

IF MONEY WON'T BUY IT



People
and the
Planet

Lessons for a Sustainable Future

INTRODUCTION

As individuals, our days are filled with lifestyle choices such as what and where to eat, how to get from place to place, and how to spend our free time. Very often, we make decisions based on how the outcome will impact our daily life – will it save us money? Be more convenient? Provide entertainment or comfort? By doing so, we neglect to consider the built-in environmental impacts of our actions. Other times, we know the environmental impact of our choices but decide that the personal cost of making the eco-friendly choice is too high to change our behaviors. For instance, you may know that biking is more eco-friendly, but it would take a lot longer and is not enjoyable in bad weather. Evaluating the environmental impact of our daily actions and the motivations behind our decisions is an important step in pursuing a sustainable lifestyle.

MATERIALS

- Action Rating Sheet (provided)
- Student Worksheet

PROCEDURE

1. To set the stage for this activity, tell students they will be using the class period to spend a new kind of money. Distribute the Action Rating Sheet and the Student Worksheet and then describe the natural resource units system by reading the paragraph below:

“How would we react if the government issued every person a new charge card that limited negative environmental impacts? Today, you will imagine what it would be like to live in a society where people are assigned ‘Natural Resource Units,’ or ‘NRUs.’ These units will be used alongside our monetary currency and the NRUs are to be presented when conducting daily activities related to transportation, food, waste, water and electricity use. The bigger environmental impact the activity has, the more NRUs it will cost.”

CONCEPT

Everyday decisions about our lifestyles have an environmental impact that must be balanced against personal choice.

OBJECTIVES

Students will be able to:

- Determine how their lifestyle choices would change if based on environmental impact rather than monetary value.
- Make lifestyle decisions based on an environmental impact budget.
- Express their values through personal choices and decisions.
- Calculate the environmental cost of everyday actions.

SUBJECTS

Science (Earth and environmental), social studies (geography, economics), family and consumer sciences, math

SKILLS

Problem solving, decision making, critical thinking, values identification, prioritizing

METHOD

Students participate in a budgeting activity to weigh everyday actions against their environmental impact.

- Have students look at the Action Rating Sheet, and explain that the NRU points are totaled based on the action's environmental impact in three categories: use of energy or resources, disturbance to natural areas, and pollution to the air, land or water. Display the following chart or describe the categories.

Uses energy or resources	Disturbs natural areas	Pollutes air, land or water
How much energy or resources does this action require?	Does this action impact the natural environment?	Does this action cause any pollution?

- Now explain the day's activity by reading the following:

"It is January 1st and you have been allotted 60 NRUs for the year. How will you spend them? Will you be able to do everything you'd like while staying within your annual NRUs budget? Will meeting that budget have personal costs?"

- Reference the Rating Sheet and remind students that this is only a simulation and that the environmental impact listed accounts for the impact of using a resource and not always for the full impact of production. Also, clarify that they are to make these decisions as individuals who can freely determine how much energy they use and what items they own. (You may want to tell them to imagine that they are a little older and have their own apartment.)
- Allow students time to fill out the chart on the Student Worksheet. Then divide students into groups of 3-4 to discuss their choices and answer the questions on the Student Worksheet.

Note: The last column on the Student Worksheet has students consider if they would personally be impacted by the action. If they think yes, they should put a check, and explain their thinking. If they think no, they should leave it blank. For example, one of the options for the Food Shopping category is to shop at a farmer's market and this would limit you and your family to only seasonal or local foods. In this case, the personal impact is the freedom to select out of season/non-local products.

- To add a quantitative component to the activity, you can have students make a class bar graph at the front of the room with sticky dots on paper or hatch marks on a whiteboard. The bars would represent different NRU totals in bands of 5 or 10 (e.g. 31-40, 41-50, 51-60, 61-70 and 71-80). Another option would be to record all of the totals and come up with a class average.
- Bring the class back together and go through the Discussion Questions.

DISCUSSION QUESTIONS

- Are there any actions on the Rating Sheet that cost more or fewer NRUs than you think they should cost, based on their environmental impact?

Answers will vary. Students should feel free to share the ratings that they think certain items should have had.

2. Most of the actions on the Rating Sheet are decisions that people make every day. Are there any actions that you think should be added to the Rating Sheet? If so, how would you represent the breakdown of NRUs? How might this impact your ability to stay under budget?
3. Was it hard to make decisions about which things you could “afford” given the NRUs you had? Why or why not? (Have students refer to their Student Worksheets and the items they checked as having a personal impact.)
4. Which lifestyle choices do you think would enable you to have the most positive impact on the environment?
5. If you were given a budget of NRUs for a household of four people, which actions do you think might be multiplied by four and which might stay the same? What would be some of the considerations?

Answers may include: driving a vehicle could stay the same if everyone drove together but would be multiplied for multiple cars and drivers; the thermostat in the house or apartment would be the same even with more people; showers are an individual activity, so that would be multiplied; food choices would be multiplied; TV watching and gaming could be group activities but using the computer might be multiplied.

6. Looking at the choices you made, which ones might be affected by where you live?

Answers may include: the use of heating and air conditioning might depend on the climate in your area; if you live in an urban area, you may have more opportunities to take public transit, while residents of suburbs and rural areas are more dependent on cars; depending on where you live, you may or may not have access to a farmer’s market.

