

# Shopping Heats Up

In this simulation, students experience how resources are distributed and used by different people based on access to wealth, paying attention to the environmental and social impacts of resource consumption. Students discuss the impacts of their consumption on climate change.





### Inquiry/Critical Thinking Questions

- What choices are available to people with relatively little access to wealth/income compared to people with relatively high access?
- What are some environmental and social impacts of each of those choices and decisions?
- What personal choices can we make to help reduce the negative impacts from our consumption?

### Objectives

Students will:

- Make and explain purchasing/consumption choices
- Compare different purchasing/consumption choices and their social and environmental impacts
- Describe how relative affluence and high consumption levels relate to climate change
- Discuss how socioeconomic status can limit choices
- Discuss personal choices to reduce the negative environmental and social impacts of consumption

### Time Required

50 minutes

### Key Concepts

- Equity, poverty, and scarcity
- Consumption patterns
- Environmental impacts

### Subject Areas

- Social Studies (Geography, Economics, Global Studies, Contemporary World Problems)
- Science (Environmental, Life)
- Mathematics
- Health/Nutrition

### National Standards Alignment

National Science Education Standards (NSES)

- Standard C: Life Sciences
- Standard F: Science in Personal and Social Perspectives



National Council for the Social Studies (NCSS)

- Strand 3: People, Places, and Environments
- Strand 7: Production, Distribution, and Consumption
- Strand 9: Global Connections

### Materials/Preparation

- Handout: Global Mall Dollars, 1 card per student (there are 6 cards per sheet)
- Handout: Global Mall Items, 1 sheet per student
- (Optional) Teacher master: Global Mall Impacts, 1 copy as teacher reference
- Handout: Choices and Impacts, 1 per group
- Make enough copies of the Global Mall Dollars sheets so that there is 1 card for each student. (Each sheet has 3 \$200 cards, 2 \$1500 cards, and 1 \$5000 card to reflect income distribution around the world. Therefore, more students will end up with \$200 cards and \$1500 cards than \$5000 cards.) Cut the sheets along the dotted lines and fold each card so the amount is not visible.

## Activity

### Introduction

1. Have the class brainstorm human needs (shelter, food, water, energy, etc.).
2. Ask students to think about ways that meeting these needs might contribute to climate change. Are there ways of meeting these needs while improving the environment?
3. Tell students that today they will have a chance to shop for some of their needs at the “Global Mall.” The Global Mall sells resources that humans depend on to live, as well as some “nonessential” items.

### Steps

1. Pass out the handout, Global Mall Items, which lists the items available. Tell students they can select items from the list to purchase with their Global Mall Dollars, but they must first meet basic needs for themselves and their families by selecting items from the categories of food, heat/fuel, and shelter. Only after these needs are met can they buy any of the other items.
2. Pass around a basket with the Global Mall Dollars and instruct each student to take 1 card and not show it to anyone.
3. Instruct students to write the items they purchase on the lines on their card (or on the back), along with the cost of each item (be sure they do this part of the activity individually).

4. While students are making their purchasing choices, keep the pressure on to instill a sense of urgency. Ask, “Who’s done shopping?” Say, “The mall is closing soon!” Students with \$200 Global Mall Dollars will likely finish much sooner than those with \$1500 and \$5000.
5. When students finish their shopping, have them break into 3 groups, putting students with the same dollar amounts (\$200, \$1500, \$5000) together. (There will be more students with \$200; if necessary, subdivide groups so you have 3-5 students per group.)
6. In their groups, have students complete the handout, Choices and Impacts. Ask them to discuss anything they could not afford to purchase and how not having those items might affect their lives.
7. Circulate among the groups and suggest impacts they might not have considered. Use the handout, Global Resource Mall Impacts as a teacher reference.
8. Have each group report to the class on the decisions they made and the impact these decisions would have on their lives and on the environment.
9. Answers to the questions on the Choices and Impacts handout are good starting points for more in-depth discussion. This lesson is also a good introduction for a discussion of who contributes most to climate change

(often wealthier nations) and who is most greatly affected by climate change (often poorer people living on marginalized land), as well as a discussion of how poor people can meet their basic needs and improve quality of life in a sustainable manner.

### Lesson Extension

Assign each group a family from the book, *Material World*, by Peter Menzel. Have the students analyze what that family owns and brainstorm the relative impact those items might have on climate change. Have them examine and compare the carbon dioxide emissions from each family’s country.

### Math Connection

Have students research cost-effective ways of reducing greenhouse gas emissions (e.g., compact fluorescent light bulbs, sealing cracks around windows and doors, unplugging appliances when not in use). Some high-tech solutions are too costly for many people to use; finding cost-effective measures is essential to involve more people in climate change solutions. Give students a “budget” of \$50 and challenge them to find the most effective ways to reduce CO<sub>2</sub> emissions within that budget. How many pounds of CO<sub>2</sub> can their \$50 prevent from entering Earth’s atmosphere? Encourage them to share their findings with parents and teachers.



