

BIG WORLD, SMALL PLANET

Module 4: Wants Versus Needs: Pushing the Boundaries Student Edition



*A comprehensive guide to global
issues and sustainable solutions*

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and Sustainable Solutions*

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Module 4: Wants Versus Needs: Pushing the Boundaries
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About Facing the Future

Facing the Future is a program of Western Washington University. Facing the Future's mission is to create tools for educators that equip and motivate students to develop critical thinking skills, build global awareness, and engage in positive solutions for a sustainable future.

Facing the Future develops and delivers standards-based hands-on lessons, student texts, curriculum units, and professional development opportunities for educators. Facing the Future curriculum is in use in all 50 U.S. states and over 140 countries by teachers and students in grades K-12, in post-secondary education, and across multiple subject areas. Facing the Future reaches over 1.5 million students through its programming.

For more information, visit www.facingthefuture.org.



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Introduction to Consumerism

Unit 1

Essential Questions For This Unit

1. *How can I make more sustainable consumer choices?*
2. *Where do the things that I use go at the end of their useful life?*
3. *Who made the things that I use? What is life like for those people?*
4. *How does my consumption of goods affect overall global sustainability?*



Introduction to Consumerism

In 1955, the economist Victor Lebow made this statement:

Our enormously productive economy... demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfaction, our ego satisfaction, in consumption... We need things consumed, burned up, worn out, replaced, and discarded at an ever increasing rate.¹

It is not clear whether Mr. Lebow meant to encourage or simply recognize consumption as a driver of our economy. Either way, he correctly described the global economy today. For example, according to the World Bank, consumer spending has accounted for about two-thirds of the United States' economy since 2000, and similar patterns of consumption can be seen in many other developed countries including Sweden, Venezuela, India, and Great Britain.²

developed country:
A country that has an advanced technological infrastructure and in which average income is higher than average, compared with other countries in the world. Sometimes the term “More Economically Developed Country” is used to refer to countries in this category.



Producing and Consuming Goods

Consumption is part of a larger system called the materials economy. The **materials economy** includes all the steps involved in producing and consuming goods, including disposal.

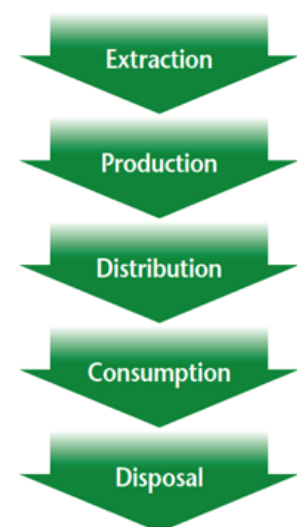
One way to envision this system is as a series of sequential steps. This sequence is sometimes called a “take-make-waste” process because materials and energy are used in one step after the other, usually ending with the product being thrown away. Let’s look at this approach to get a feel for the steps involved in the traditional manufacturing and purchasing process. At each step along the chain, there are environmental, economic, and social considerations.

Extraction

Extraction is the removal of resources from a natural environment. Extraction can refer to harvesting; for example, trees are harvested to make lumber. Extraction can also refer to mining, such as coal that is mined from deep inside mountains or below the Earth’s surface. Water use is also considered a form of extraction; it involves the removal of a natural resource from the environment for human consumption.

Extracting materials requires energy to find, harvest, refine, and transport materials. Extracting also often creates large amounts of waste, since the desired raw material must be separated from other materials. Jobs in the extraction industry, such as logging and mining, often pay relatively well but may have very dangerous working conditions.

Steps in the Materials Economy





Effects of Rising Temperatures

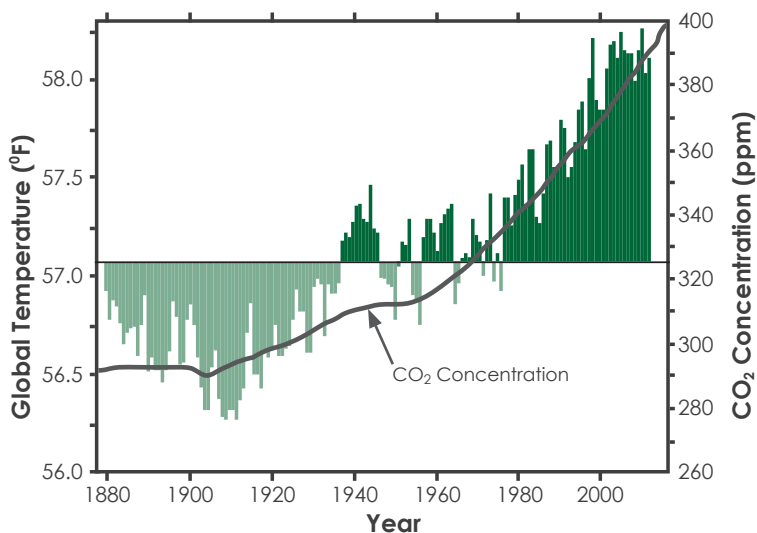
The steady increase in Earth's average temperature is having varied and complex consequences. Different locations around the planet are affected in different ways. Some regions may experience drought and extreme heat while others may experience heavy rainfall and flooding. Sea level may rise because polar ice caps may melt. Changing temperatures can affect ecosystems, requiring species to migrate to find regions that meet their temperature and weather needs. While average temperatures rise for the planet as a whole, some areas could experience more snow, more rain, and lower temperatures. Bigger temperature increases would cause stronger and more wide-ranging effects.⁴⁷

Carbon Dioxide and Climate Change

Carbon dioxide is the most abundant greenhouse gas. Scientists have observed a close correlation between variations in atmospheric CO₂ levels and average global temperatures over thousands of years. There has been a sizeable increase in CO₂ levels beginning in the mid-1700s with the start of the Industrial Revolution. As CO₂ concentrations have increased, so has the overall average temperature on Earth's surface.