ASSESSMENT

Evaluate students' participation in the small group discussions and review answers to the Student Worksheet to gauge understanding.

FOLLOW-UP ACTIVITY

Students select one of the actions from the Action Rating Sheet that has a total NRU Rating of “5” or higher and research why that action might have the environmental impact indicated on the chart. They should write up a paragraph explaining the specific impacts on the environment (e.g. deforestation, air or water pollution, etc.). If they disagree with the point value assigned on the chart, they should explain why.

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ACTION RATING SHEET

Natural Resource Units (NRUs) are assigned in each category on a scale of 0 to 4. These numbers show the environmental impact of each item.

0 = no impact 1 = very little 2 = some impact 3 = quite a bit 4 = heavy impact

Impact in Natural Resource Units Per Year

Action	Uses energy or resources	Disturbs natural areas	Pollutes air, land or water	Total
Transportation				
Driving a gas/electric hybrid (50 mpg)	2	2	2	6
Driving a small economy car (35 mpg)	3	3	3	9
Driving a truck (15 mpg)	4	4	4	12
Driving large, luxury car (20 mpg)	4	4	4	12
Using mass transit	2	2	2	6
Biking/walking	0	0	0	0
Riding on an passenger jet for one vacation	2	3	4	9
Diet				
Eating a diet that includes meat & dairy	4	3	2	9
Eating vegetarian (includes dairy but no meat)	1	1	1	3
Eating vegan (no meat or dairy)	1	0	0	1
Food Shopping				
Grocery shopping at a farmer's market	2	0	0	2
Grocery shopping at a supermarket	3	1	2	6
Grocery shopping online	3	2	2	7
Waste disposal				
Composting	0	1	1	2
Recycling paper, aluminum and glass	2	1	2	5
Mixing trash (no recycling)	2	4	4	10
Using disposable food-ware	2	2	3	7

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ACTION RATING SHEET - PAGE 2

Impact in Natural Resource Units Per Year

Action	Uses energy or resources	Disturbs natural areas	Pollutes air, land or water	Total
Dining				
Getting takeout most of the time	3	2	2	7
Cooking at home most of the time	2	2	2	6
Eating out most of the time	3	2	2	7
Electricity Use				
Watching TV for 4 hours/day	3	2	1	6
Using the computer for 4 hours/day	3	2	2	7
Using a gaming console 2 hours/day	3	2	2	7
Using air conditioning every day in the summer	4	3	3	10
Using fans	1	1	1	3
Turning the thermostat to 70°F in the winter	4	2	2	8
Layering clothes in the winter and setting thermostat to 65°F	3	1	1	5
Water Use				
Washing dishes by hand	2	1	1	4
Using the dishwasher	1	1	1	3
Taking 10-minute showers daily	2	1	1	4
Taking 30-minute showers every other day	3	2	1	6
Taking baths	4	2	1	7

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STUDENT WORKSHEET

Name: _____ Date: _____

Answer the questions and fill out the audit below in pencil. Remember, you are only allowed to spend 60 NRUs.

Impact in Natural Resource Units

Action	Uses energy or resources	Disturbs natural areas	Pollutes air, land or water	Total (Add up ALL NRUs for that category and write it in the box)	Personal Cost (For each category, explain the personal cost of your choices. E.g.: If you don't have a car, you will have to carry all groceries and can't travel as far.)
Transportation (Choose 2-4 actions)				Total Transportation NRUs	Transportation Personal Cost
Diet (Choose 1 action)				Total Diet NRUs	Diet Personal Cost
Food Shopping (Choose 1-2 actions)				Total Food Shopping NRUs	Food Shopping Personal Cost
Waste Disposal (Choose 1-3 actions)				Total Waste Disposal NRUs	Waste Disposal Personal Cost

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STUDENT WORKSHEET - PAGE 2

Impact in Natural Resource Units

Action	Uses energy or resources	Disturbs natural areas	Pollutes air, land or water	Total (Add up ALL NRUs for that category and write it in the box)	Personal Cost (For each category, explain the personal cost of your choices. E.g.: If you don't have a car, you will have to carry all groceries and can't travel as far.)
Dining (Choose 1 action)				Total Dining NRUs	Dining Personal Cost
Electricity Use (Choose 3-4 actions)				Total Electricity Use NRUs	Electricity Personal Cost
Water Use (Choose 2 actions)				Total Water Use NRUs	Water Use Personal Cost
				Total NRU Usage for All Categories:	

Please answer the Discussion Questions on the next page.

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STUDENT WORKSHEET - PAGE 3

Discussion

In your group, compare your results and discuss the following questions. Record your answers below.

1. What was the average NRU usage for your group? Show your work below.
2. Did you spend more or less than the average of your group? What choices do you think contributed most to your NRU use being low or high?

3. Were you able to stay under 60 NRUs on your first try? If not, what changes did you make to reduce the amount of NRUs you spent to get you to 60 or fewer?

4. What was the most difficult choice for you to make?

5. If you had more NRUs to spend, would you make different choices? Explain where you might spend them.

6. If you had to try again, but this staying under 50 NRUs, what choices would you make differently?

7. What was one major personal cost you identified? Compare with a member of your group and see if they agreed or had a different personal cost for that category.
