

HAMBURGER, FRIES, AND A COLA: WHAT DOES IT TAKE TO PRODUCE THIS FAVORITE AMERICAN MEAL?

The meat for this meal comes from cattle that grazed on public or private land and later fed grain. About 10 percent of all public lands in the western United States have been turned to desert by overgrazing, and about two-thirds of those public lands are significantly degraded. Streamside lands, where cattle graze, have been especially damaged.

It takes approximately 2 pounds of grain to produce a quarter pound of meat, and that grain production causes five times its weight in topsoil loss due to erosion from unsustainable farming methods. Producing the grain also takes substantial amounts of pesticides and fertilizers (half of all fertilizer in the United States is applied to feed corn for animals), some of which run off into surface water or seep into groundwater supplies. It takes 600 gallons of water to build a hamburger patty. Once slaughtered and processed, the meat is frozen, shipped by truck, kept cold, and then cooked on a grill using natural gas.

A 5-ounce order of fries comes from one 10-ounce potato grown in Idaho on half a square foot of soil. It takes 7.5 gallons of water to raise a potato, plus quantities of fertilizer and pesticides, some of which run off into the Columbia or Snake Rivers. Because of the run-off and dams that

generate power and divert water for irrigation, the Snake River sockeye salmon is virtually extinct. A number of other species are also in decline because of these production practices.

Potatoes are dug with a diesel-powered harvester and then trucked to a processing plant where they are dehydrated, sliced, and frozen. The freezing was done by a cooling unit containing hydrofluorocarbons, some of which escape into the atmosphere and likely contribute to global climate change. The frozen fries are then trucked to a distribution center, then on to a fast-food restaurant where they are stored in a freezer and then fried in corn oil heated by electricity generated by hydropower.

The fast-food restaurant in which the meal is served is often built on what once was originally forest, then farmland, then converted to commercial/industrial uses as the city expanded. The ketchup in aluminum-foil packets came from Pittsburgh and was made from Florida tomatoes. The salt came from Louisiana.

The cola comes from a Seattle processing plant. It is made of 90 percent water from the Cedar River. The high-fructose corn syrup comes from Iowa, as does the carbon dioxide used to produce the fizz, which is produced by fermenting corn. The caffeine comes from a processing

plant that makes de-cafeinated coffee. The cola can is made from one-third recycled aluminum and two-thirds bauxite ore strip-mined in Australia. It comes to Washington state on a Korean freighter, and is processed into aluminum using an amount of energy equivalent to a quart of gasoline. The energy comes from some of the same dams mentioned earlier that have contributed to a 97 percent decrease in the salmon runs of the Columbia Basin.

The typical mouthful of food consumed in the United States travels 1,200 miles for us to eat it. Along the way, it requires packaging, energy, roads, bridges, and warehouses, and contributes to atmospheric pollution, adverse health effects, and traffic congestion.

*Adapted from Stuff—The Secret Lives of Everyday Things, by John C. Ryan and Alan Thein Durning, published by Northwest Environment Watch.
www.northwestwatch.org.*

When the Chips are Down Handout

Name _____ Date _____

Name of your country _____

Answer the following questions when reflecting on the game *When the Chips are Down*. Use the back of this sheet if you need more room to write.

1. What two things can make a country's total environmental footprint bigger?
2. What might happen if the game had continued for two more cycles?
3. Do any of the things that happened in the game actually happen in the world? If yes, give three examples.
4. What decisions would each country have to make if it continue for two more generations?
5. What different choices would you have made in planning your country if you had known what was going to happen?
6. What are three things that you could do to shrink your personal environmental footprint?

When the Chips are Down Answer Key

Name _____ Date _____

Name of your country _____

Answer the following questions when reflecting on the game *When the Chips are Down*. Use the back of this sheet if you need more room to write.

1. What two things can make a country's total environmental footprint bigger?

The answers will vary, but they could include increases in population and consumption.

2. What might happen if the game had continued for two more cycles?

The answers will vary, but they could include famine, overcrowding or conflict. Also, this is where the student or group calculates how many footprints/chips they will need for Round 5 and Round 6.

(Use the pattern from the procedures #5.)

3. Do any of the things that happened in the game actually happen in the world? If yes, give three examples.

Yes, answers could include overcrowding, famine, and wars. (Refer to issues listed in the Purpose)

4. What decisions would each country have to make if it continued for two more generations?

The answers will vary, but they could include housing restrictions or land use regulations.

5. What different choices would you have made in planning your country if you had known what was going to happen?

The answers will vary. (Possible options include more resources, smaller cities, more open space.)

6. What are three things that you could do to shrink your personal environmental footprint?

The answers will vary. (Should include conservation, recycling, limiting family size-future, changing lifestyle and education.)