The amount of CO₂ in the atmosphere is measured in parts per million. This measurement is similar in concept to percentages, which can be thought of as parts per hundred. Scientists consider a concentration of 350 parts per million, or 0.035%, to be a safe level.⁴⁸ The following chart shows the trends in atmospheric CO₂ and global temperatures.

Global Temperature and Carbon Dioxide



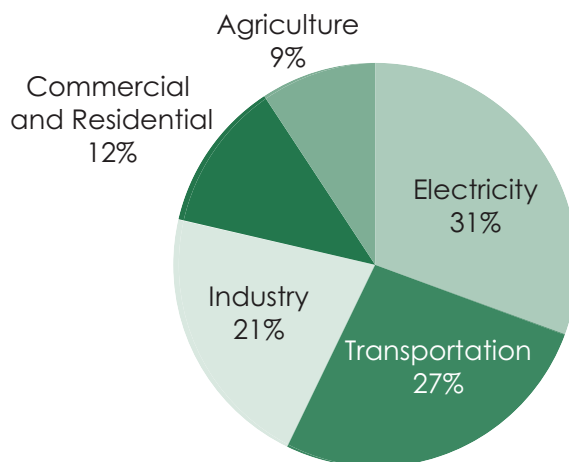
Source: Globalchange.gov⁴⁹



The Human Element: Driving Forces

It is not accurate to say that all of the changes we see in our climate today are caused by human activity. However, scientific research tells us that natural causes are not enough to cause the warming we see today.⁵⁰ Our choices related to lifestyle and consumption have an impact on Earth's atmosphere. Humans burn fuels for energy, cut down trees for timber and to clear forests for farmland, and till soil and use chemicals for farming. These greenhouse gas emissions and other human factors are considered by scientists "extremely likely" to be the most significant cause of observed global warming since the mid-1900s.⁵¹ The figure below shows the human activities that contribute to climate change in the United States.

U.S. Contributors to Climate Change⁵²





Activity Three

Nature Journal

Activity

1. **Observe wild nature.** Each day, look for an example of wild nature in your daily life. You might notice a bird on a nearby tree, hear rain falling on the roof, or spot a weed pushing up through cracks in the sidewalk. The only requirement is that the observation not reflect a manufactured object or anything made with a manufactured object.

One option is to choose something to observe every day over the four weeks of the unit. You could notice the phases of the moon, the time and location of the sunset, the presence of birds or insects, patterns of wind or clouds, or something else that catches your interest.

Here is a mindfulness-based process you can use for observing wild organisms and building a sense of nature connection:

Step outside with the intention of experiencing yourself as part of nature. Try to let your thoughts run in the background of your mind without focusing on them. As you step outside, use your entire field of vision to take in your surroundings. Notice everything, living and non-living alike. Tune in to all of your senses. Notice sights, smells, sounds, temperature, wind, and sun. Allow some living organism to draw your attention. Keep your focus on it for at least 10 seconds, longer if you



Activity

Day 2

1. **Estimate average wages earned by people who make the clothing worn by students in your class.** Based on your work on Day 1 of this activity, create a list of the countries where clothing worn by students in the class was manufactured. Group the countries by continent. Using the data in the Minimum Wage Hourly Pay Rates by Country table on page 69, calculate the average hourly wage for a garment worker on each continent. Create a simple T-chart in your field book to record the averages for each continent.

2. **Create a table in your Field Book with seven columns and nine rows.** Use a full two-page spread if you need to. Title the table "Garment Workers' Purchasing Power Around the World." Use the example below to set up the top row of your table, dividing most of the row in half as shown. In the left column, write the following headings: One Kilogram of Rice, One Can of Soda, Monthly Bus Pass, Basic Pair of Jeans, Doctor Visit, One Month of Cell Phone Service, Television (32" screen), and Two-Hour Flight.

Good or Service	Work Hours Needed for Garment Workers to Purchase the Good or Service on Each Continent					
	Africa	Asia	Europe	North America	Oceania	South America
One Kilogram of Rice						
(list remaining goods and services)						



3. **Estimate the number of hours that garment workers would need to work to pay for various goods and services.** To calculate the number of hours, use the following equation:

work hours needed

=

(cost of good or service)

/

(garment worker average hourly wage for the continent)

Use the estimates for costs of goods and services shown in the following table.



Activity Eighteen

Climate Change and Systems Thinking

Activity

1. Complete the “**Climate Change and Systems Thinking**” work paper provided by your teacher. Add the completed handout to your Field Book.
2. Write a response to the **Think About It** box on page 33.
3. Update your **Learning Links** page. Try to wrap up and connect any ideas you have noted during the unit.

Field Book

1. **Nature Journal:** What fresh produce have you eaten today? Is it in season? Think about the sun recently shining on the plant that grew the food and about that energy from the sun entering your body. Sketch or write about the process, the transfer of the sun's energy through the plant to you, and your thoughts and feelings.
4. Review your **Questions** page. Do you have unanswered questions? How can you get them answered?
5. Review your **Field Book** work over the unit. You will draw on this work in tomorrow's activity.