

Lesson 10: Youth Decision Making

Youth Decision Making Warm-Up

Background: Life confronts everyone with difficult decisions that can be hugely important. This is true for large infrastructure problems that society faces as well as personal problems that students face. Choices must be made about conflicting values and the relative importance of short term and long term impacts. Uncertainty about what the future holds makes decision making especially tough. This warm-up exercise presents three examples of tough decisions that youth today might face.

Task: For each of the following three examples, list arguments for both sides and then record your decision.

1. Sally is 16 years old. She loves to play the piano and sing. She is invited to join a start-up band as their lead singer and occasion piano player but to do so she will need to practice two hours every day and perform once or twice most weekends. She will need to drop her AP classes to join the band and probably give up her hope to major in engineering at the state university.

Question: Should Sally take the short term option of music or the long term option of taking challenging academic classes? What are some good arguments on each side?

2. John is a seventeen years old senior in high school. His parents want him to go to community college for two years and then transfer to the university to try to earn an Engineering Degree. John is a good student but is bored with school. The Tesla car company has offered him a starting mechanic job that will pay him \$ 38,000 a year, enough to make it possible to purchase a car and rent an apartment for him and his girlfriend to start living together.

Question: Should John accept the job offer? What are some good arguments on each side?

3. Chico is 24 years old and works at a local bank. He has just completed his second year and has received an employment invitation to begin automatic investment into a 401K account. The bank will match his 5% investment with an additional 5%. He now earns \$3,000 a month. To agree to this investment offer, his take home pay would drop at least \$170. His monthly budget now for his car and recreation is \$220. If he starts investing, he will probably accumulate \$60,000 in his 401K in 10 years but he will need to cut back on his social life now.

Question: Should Chico start investing in a 401 K account? What are some good arguments on each side?

Youth Decision Making: Drinking Water in Our Schools

Bad water has been in the news lately. Flint, Michigan has suffered from lead contamination in the citywide water supply. Regional droughts and population growth are encouraging water conservation everywhere. Consumers are increasingly preferring bottled water over traditional tap water. Because of these issues, water usage in the local schools has been receiving much attention and your school superintendent has set up a committee to make a recommendation for your school. For this activity, you will be assuming your district has safe water at each school. Nevertheless, there are options to consider. Listed below are some opinions from parents, and four possible actions, each with associated costs. As a group, discuss the alternatives and then decide what drinking water policy you will recommend to your superintendent. Be able to support your recommendation with good reasons.

As a group, examine the following statements by parents. What arguments are left out?

“When I visited my child’s school, the fountain water was warm and tasted funny.”

“We need more fountains, not more polluting plastic bottles!”

“It is a matter of equity. If we do nothing, only the rich kids will have good tasting water because they alone can afford bottled water.”

“The tap water at school is just fine. We need to spend the money on books and computers. If the kids want bottled water, they can bring it from home.”

Options to consider:

1. Nothing needs to be done. The water already provided is safe and adequate. If students are not happy with it, they can get their own bottled water. (No cost)
2. Refrigerate existing tap water and dispense it in several inexpensive water coolers. Students bring their own bottles. (Berkeley Unified School System. Minimal cost)
3. Install a filter system with dispensers located around the campus. (San Mateo Union H. S. D. Cost: \$2,000 to install one dispenser, \$200 yearly to replace filters for each dispenser.)
4. Provide bottled water for each student. (Baltimore Public School System, Cost: \$10 per student yearly.)

Your recommendation:

Supplemental Materials: Water in Schools

Resources:

“Promoting Water Consumption in Schools” is an informative two-page handout by California Food Policy Advocates. (http://ww.waterinschools.org/factsheets/factsheet_twopg.pdf)

“Schools Buying Water Filters Even Though Water is Fine” describes San Mateo Union High School District’s decision to purchase FloWater dispensaries for each school. (<http://www.sfchronicle.com/bayarea/article/Schools-buying-water-filters-even-though-7253189.php>)

At “Drinking Water Access in Schools” (<http://www.changelabsolutions.org/publications/drinking-water-access-schools>) you will find a very informative overview with several strategies described and many resources listed.

Strategic Energy Innovations is a non-profit that helps schools and other communities set and reach sustainability goals, many of which include infrastructure improvements. (<http://www.seiinc.org/580-sei-tackles-water>)

“Water in Schools” provides a wealth of valuable information including FAQs, News, Resources, and Case Studies. (<http://www.waterinschools.org/faqs/>)

Additional Activities:

Students could form study groups to investigate water quality and water usage at their school. Here are some of many possible questions they might ask:

- What is the current law regarding safe and adequate water in the schools?
- What is the current condition of the school’s plumbing? When was the school built? Are there any lead pipes?
- When was the water last tested?
- Is the landscaping drought resistant?
- Is free drinking water provided in the lunch room area?

Facts about Infrastructure in America

Falling Down Bridges

One in 10 bridges are deemed structurally deficient, meaning the bridge has a significant defect that requires reduced weight or speed limits. Another 14 percent of the nation's 607,380 bridges are considered "functionally obsolete," meaning they are no longer suited to their current task because of overuse or a lack of safety features, yet are still in use.

Waterways

Inland waterways, including canals and rivers, move the equivalent of 51 million truckloads of goods every year—and half the locks are more than 50 years old. The US Army Corps of Engineers, which maintains most of the system, says it will take \$13 billion through 2020, with 27 percent of that going towards new lock and dam facilities and 73 percent toward improving existing facilities. Without an increase in funding, it could take the Army Corps until 2090 to finish everything on the to-do list.

Rail

There are more than 14,000 miles of high-speed rail operating around the world, but none in the United States. In Chicago, it can take a freight train nearly as long to go across the city, as it would for the same train to go from Chicago to Los Angeles.

Highway and Airport Congestion

American Society of Civil Engineers estimates that congestion, which costs American drivers \$101 billion annually in wasted time and fuel, and airport delays that are a \$22 billion drag on the economy.

Roads

Putting off repairs today means spending much more on those repairs in the future, as repair costs rise exponentially as road conditions decline. According to the American Association of State Highway and Transportation Officials, repairing a road that has fallen into poor condition can cost up to 14 times as much as preserving a road in good condition to begin with

- According to the American Society of Civil Engineers, in 2013, nearly a third of America's roads were in poor or mediocre condition. An estimated \$170 billion in capital investments annually would be required to bring about significant improvement.

Decision Making: Youth Infrastructure Consulting Team

Background: The American Society of Civil Engineers has formed a high school student consulting team to give it guidance on ways to build youth awareness of the importance of infrastructure. Your small group is the consulting team.

Infrastructure includes:

Water Management:

Drinking water system, irrigation systems, flood control, dams, waterways

Transportation:

Roads, bridges, mass transit, railways, canals, airports, ferries, ports

Energy:

Dams, power plants, power distribution and transmission facilities, pipelines

Communication:

Post office, telephone networks, internet services, undersea cable

Solid Waste Management:

Sewage, garbage collection, landfills

Security:

Prisons, Fire houses, Court Houses, Military Installations

Social Services:

Hospitals, schools, Foster Child Homes

Cultural and Recreational:

Museums, parks, athletic stadiums

Small Consulting Group Tasks:

1. After quickly looking over the handout, ***Facts about Infrastructure in America***, select one of the areas of infrastructure and one example from that area for your focus.
2. Discuss why that example is important to your school and/or community.
3. Design an activity or experience that will help students at your school understand the importance of this example of infrastructure and contribute to its support.
4. Select one person from your group to make a 30 second report on your idea to the class.