## Additional Resources

### Books

- *Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble*, Lester R. Brown, W.W. Norton & Company, New York, 2003. Brown calls for a worldwide mobilization to stabilize population and climate before they spiral out of control. It provides a plan for sustaining economic progress worldwide.
- *You Can Prevent Global Warming (and Save Money!)*, Jeffrey Langholz and Kelly Turner, Andrews McMeel Publishing, Kansas City, 2003. 51 tips are provided for reducing greenhouse gas emissions at home while saving money. Potential impacts are reported in dollars saved and pounds of carbon dioxide not emitted.

### Websites

- <http://www.undp.org>—The United Nations Development Programme (UNDP) is the UN's global development network – an organization advocating for change and connecting countries to knowledge, experience, and resources to help people build a better life.
- <http://ibuydifferent.org>—The Center for a New American Dream encourages people to consume responsibly in order to protect the environment, enhance quality of life, and promote social justice. Their “I Buy Different” website provides ideas on how to have a positive impact on the world through consumption choices.

# Global Mall Dollars

<b>\$200</b>		<b>\$200</b>	
<b>ITEM</b>	<b>COST</b>	<b>ITEM</b>	<b>COST</b>
_____		_____	
_____		_____	
_____		_____	
<b>\$200</b>		<b>\$1,500</b>	
<b>ITEM</b>	<b>COST</b>	<b>ITEM</b>	<b>COST</b>
_____		_____	
_____		_____	
_____		_____	
<b>\$1,500</b>		<b>\$5,000</b>	
<b>ITEM</b>	<b>COST</b>	<b>ITEM</b>	<b>COST</b>
_____		_____	
_____		_____	
_____		_____	

# Global Mall Items

<b>Food</b>	<p>Rice and beans once or twice a day. All of this food is locally grown.</p> <p>\$100</p>	<p>Beans, vegetables, and rice daily, plus meat/dairy about once a month. Most of this food is locally grown.</p> <p>\$300</p>	<p>A variety of fast foods 2-3 times a day, such as a hamburger, chicken sandwich, tacos, French fries, soda, and ice cream. Most of this food is highly processed.</p> <p>\$600</p>	<p>High quality food 3 times a day, including eggs, meat, fish, fresh vegetables, fresh imported fruit, bread, milk, imported cheese, and chocolate. Much of this food is organically grown using few chemicals.</p> <p>\$900</p>
<b>Heat/ Fuel</b>	<p>Firewood cut from a local forest, sometimes hours away. Most of this work is done by children and women.</p> <p>No cost</p>	<p>Coal purchased in the market and used for cooking and heating.</p> <p>\$250</p>	<p>Oil used for cooking and heating.</p> <p>\$600</p>	<p>Solar panels using the sun's energy to heat home and water; natural gas for cooking.</p> <p>\$1500</p>
<b>Transportation</b>	<p>One bicycle shared by your family; walk when distance is less than 10 miles.</p> <p>\$75</p>	<p>Community bus with 4 scheduled pick-up times in your community daily.</p> <p>\$125</p>	<p>Older car for driving short distance; gets poor gas mileage. For long distances you have to take a bus or train.</p> <p>\$700</p>	<p>Car large enough to carry a family of 5 people comfortably; includes air conditioning and a radio.</p> <p>\$1200</p>
<b>Home</b>	<p>Small home made from sticks and mud. This home is in a rural area with no electricity.</p> <p>No cost</p>	<p>1-bedroom apartment in a large apartment building in a large city.</p> <p>\$500</p>	<p>Suburban 2-bedroom house with a small front yard.</p> <p>\$1000</p>	<p>Large 3-bedroom house with a pool in the backyard. This home is 15 miles away from where you work.</p> <p>\$2000</p>
<b>Luxury Item</b>	<p>Radio running on batteries.</p> <p>\$50</p>	<p>Small color television in your house.</p> <p>\$150</p>	<p>Refrigerator in your house and air conditioning.</p> <p>\$500</p>	<p>Hawaii surf vacation, including airline ticket, hotel, and souvenirs.</p> <p>\$800</p>

