TITLE OF THE LESSON

Mobility Challenge: From Portland to San Francisco

Short description:

Getting from point A to point B can be a problem and can cause problems for our environment and our social surroundings. For example, it can cause heavy traffic, noise pollution or mean arriving late to an appointment. It can also lead to more emissions of greenhouse gases, which affect our climate. In addition, what form of transportation we choose to take has direct economic consequences on our own bank account. So how should the environmental, economic, and social costs of different modes of travel best be weighed and balanced in order to choose the most sustainable option? To master this challenge you'll need to do just that!

Before you start, here's a quick video that explains what sustainability means exactly:
https://www.youtube.com/watch?v=_5r4loXPyx8#action=share

Concrete challenge / task:

After meeting the American partner class at Harrison Preparatory Academy in Lakewood, WA on September 26th, we, Matt and Valentina officially start our flightless trip around the world with a bicycle ride to Olympia, WA and then on to Portland, OR. That's a distance of approximately 130 miles or 210 kilometers. Our mussels are already sore and the October rain makes everything more tiresome. So the big question we are facing now is: How should we get from Portland to our next major stop in San Francisco, CA, a distance of approximately 700 miles or 1,125 kilometers without flying (to avoid CO2 emissions and protect the climate)?

Here are the three options:

a) by bus

b) by bicycle

c) by train

Whoever wants to, and finds convincing arguments, can also suggest a combination of 2-3 of the options (a, b, and c).

Age group: 12-18

recommended for classes from 7th grade to 12th grade (French system: 5ème-terminale)

Duration *(90-120min)*/2 lessons

SDG-connection:

	1	No poverty
	2	Zero Hunger
X	3	Good Health and Well-Being
	4	Quality Education
	5	Gender Equality
	6	Clean Water and Sanitation
	7	Affordable and Clean Energy
	8	Decent Work & Economic Stability
	9	Industry, Innovation and Infrastructure
	10	Reduced Inequalities
	11	Sustainable Cities and Communities
X	12	Responsible Consumption and Production
X	13	Climate Action
	14	Life Below Water
	15	Life on Land
	16	Peace, Justice and Strong Institutions
	17	Partnerships &Cooperation for the Goals between Institutions

Suggested methods for implementation:

group work and discussions, presentations, video watching, posters, online research

Suitable for the following subjects:

e.g. English, Geography, Biology (human health), Economics (cost calculation)

Required materials:

e.g. tablets or phones for online research, internet, pens and big poster papers, papers to take notes

Competencies you gain by helping us:

- Problem solving ability: Planning the mobility of a trip while considering sustainable consumption / travel options
- Critical thinking: consider advantages& disadvantages of different modes of transportation (ecological, economic and social considerations)
- Teamwork and cooperation: Getting more perspectives thanks to group discussions
- Systems Thinking: How are mobility decisions interconnected with health, environmental & climate impacts

Connection to the syllabus

- Social Studies, Human Health, Ethics and Responsibility, Geographical Knowledge

Links and specializations

- Greyhound (buses): www.greyhound.com
- Amtrak (trains): www.amtrak.com
- Google Maps provides bicycle routes in beta at: www.maps.google.com
- Weather in the U.S. at: www.weather.gov
- Emissions calculator: www.travelmatters.org/calculator/ (or you can search for emissions calculators to find a different one. Keep in mind that how the emissions are calculated at each site could vary!)

For your decision, keep in mind the following:

- Greenhouse gas emissions and energy (e.g. gas, diesel, electricity, …) for the different modes of transportation (including aiplanes)
- Financial costs (e.g. tickets, possible repairs, food, lodging, …)
- Social advantages and disadvantages (e.g. meeting new and interesting people along the way, being able to take a detour, …)
- Cultural opportunities (e.g. is there anything along the way that they should see? How can they best include such opportunities?)
- Beyond issues of sustainability, consider how other factors, like weather, luggage, safety, schedule/timing, could be play an important role based on the decision.

Lesson provided by these SDG-Reporters:

Matt&Valentina

And the two fantastic ViA interns:

Kadiatou and Alpha

Lesson plan for teachers	
How to organize the lesson:	
Phase 1 (10min)	*Start the lesson with two questions for your class:* - *How do you usually travel?* - *Which is your favorite means of transportation?* *Then tell them that they are going to solve a mobility challenge today:* *Look at the Website of Forum ViA and read individually the challenge that Matt and Valentina were facing:* *Take guesses! Shout outs: How would you go from Portland to San Francisco in a sustainable way?*
Phase 2 (20 min)	*Form groups of six students each and take out tablets or phones to do research on:* *1) Distance between the two cities (where are they geographically located?)* *2) What's the weather like in the month of October usually in this area of the world (temperature and risk of rain)* *3) Time and CO2 emissions it takes for the three different options (bus, train, bicycle) – plus the airplane (just as a reference on how much CO2 we save)* *4) Compare cost and possibilities to combine bus or train+ bike (Amtrak.com, greyhound.com) (consider also luggage)* *5) How many calories do you burn if you take a bike instead of sitting on a bus or train?* *6) How can riding a bike affect Matt and Valentina's health (in a positive and negative way)* *Discuss the findings in the group*
Phase 3 (35 min) 15 min for travel plan+ 20 min for presentation	- *Each group gets an empty white poster and pens with different colors to collect the core information that they found and hold important* - *Based on the research: which options would they suggest to Matt and Valentina? Draw a convincing travel plan on the poster* ---------- *eventually continue on a second day* ---------- - *Poster presentation: Present travel plans in front of the class (20 min)*
Phase 4 (15-20min)	- *Watch the video of the solution that Matt and Valentina finally picked* - *Teacher asks: Who is happy with solution Matt and Valentina picked and who is not? Form two groups with each one speaker and give each group 5 minutes to collect arguments for or against the solution. What would they do different or would they do the same?* - *Speaker of each group speaks up about the opinions and arguments collected in his or her group*