but you save time and money because you are getting exercise without a gym membership, which is more efficient?
5. What is the most efficient method for you to get to school? Is that the method you use now? Why or why not?
6. What costs should be considered when choosing a mode of transportation?
  - a. Monetary costs – price of tickets to consumers, operational costs of the system, construction of new system costs, maintenance costs, costs of refurbishing an old system
  - b. Environmental costs – air pollution, greenhouse gas emissions, loss of green space, sustainable design costs
7. What benefits should be considered when choosing a mode of transportation?
  - a. Health benefits – provides an opportunity for exercise, air quality improvements
  - b. Transit time benefits – work or other things be done while in transit; are there health benefits while in transit?
8. Should qualitative benefits of different types of transportation methods, like the people chatting at Vélib stations, be considered in the efficiency of these methods? If so, what criteria will you use to describe these benefits? (e.g. building a sense of community, street safety, spending time outside)

Students should hand in their efficiency criteria for approval before starting to write their first draft. The teacher should check in with students periodically to track their progress with interim assignments (i.e. efficiency criteria approval, bringing in evidence of research that has been done, first draft, final draft.)



**OPTIONAL INTERIM CLASS PERIODS (50 minutes each)**

- Students can be given a period to go to the library or online to do research or work on writing the first draft.
- Students can spend a class period doing peer editing, either just before the first draft is due or between the first and final drafts.