# Global Mall Impacts

## Teacher Master

Food	<p>Rice and beans</p> <p><u>Environmental</u>: no/less agricultural chemicals; little tilling of the soil</p> <p><u>Social</u>: lack of essential vitamins results in more malnutrition</p>	<p><b>Beans, veggies, meat</b></p> <p><u>Environmental</u>: tilling soil releases CO<sub>2</sub>; livestock release methane and require much food and water</p> <p><u>Social</u>: good nutritional value</p>	<p><b>Fast foods</b></p> <p><u>Environmental</u>: water/feed for beef production, deforestation for cattle grazing (releases CO<sub>2</sub>); livestock release methane; making fertilizers releases nitrous oxide</p> <p><u>Social</u>: convenient but unhealthy, some fats linked to heart disease</p>	<p><b>High quality food</b></p> <p><u>Environmental</u>: deforestation for cattle grazing; greenhouse gas emissions from transportation of imports; agricultural chemicals; air and water pollution</p> <p><u>Social</u>: healthy but cash crops take away from staple food crops</p>
Heat/Fuel	<p><b>Firewood</b></p> <p><u>Environmental</u>: deforestation; desertification; fewer trees for carbon storage; air pollution</p> <p><u>Social</u>: poverty (time away from school, work, food production); smoke linked to lung disease</p>	<p><b>Coal</b></p> <p><u>Environmental</u>: CO<sub>2</sub> emissions; air pollution; water pollution from mining</p> <p><u>Social</u>: easier to use than firewood, but may result in lung disease if cooking area is not ventilated; miners susceptible to lung disease and mining-related injuries</p>	<p><b>Oil/Gas</b></p> <p><u>Environmental</u>: oil drilling, spills, pipeline impacts; CO<sub>2</sub> emissions; air pollution; loss of habitat</p> <p><u>Social</u>: convenient, but results in dependency on oil/gas supplies, often from foreign regions</p>	<p><b>Solar panels</b></p> <p><u>Environmental</u>: clean, renewable source of energy; no CO<sub>2</sub> emissions (except to manufacture and transport panels)</p> <p><u>Social</u>: convenient; sunlight is free; expensive to install but saves money in the long run; no health risks</p>
Transportation	<p><b>Bicycle and walk</b></p> <p><u>Environmental</u>: no greenhouse gas emissions, except from manufacturing the bike</p> <p><u>Social</u>: good for physical health; often takes longer to bike or walk than to use motor transportation</p>	<p><b>Bus</b></p> <p><u>Environmental</u>: relies on fossil fuels and causes air pollution, but less than if each rider drove a single automobile</p> <p><u>Social</u>: less air pollution (better for lung health); time spent waiting for bus</p>	<p><b>Older car/Bus/Train</b></p> <p><u>Environmental</u>: burns fossil fuels; exhaust pollutes air; train and bus pollute less per passenger</p> <p><u>Social</u>: freedom to go to nearby places at any time</p>	<p><b>Newer car</b></p> <p><u>Environmental</u>: air pollution and greenhouse gas emissions; environmental resources to make car (e.g., metal from mining, plastic from petroleum)</p> <p><u>Social</u>: freedom to drive anywhere and carry large items</p>
Home	<p><b>Hut</b></p> <p><u>Environmental</u>: removing sticks from forest leads to erosion and reduction of soil nutrients</p> <p><u>Social</u>: continual maintenance required; difficult to keep out heat/cold and flies</p>	<p><b>Small apartment</b></p> <p><u>Environmental</u>: living in dense housing uses fewer environmental resources and requires less heating</p> <p><u>Social</u>: close community; no yard; less privacy than a single-family home</p>	<p><b>Two-bedroom house</b></p> <p><u>Environmental</u>: suburban neighborhoods have many dead-end streets, requiring extra driving; water used to maintain yard</p> <p><u>Social</u>: yard for recreation; potential stress of driving into city (traffic, accidents, etc.); gas expense</p>	<p><b>Large house with pool</b></p> <p><u>Environmental</u>: energy required to heat and cool large house; water and chemicals for pool; CO<sub>2</sub> from driving</p> <p><u>Social</u>: economically exclusive neighborhood is often less culturally diverse; time and gas spent driving to/from work</p>
Luxury Item	<p><b>Radio</b></p> <p><u>Environmental</u>: energy required to manufacture and use; batteries toxic to soil</p> <p><u>Social</u>: access to information; entertainment</p>	<p><b>Color TV</b></p> <p><u>Environmental</u>: resources to manufacture and use; pollution from improper disposal or recycling</p> <p><u>Social</u>: access to information; entertainment</p>	<p><b>Refrigerator</b></p> <p><u>Environmental</u>: CO<sub>2</sub> and chlorofluorocarbon (CFC) emissions; resources to manufacture</p> <p><u>Social</u>: convenient access to fresh food</p>	<p><b>Surf vacation</b></p> <p><u>Environmental</u>: burning jet fuel releases CO<sub>2</sub>; resources to make airplane; land used for airport and runways</p> <p><u>Social</u>: lower stress; enjoyable; expensive</p>



# Choices and Impacts

GROUP MEMBERS \_\_\_\_\_

Amount of money each group member started with \_\_\_\_\_

INSTRUCTIONS: Select and list 4 items that members of your group purchased. Consider environmental (including climate change connections) and social impacts, whether positive or negative, for each item. Then discuss and write answers to the questions below.

ITEMS PURCHASED	ENVIRONMENTAL IMPACTS	SOCIAL IMPACTS

1. How would the choices you made affect Earth's climate? Would they contribute to or lessen the effects of climate change, or would they have a neutral effect?
2. How did your economic status affect your purchasing choices, including whether you were able to consider environmental and social impacts?
3. In what ways could you reduce the negative impacts of one of the items you purchased?
4. In what ways will climate change impact someone of your group's economic status?
5. Do you think people with more or less money will be affected by climate change to a greater degree? Explain your answer.
6. How can poor people improve their quality of life in ways that don't contribute greatly to climate change?